

cell to see him. He gave me a long account of the commission of the crime, and of his doings down to the time of his capture at Boston. It was all a disgusting story of villany and conceit. He was a slippant boy, whose head, I think, was turned by melo-dramas and the Jack Sheppard order of novels—all but one little item. When he had received the money, and every moment was worth diamonds to him—

he intended to sail in the *Great Western*, it will be remembered—he spent an hour in going up to a pawnbroker's shop in the Bowery, to get a little piece of jewellery he had in pledge there—a *keepsake from his dead mother*. He told me in his cell that he would have given a thousand dollars for another half hour, *yet he could not go away without that locket*. That half hour cost him the doom he afterwards had meted out to him.

Ethnology

WHAT IS A RACE?

BY MELVILLE J. HERSKOVITS

THERE are two fundamental assumptions which all the current protagonists of racial superiority make, both of which are unproved and probably completely fallacious. The first is that race and culture can be related, one to the other. The second, upon which the first should rest, is that we are able to give a reasonably complete definition of the term "race."

The books that have dealt with the subject of late range all the way from the fulminations of Madison Grant, Lothrop Stoddard and Professor MacDougall, to Dr. Carl C. Brigham's careful "Study of American Intelligence." Dr. Brigham, in this work, utilizes the result of the Army Intelligence Tests to argue, first, that the Nordic "race," when compared to other groups, is superior in intelligence and in adaptability to our culture, and, second, that the general intelligence of the immigrants who have come to this country has decreased with each five-year period for the last twenty years. No one can read his book without admiring the cleverness with which his hypotheses are advanced and maintained; nevertheless, his fundamental assumptions must be questioned. For example, consider the table he prints, purporting to exhibit the percentages of Alpine, Nordic, and Mediterranean blood in each of the countries of Europe. The figures range from Sweden, with 100 per cent Nordic, to Portugal, with 95 per cent Mediterranean. Where this table was procured, and how it was worked out, I do

not know, for Dr. Brigham merely says that it was compiled "in collaboration with students of the subject." If one may judge from quotations, the principal authority was probably William Z. Ripley, whose work on the races of Europe was standard until his methods were attacked and shown to be fallacious. Ripley, and those who follow him, have used a scheme of classification which is roughly this: One trait, that of head-form, is determined for as many of the peoples as there are data available, and they are then classified as to whether, on the average, they are round-headed (brachycephalic), long-headed (dolichocephalic) or medium-headed (mezzocephalic). The obvious presumption is that there is a constant relation between race and the distribution of this trait. But it has been shown by Dr. Franz Boas in his investigation for the Immigration Commission of 1910 that head-form tends to change under a changed environment. Moreover, we do not really know just how head-form is inherited—that is, whether it assumes the form of a Mendelian unit-character or not. Thus, race classification based on the distribution of this one trait cannot be sustained.

A recent attempt by Dr. Roland B. Dixon to use the three criteria of head form, head-height, and nose-form has had the surprising result of revealing Negroid characteristics among the Iroquois Indians, and Mongoloid traits in the heart of the Congo. Dr. Dixon's work, indeed, was received with almost unanimous adverse criticism in anthropological circles on the ground of the method employed.

But, since that method is essentially the one used by Ripley, on whose work Dr. Brigham presumably based his classification, it is interesting to note what Dr. Dixon says about the racial purity of Sweden, to which Brigham allots 100 per cent of Nordic blood. "In Southern Sweden," says Dixon, "and especially in the district of Skåne, and also in the whole of the North, the long and round headed elements in the population are almost evenly balanced. . . ." Again, "We can only guess that the tall, blond, dolichocephalic group, the typical 'Nordic' stratum, is here, as in Northern Germany, a blend primarily between the Mediterranean and the Caspian types." Dr. Dixon's method of arriving at his conclusions, of course, and his conclusions themselves, are not necessarily acceptable. They are merely quoted to show what one student who utilizes the same method, now largely discredited, that Ripley used, has to say about the Nordic stronghold.

