

ANTHROPOLOGY

Negro Ancestor for Man?

Anthropologists cannot say for sure but climate has favored evolutionary darkening of skin and reduction of body size in tropics, with large frames farther north and south.

See Front Cover

By MARJORIE VAN DE WATER

► WAS MAN'S remotest ancestor a Negro?

Some anthropologists think he may have been. Others believe he was more likely white. Another theory is that he was somewhere in between—a sort of *café-au-lait*.

Some even hold that man had no single ancestor, but several who developed in different parts of the world.

One leading anthropologist, Dr. Carleton S. Coon of the University of Pennsylvania, suggests that the variations in men that we consider racial may have originated in earlier stages of evolution. In other words, a Negro may have been black before he was a man.

No one really knows for sure. Unfortunately, our acquaintance with the earliest men and the ape-men who preceded them is confined to fragments of fossilized bone—in one case just a single tooth.

Remarkable detective work on the part of anthropologists has clothed this bone sample with imaginary flesh. They determine from the way the skull sets on its supporting bones and the shape of the pelvic bones whether the owner walked erect like a man or crouched like an ape. They deduce from the pattern of wear of a tooth something about the diet once chewed, and whether the jaw worked in a manner typically human or apelike.

Melanin Is Coloring Pigment

However, not even the most experienced deduction can tell us whether our ape-man ancestor had black skin, white skin or something in between. We do know that climate can, gradually over a period of many generations, change the color of man in either direction.

In a sunny tropical climate, back in the days when man had no clothing or hairy covering to protect his body, the black man or the one with relatively dark coloring had a distinct advantage for survival. The black skin of a Negro is due to the presence of a dark coloring matter, melanin, in the outer layers of the skin. Melanin serves as a filter to screen out the harmful, burning rays of the sun. Black skin is, therefore, a great advantage to the wearer in regions where the sun is nearly overhead and sends down its burning rays through cloudless skies.

Burning is not the only damage that the bright, unclouded sun can do to white skin,

however. Some authorities believe that white skin is more susceptible to the injury that causes cancer than is black skin.

Man is not the only member of the animal kingdom protected by color in the sunny tropics. Hairy animals of the grassland and desert are generally light or tawny, but those that run naked like man in the primitive state are black or dark gray. They include the elephant, rhinoceros, hippopotamus, buffalo and some pigs.

The effect of climate on color is illustrated in the photographs on the cover of this week's *SCIENCE NEWS LETTER*. On the left is a polar bear whose white coat blends in with the Arctic snow and ice. The brown Kodiak bear on the right lives in a region to the south.

Other Forms of Protection

And skin color is not the only protection the Negro has against the tropical hot sun. He has tightly curled, woolly hair. Some anthropologists see no particular advantage in this, but believe that the heredity genes that equip an individual with woolly hair may be linked with others that give him some other advantage for life in the tropics.

Dr. Coon and some other anthropologists look upon the woolly hair itself as advantageous. The tight curls, they point out, serve to trap air, and this "dead air" acts as heat insulation for the head, serving the same purpose as the European's pith helmet.

Black skin, such an advantage for survival under the blazing sun of the tropics, becomes a decided disadvantage in the cloudy, foggy north.

There, where the sun never gets high in the heavens during the long winter months, the atmosphere with its moisture droplets provides filter enough for the human skin. The cold probably induced even the primitive early peoples to put on clothing, thus screening out more of the sun.

Here the great problem is not sunburn, but rickets. Few people die of rickets, but the disease is debilitating and can cause those suffering most to fall behind in the keen competition for food. In addition, rickets can bring deformity of the pelvis in women, causing them difficulty in child-bearing and perhaps death of mother, baby or both.

Men with a light skin or with a skin capable of tanning in summer and fading in winter have a much better chance of survival in the shady, foggy, cloudy northlands, than have those with black skin.

Skin color is not the only change that climate has produced in man. Body size is

also affected, but this time not so much by sunlight as by heat. A recent tabulation of body size of the aboriginal inhabitants of North and South America by Dr. Marshall T. Newman, Smithsonian Institution anthropologist, shows that man tends to increase in size as he lives farther from the tropics, either to the north or to the south.

The reason small body size is an advantage for survival in the tropics' heat is because man loses heat through his skin. The small man has more skin area in proportion to body volume. Heat loss is greatest from a cylindrically shaped object. For this reason, long, slender arms, legs, necks and fingers are an advantage in hot climates provided the air is not too humid.

Where the moisture in the air is high, heat loss through the skin is cut down, but the "tropical build" is still no disadvantage.

The large, bony hands of the North European, a great advantage for heat loss in hot summers, are still no disadvantage in the cold winter weather. This is pointed out by Dr. Coon in "Climatic Change." (See *SNL*, Feb. 20, p. 125.)

When the outside temperature drops below 83 degrees Fahrenheit, the body stops sweating and vasoconstriction shuts off the "hot weather route" of blood returning to the heart from the hands. The chilled venous blood now travels through deep-lying veins that surround the artery. The venous blood is thus warmed by the arterial blood before it gets to the heart.

Arctic Peoples "Tailored"

This means, Dr. Coon explains, that in a land of hot summers and cold winters, a man can afford to have big bony hands; in cold weather "they are simply shut off from the heat system like an empty room."

Dr. Coon also tells about people living in the coldest parts of the world who have bodies "tailored" for cold weather.

The people who live around the Arctic Sea are short, but they are not slender like their tropical cousins; they are thick set, relatively globular. They have thick insulating layers of fat. Extremities such as noses, fingers and toes are reduced to a minimum.

The Mongoloid people, who live in the Arctic cold, have been modified by evolution until they are perfectly designed to withstand cold. They have a flat, fat face with eyes reduced to a thin slit. The narrowness of the eye opening protects them at the same time from the freezing cold and from the glare of sun on ice and snow. A short nose presents a minimum of surface to the cold, yet the air passages to the lungs are just as long and entirely inside. The hair of the beard is sparse and coarse which makes it less likely for moisture to freeze on it.

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