

flowers of the most precious strains in the garden of life are being plucked before they produce seed.

The essay on heredity and politics is one of the best in the book. A successful nation is a powerful nation, and the authors conclude: "A 'theory of power' which takes account of modern biological knowledge in a strenuous effort to improve the physical, mental and moral state of the race, by both environment and heredity, and by their interaction one on the other, seems to us a good basis for political endeavor." Increasing the men of genius will make possible improved environment, but if racial efficiency fall civilization must decline. And the civilized nations spend their substance in caring for the unfit for whom the fit are taxed to such an extent that they can not carry the added expense of children. So it has come about that only the weakling can afford to have children in unlimited numbers, since the state will care for *their* children. The handicap on the fit is too heavy; it is they, and not the unfit, who are, in effect, being sterilized. A governing class becomes such and maintains itself by virtue of its inherent strong traits. Even in democratic America the opportunities afforded by business have lured the strongest men into it, and so "big business" has come to constitute the governing class. And as between nations, that which breeds the most of the best blood, while taking advantage of the advances of science and sanitation, will eventually surpass the others and inherit the earth.

C. B. DAVENPORT

THE INHERITANCE OF SKIN COLOR

THE mulatto is frequently instanced as a "blend"; and an exception to the Mendelian scheme of inheritance in that he is supposed to breed true. This position, I believe, represents an off-hand judgment based on insufficient evidence or faulty observation. I have seen a number of unquestionable cases of "reversion" to grandparental skin color among the fraternities of mulatto crosses. In numerous instances one of the third gen-

eration is either darker or lighter than either parent, *i. e.*, he has the skin color of his negro grandmother or his white grandfather, this being the invariable nature of the cross.

A man is a combination of thousands of characters; skin color is only one of these. When one considers the offspring of mulattos one must remember that such may have a negro skin associated with a European nose, or negro lips with white skin. One meets with plenty of mulattos that from the standpoint of skin color alone are white, brunette or blond; but one is not deceived as to their extraction since negroid features appear in combination. The probable explanation of the general opinion that mulattos breed true, contrary to the Mendelian principle of segregation, is due to this fact of failure to dissociate skin color from other facial characteristics. The Davenports¹ cite five cases of undoubted segregation of skin color in the third generation. Such families are fairly common in the south. I have shown, moreover, that histologically there is no difference between the skins of blonds, brunettes, mulattos and negroes, except in the abundance of identical pigment granules.² Histologically, many mulatto skins can not be told from brunette skins.

The heredity of skin color in crosses between negroes and whites unquestionably follows Mendelian laws. The mulatto shows the dominance (frequently imperfect) of the deeper pigmented condition. In the next-succeeding generation there is again a segregation of negro and white skin colors.³ The fact, however, that the first generation of

¹ *Am. Nat.*, Vol. 44, 1910.

² *Am. Nat.*, Vol. 45, 1911.

³ The same is true with respect to an extensive Indian-negro cross which occurred in Amherst and Nelson counties, Va., resulting in the loss of an entire Indian tribe. I am told that in many families one or several of the children are distinctly more Indian or more negro than the prevalent type of the cross. Here again the negro skin color seems dominant to the Indian; on the contrary, the Indian type of hair apparently dominates over the kinky negro hair.

mulattos is frequently not as dark as the negro parent, and among the second (F_2) generation one or several may be darker than the darkest mulatto parent and one or several lighter, without being quite as dark or as light as the negro or white grandparent respectively, suggests strongly that a complex of factors is involved.

The fact of the apparent histologic identity between brunette and mulatto skins; and the further fact that under protracted exposure to extremes of heat and sun the number of pigment granules is increased in white skin, indicates that pigmentation (dark skin) as evidenced in the negro is an instance of the inheritance of an acquired character. The least that makes a negro a negro is his dark skin. Life-guards in September are frequently almost as black. A negro is specifically such for mental perhaps more than for physical characteristics. Moreover, the negro originally hails from tropical regions; he has been for unknown periods of time exposed to the hot tropical sun. In foreign lands he thrives best in hot climates. Pigmentation in him has probably arisen as a response to a protective demand against the rays of the sun, just as whites now acquire a "tan" under similar less extreme and less prolonged conditions. This line of reasoning would appear cogent enough, but unfortunately it can not be experimentally tested. In the absence of such test it must remain simply a speculation.

Moreover, if Kingsley's quotation in "At Last" of a description of the inhabitants of Saba by the Bishop of Antiqua is to be trusted, the results of one of nature's experiments along these lines militates against the speculation. The Bishop spoke of them, Kingsley says, as "virtuous, shrewd, simple, healthy folk, retaining, in spite of the tropic sun, the same clear white and red complexion which their ancestors brought from Holland two hundred years ago—a proof, among many, that the white man need not degenerate in these places."⁴

The two most obvious explanations of negro

deep pigmentation are the one outlined above, *i. e.*, acquired in response to a peculiar environment and transmitted; and as inherited from anthropoid ancestors. The evidence yielded by the inhabitants of Saba of the West Indies renders inadmissible the first. What facts support the latter interpretation?

In the first place the negro is a primitive type of man, as indicated by numerous anatomic marks (*e. g.*, relative length of arms and legs, male external genitalia—prepuce covers glans—shape of nose, use of hallux, etc.) which are more or less infantile European characters. He apparently stands much closer in the evolutionary scale to the anthropoid apes, with pigmented faces. The negro may have inherited his dark skin from his pigmented pre-man ancestors. He may be habitually an inhabitant of the tropics because he alone could survive in that climate, or because he was best suited and thus more comfortable there. The dark-skinned races, like the Italians and Spanish, and finally the brunettes of the Anglo-Saxon race, may owe their pigmentation to negroid ancestry. The connecting link may well have been the negro slaves of Roman times, and the conquering Teutons.

Moreover, anthropoid ancestry may account more directly, *i. e.*, without negroid intervention, for the pigment of "whites"; or, as in numerous other instances, so in the case of pigmentation, we may simply be dealing with an instance of parallelism. Similar results of varying degrees may have been attained under the influence of similar conditions, at various times and various places. It seems impossible at present to arrive at a definite conclusion. Complete knowledge on this point may perhaps never be forthcoming. The above discussion indicates the possible origin of a multiplicity of factors in skin-color determination. However, regarding the histologic similarity between light and deep pigmented skins and a measure of segregation among the children of black-white crosses there remains no question.

H. E. JORDAN

UNIVERSITY OF VIRGINIA

⁴ P. 23 (ed. 1910, Macmillan & Co.).