To what extent, in fact, is race really defined today? To speak of racial intelligence, or of a more or less desirable race, or of a race as having a culture that is better or worse than that of another race, obviously presupposes knowledge that the group spoken of actually *is* a race, and that a definition of a race can be constructed which will be scientific. Up to now, unfortunately, this has never been accomplished. I do not argue, of course, that there are not certain physical differences between the Negro and the Indian, or the white man and the Australian, or that it is not convenient to classify peoples in some such fashion. But when we contrast all of them with the apes, let us say, they always turn out to be overwhelmingly alike, just as when we contrast the Negro with the European the difference between groups of Europeans becomes insignificant.

Work which is of great significance in this study of race has been going on for some time in the Anatomical Laboratory of Western Reserve Medical College,

where there is a vast store of skeletal material. Dr. T. A. Willis has recently published a comparison of the number of thoracolumbar vertebrae found in Negroes and white men with the number found in the giant anthropoid apes. The modal numbers of the various species range from 16 to 18, man having 17, but when we consider the range in each case, we find that man is amazingly more stable than his lower brothers, 96 per cent of the human cases having 17 of these vertebrae, while the next most stable, the orangs, exhibit only 78 per cent which have the modal number, 16. When the human cases are separated into Negroes and whites, we find that the mode in both cases is overwhelmingly the same, 17, 89 per cent of the male whites having that number, 84 per cent of the male Negroes, 92 per cent of the female whites, and 93 per cent of the female Negroes. Here, as in so many cases, we have a demonstration of the point just noted, that in comparison with the lower forms of the Primates, even the two types of man that are farthest separated, whites and Negroes, are overwhelmingly alike.

Anthropologists who do not utilize the classificatory method employed by Dr. Dixon and Dr. Ripley commonly use the general concept of variability, treat a group of individuals as members of a class which may be described in statistical terms, and compare averages in establishing differences. But that this is not sufficient must be obvious, for two groups may have the same average and still be very different in distribution; again, two averages may vary considerably, and yet there may be a great amount of overlapping. This fact is of main significance in the study of race, for it has been found that no two human groups can be studied without overlapping becoming apparent. Thus, the population of Europe shades gradually from North to South in the matter of skin-color, and this gradual change continues as one works one's way down into Africa. Similarly, there are

Scandinavians who have darker hair than some Italians, as there are Italians who are taller than some Scandinavians. In studying race, what criteria are to be selected? It is said that the Nordic is pre-eminently the dolichocephalic, blond, tall type, yet the people with the longest heads in the world are the Hottentots, while the tallest live in East Africa!

Let us take skin color. It is the first thing we notice, and the most prominent. Professor T. Wingate Todd, also of Western Reserve, has made an exhaustive study of skin color in Negroes and whites, and has reversed an opinion which was long held as a result of Dr. Davenport's study, that there is no overlapping between Negroes and Caucasians with respect to this trait. Skin-color is studied by means of a top with adjustable disks, which are colored in accordance with the elements which go to make up all human pigmentation, red, white, black, and yellow, and which can be so arranged that their proportions blend, when the top is spun, so as to approximate very closely the color of the skin before the student. Dr. Davenport used this top in his study of Negroes, and came to the conclusion that "the untanned skin-color formula of the Caucasian contains from 0 to 7 per cent black, and probably, in brunettes, as much as 10 per cent." However, Dr. Todd showed later that the red disk which had been used was really 59 per cent black, so that Dr. Davenport's own tanned wrist, instead of being but 8 per cent black, was really 37 per cent! Dr. Todd tested the skins of several Italians and Mexicans, and found that the black factor reached well into the Negro range. Thus, we have an illustration of the manner in which overlapping may take place in a human trait, and how, for example, Caucasians living in the South of Europe may be darker than some Negroes.

