due to abnormal pigment deficiency. I cannot call to mind a case of retinitis pigmentosa in a very fair person, but I have seen too few examples of retinitis punctata to be sure of the opposite.

In conclusion, my thanks are due to Mr. Foster Moore for permission to report Cases II, III and IV.

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TWINS WITH EYE DEFECTS—AMETROPIA AND STRABISMUS

BY

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THE following twelve pairs of twins have been seen in the course of ordinary school and other eye-work. As they have been ophthalmologically selected they may not meet the strict requirements of the specialist in biometrics, yet their manifestations may be of some value.

The evidence of heredity found in uniovular, or monozygotic twins is naturally of great value. Information on the character of the pregnancy relative to this question is seldom available for the biometricians and for diagnosing mono- from dizygotic twins; they have to depend on height, weight, facial resemblance, colour of hair and eyes, head measurements and finger-prints.

The refraction of the eyeball estimated by retinoscopy, the curvature of the cornea taken by the ophthalmometer and the presence, or absence, of strabismus, in all pairs thought to be monozygotic should be made available for the biometricians. Sufficient information on these points would probably decide whether departures from emmetropia (hypermetropia, myopia and astigmatism) and strabismus, are due to heredity or to environment, to nature, or nurture.

It is impossible to say how many pairs in my series are monozygotic, yet all the pairs are of like sex and as in several pairs the retinoscopies are alike, it may be reasonable to assume that one-half are of monozygotic origin.

If we get, say, 4 dioptries of hypermetropia in one twin and 5 dioptries in the other, or 6 dioptries of myopia in one twin and 7 dioptries in the other, then probably these should be classed as being alike, but I have not done so.

It is claimed that dizygotic twins have the similarities and dissimilarities that are found in other members of the same families born at different times. As evidence on the conditions of brothers and sisters of twins is scanty, I have taken fifty pairs of brothers and sisters from other families and used them as contrasts.

The ametropia and strabismus found in twelve pairs of twins:—

		R.E.	L.E.
1.	S. R., 10. Strab. convergent, altern.	H. 5 D.	H. 5 D.
	C. R. Strab. convergent, altern.	H. 5 D.	H. 5 D.
2.	G. S., 7. Strab. convergent, R.E.	H. 5.5 D.	H. 5.5 D.
	J. S. Strab. convergent, L.E.	H. 5.5 D.	H. 5.5 D.
3.	J. L., 7. Strab. convergent, slight	H.A. 4 c. 1 D.	H.A. 4 c. 1 D.
	G. L. Strab. convergent, slight	H.A. 4 c. 1 D.	H.A. 4 c. 1 D.
4.	C. C., 3. Strab. convergent, L.E.	H. 2 D.	H. 2 D.
	J. C. Strab. convergent, L.E.	H. 3 D.	H. 3 D.
5.	T. F., 9. Strab. convergent, L.E.	H.A. 2 c. 1 D.	H.A. 3 c. 1 D.
	R. F. Strab. convergent, R.E.	H.A. 2 c. 1 D.	H.A. 2 c. 1 D.
6.	A. R., 7.	H.A. 2.5 D. cyl.	H.A. 2 c. 1.5 D.
	W. R.	H.A. 1 c. 2 D.	H.A. 1 c. 2 D.
7.	T. D., 9.	M.A. 1.25 D. cyl.	M.A. 1.5 D. cyl.
	W. D.	M.A. 1 D. cyl.	M.A. 0.5 D. cyl.
8.	M. L., 12.	H.A. 5 c. 1.5 D.	H.A. 5 c. 1.5 D.
	J. L.	H.A. 3 c. 3 D.	H.A. 3 c. 3 D.
9.	B. F., 12.	H. 8 D.	H. 8 D.
	N. F.	H. 5 D.	H. 5 D.
10.	B. C., 9.	H.A. 1.5 D.	H.A. 1.5 D.
	E. C. Strab. convergent, L.E.	H. 1.5 D.	H. 1.5 D.
11.	M. G., 6½.	H. 3 D.	H. 1 D.
	J. G.	H. 4.5 D.	H. 5.5 D.
12.	Q. W., 6.	H.A. 1 c. 2 D.	H.A. 1 c. 2 D.
	W. W.	H. 1 D.	M.A. 1.5 c. 2 D.

Pair No. 1 were seen when four years of age and again six years later when the conditions were found to be unchanged. Pairs Nos. 1, 2 and 3 may be considered to be alike; Nos. 4, 5, 6, and 7 have only 1 dioptré of difference; Nos. 8, 9, 10, 11, and 12 have more than 1 dioptré of difference between the members of each pair.

SUMMARY.

Cases alike	25 per cent.
Cases approximately alike	33.5 per cent.
Cases with more than 1 D. of difference	41.5 per cent.

In the first group, five of the six children are squinters; in the second group, four of the eight children are squinters; and in the third, one of the ten children is a squinter. Although these figures are striking, the number of cases is not large enough to warrant any general deductions.

Brothers and sisters born at different times, and not related to twins:—50 pairs.

SUMMARY.

Cases alike or with only 0·5 D. of difference	14 per cent.
Cases approximately alike	16 per cent.
Cases with more than 1 D. of difference	70 per cent.

In the first group here there are six squinters, in the second 4, and in the third 31 squinters.

I regret that my reports are imperfect from the biometrician's point of view.

It is highly desirable that others who have the opportunity should collect and report their observations on the state of refraction, the corneal curvature, the presence or absence of strabismus, the general resemblances and even other measurements. It is probable that such data would assist the valuable work being done by Dr. Percy Stocks and others, now in course of publication in the *Annals of Eugenics*.

A SUGGESTION AS TO THE CAUSE OF GLAUCOMA FOLLOWING THROMBOSIS OF THE RETINAL VEIN

BY

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I THINK it is commonly agreed that where a patient's eyes are near the border line between normal and increased tension, the occurrence of thrombosis of the retinal vein may lead to a glaucomatous attack. The reasons for this do not seem quite satisfactory, and the following observations may be of use.

I have for a long time been in the habit of examining all the cases of fundus disease seen by me in private by red-free light, which, with a plane mirror, gives one an ideally fine picture of the finest details in the retina.

A 4·5 amp. Leitz arc lamp, a water cooler, a convex lens to render the rays only slightly divergent, and a Zeiss red-free glass filter is all the equipment needed, and costs about £5.

In old age the yellow tint of the patient's lens dims the brilliancy of the picture, and here one can substitute a Kodak Green "B" filter which will illuminate a fundus even where the lens is getting opaque. This has been used by others. It does not apply to the present cases.