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The Racial Difference of the Mydriatic Action of Ephedrines, Cocaine, and Euphthalmine.*

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In the continuation of the study of ephedrine as a mydriatic,[1] it was found that in Caucasians a 10% solution uniformly produces mydriasis by local application, and that its mydriatic action is further strengthened if it contains, in addition, 0.1% of homatropine hydrobromide, or 1.0% of euphthalmine hydrochloride. These solutions are useful in ophthalmoscopic examination, especially from the patients' point of view, because they cause almost no change in accommodation. There were no untoward symptoms or signs noted. Only in iritis and uveitis do they fail to dilate the pupil.

TABLE I.

A comparison of mydriasis occurring in different races, 1 hour after an instillation of 2 drops of the solution, observed in diffuse daylight.

Hydrochloride of	Strength of solution in per cent	Race	Number of observations	Mean increase† of the transverse diameter of the pupil in mm.
Ephedrine	10	Caucasian	21	2.0+
		Chinese	5	0.5+
		Negro	21	0.5
Pseudo-ephedrine	10	Caucasian	20	1.0
		Negro	21	0.0
Synthetic Ephedrine	10	Caucasian	19	1.5
		Negro	21	0.0
Cocaine	4	Caucasian	20	2.0—
		Negro	21	0.0
Euphthalmine	5	Caucasian	20	2.5+
		Negro	21	1.0

* This investigation has been aided by a grant from the American Pharmaceutical Association Research Fund.

† Mean increase is the average of the central 3 or 4 figures of the data arranged numerically.

Ephedrine is, however, much less certain as a mydriatic in Chinese and Negroes. Not infrequently does it fail to produce any appreciable mydriasis. It was also found that pseudo-ephedrine, synthetic ephedrine, cocaine, and euphthalmine, are less powerful in dilating the pupil of the colored races. The results observed in diffuse daylight are summarized in Table I.

Further observations are being made under controlled illumination by accurately measuring the image of the pupil with a filar micrometer attachment in a telescope. These data corroborate the above preliminary measurements and will appear at a later date.

Howard and Lee of Peking[2] reported that ephedrine is more effective as a mydriatic in individuals with light irides than in those with dark. Their results are on the same line with ours.

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Relation of Liver to Fat Metabolism. I. Respiratory Quotient in Conditions of Liver Insufficiency.

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It has long been known that animals fail to survive extirpation of the liver. The recognized changes in the blood resulting from this procedure show clearly that the liver is essentially concerned with both carbohydrate and protein metabolisms. Does the organ possess a vital function in relation to fat metabolism as well?

For the purpose of solving this and other problems, a successful method of inducing liver insufficiency in rabbits has been devised, whereby slightly more than 90% of the liver is removed without demonstrable interference with the return of blood to the heart. Unless treated, the animals survive but 6 to 18 hours, dying with low blood sugar and convulsions. If given glucose, they live for varying periods up to 5 days, dying eventually in a state resembling that developing in dogs deprived of the entire liver.[1] A study of the respiratory quotient of rabbits deprived of 90% of the liver has brought out the fact that fat metabolism is carried on as readily and as rapidly after the operation as before.