When two races are crossed, what happens? Does the "superior" dominate over the "inferior," or vice versa? For years it has been maintained that the Negro is

breeding out in this country as a result of crossing with the white, but Dr. Todd's work on skull capacity shows that the average capacity of the brain-cases of a series of mixed Negro-white skulls is within seven cubic centimeters of that of a series of African skulls, while both differ largely from the white average. This would appear to indicate that in this trait, at least, the Negro element is dominant, and will survive in spite of crossing. Again, in a recent study by Dr. Wissler of the distribution of stature in this country, in which the variability of this and other traits is presented, he remarks:

At the outset, we assumed that the less variable the characteristic, the purer the race. If this principle holds, then the Italians and Poles can make the best claim to such distinction. But, if we turn to . . . chest circumference, we meet with quite a different line-up: the Negroes have shifted from the highest to the lowest rating. . . These shifts are rather surprising, for, interpreted according to the accepted principle, it would follow that as to chest circumference the Negroes are the purest race, but in stature the most mixed.

Professor Boas has pointed out that in a consideration of racial groups it is important to determine the family variation as well as the individual variation. In a pure group, one that had been inbred over long centuries, every family would fairly well represent the population as a whole, while in a very heterogeneous population the variation in family strains would be relatively tremendous. He has shown that the Missisauga and other Chippewa Indian tribes have family strains of relatively low variability, whereas among the Bohemians, a more mixed group, and the central Italians, it is very high.

One point which is usually overlooked in the consideration of the various types of *Homo sapiens* is the fact that human beings are the oldest domesticated animals. The significance of the fact is brought out by the study of the lower orders of domestic animals. It has been found that the domesticated types are more variable as to physical form than their wild cousins, and much less stable. This is also char-

acteristic of human beings. Inbreeding will develop a specialised local type which soon disappears when an extraneous element is introduced. This study, which has been carried on chiefly by German anthropologists, has brought out the curious fact that wild forms rarely develop extreme blond or brunette types. We must therefore draw the conclusion that the blond Nordic and the brunette Negro represent the farthest removals from the original form of man.

One might go on to mention other studies which have been made of different characteristics of "races," but enough has been said to indicate that the anthropologists who are working steadily at the problem are far from a solution. It will only come, of course, when infinitely more material than is now available is in, when the mechanism of heredity in man has been uncovered in all its infinite complexities, and when the presuppositions with which an unfortunately large number

of scientists commence their work have been overthrown. On returning to the question of the long-headed Nordic, whose purity and special fitness for the culture of the United States are so freely assumed, and to such practical problems as those of immigration and racial discrimination, we may well ask ourselves how all the current assumptions can be made in the face of this anthropological bewilderment. How, indeed, can we speak so confidently of psychological differences between the Nordic and Mediterranean when even the physical differences between the two have not been established? How can we talk about the superior blondness of the Nordic when the amount of black pigmentation in many whites is known to be greater than that in many Negroes? How can we speak of a "pure" strain when even the most arbitrary classification according to selected traits does not show purity anywhere?

Military Science

THE TRAINING OF THE SOLDIER

By ARLINGTON B. CONWAY

THERE is a saying, attributed to Napoleon, that in war the importance of moral factors is to that of material factors as three is to one. The professors at the *Kriegsschulen*, and even regimental officers, have a good idea of what he meant, which is that an army, though it be directed magnificently, though it have excellent armament provided by the resources of an immensely rich state, though terrain and fortifications favor it, and though it be largely superior in numbers to the opposing forces, will not be victorious unless the will to fight is strong in it. While the late war was in progress, amateur military experts wrote "morale" almost as often as they wrote "enemy hordes." Good morale, in brief, is simply a feeling in the mind of the soldier that, on even terms, he can

trounce his enemy. He may have had the worst of battle after battle, but if he is still able to make excuses for himself, and is willing to have another go, his morale is all right for practical purposes. But once troops admit that the enemy may have, man to man, some advantage over them, that he possesses some aptitude or weapon denied to them, they become unreliable in battle and it will be a long time before they are of any use again.

Morale, obviously, is improved by victory and damaged by defeat. But it is sometimes hard to draw the line between victory and defeat, especially in modern war, and the soldier generally assumes easily that the side which has gained ground has won. Morale is helped if the soldier can be made to believe that he has a better weapon than his enemy. Hence the principal value of tanks, gas, eighteen-inch howitzers, Zeppelins, and so forth. Beside the direct advantage of superiority in