

## PHYSIOLOGY

**Amount of Skin Surface Varies for Racial Groups**

► PEOPLE from "south of the border" have more skin surface area per body weight than their northern neighbors, Dr. Eugene Schreider, Laboratoire d'Anthropologie Physique, Paris, reports in the British scientific journal *Nature* (May 4).

This increasing amount of surface per pound of weight found as one goes from the Northern to the Southern Hemisphere was first thought to be more or less regular, but recent studies among Europeans and Africans have shown there are two independent variations, Dr. Schreider finds.

One gradient is for the white racial group extending from northern Ireland to the Sahara and southern Arabia, and the other is for the black racial group beginning near Africa's Gold Coast and ending in southeast Africa, where it merges with the white gradient.

Negroes perspire more intermittently and for shorter periods than white people. In spite of this they can maintain the same internal temperature when exposed to heat stress, Dr. Schreider reported. Their perspiration is more efficient and physiologically less disturbing, a situation that may be due to Negroes having a higher concentration of sweat glands in their skin.

Another factor favoring the West African Negroes is the length of their limbs. Anthropological data have shown they have very long upper limbs which are particularly efficient as "refrigerating organs."

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## HYDROLOGY

**Flood Crests Forecast By Electronic Computer**

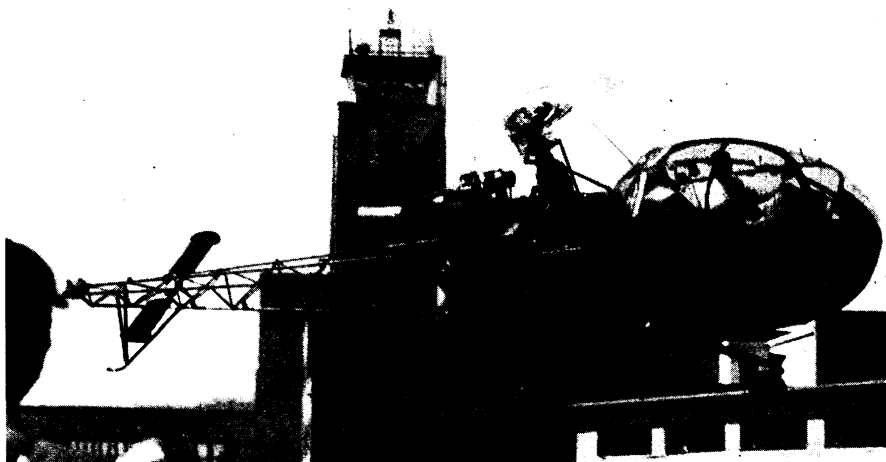
► WHEN and where flood crests will occur and their heights can be calculated using electronic computers, three New York University scientists reported at the American Philosophical Society meeting in Philadelphia.

The method, developed at the University's Institute of Mathematic Sciences under contract with the Army's Corps of Engineers, is based on numerical solution of flow equations. It was tested by calculating river stages and velocities in three actual cases for periods as long as three weeks, using a UNIVAC.

The cases studied were the flood of 1945 in the 375-mile stretch of the Ohio River between Wheeling, W. Va., and Cincinnati, Ohio; the flood of 1947 through the junction of the Ohio and Mississippi Rivers, and that of the Kentucky Reservoir.

In the third case, Dr. J. J. Stoker, associate director of the Institute, and Drs. E. Isaacson and A. Troesch reported, the differences between observed and calculated stages were of the order of inches over a three-week period.

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**ROCKABYE BABY**—The maneuverability of the Alouette II, the French-built helicopter, is demonstrated here by the pilot as he hovers and rocks from side to side. The helicopter is powered by a gas turbine engine and has a cruising speed of 110 miles an hour. Republic Aviation Corporation is the American manufacturer.

## BIOLOGY

**Radiation Yields Protein**

► ATOMIC RADIATION may have started life on earth, three scientists suggest. They report the production of simple organic compounds, including the basic building block of life, an amino acid, when the gamma rays given off by cobalt-60 bombard ammonium carbonate.

This is the first known case in which amino acids have been obtained directly from completely oxidized forms of carbon in the absence of free hydrogen, they state. Drs. Raymond Paschke, Robert W. H. Chang and Donald Young of General Mills Research Laboratories, Minneapolis, are the three scientists reporting their studies in *Science* (May 3).

Most scientists believe life arose from a non-living mixture of carbon compounds. Drs. Paschke, Chang and Young believe gamma radiation from naturally occurring uranium or thorium is a "much more probable" means of forming this mixture than sunlight and lightning.

After exposing about two ounces of ammonium carbonate to a 500 million rep (radiation unit) dose of radiation, they found a very tiny portion of the original sample had been changed to glycine, an amino acid. Another amino acid, alanine, was possibly identified but its presence was not confirmed.

Such a large radiation dose may not be necessary, the three scientists report.

Since ionizing radiation can destroy organic compounds as well as form them, they suggest the amino acids were washed to the dark non-radioactive areas of the

sea. The earth's radiation sources, by the time it had cooled sufficiently for condensed water vapor to form the oceans, were certainly sufficient to cause the reactions.

The necessary dose could have been delivered in a few decades, they report. It is also likely, the scientists point out, that amino acids are being formed by this same process today, but they can no longer accumulate as they did when the world was sterile.

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## FORESTRY

**Forests Fertilized By Airplane**

See Front Cover

► AERIAL application of a complete fertilizer to forest trees on the Rutgers University dairy research farm at Beemerville, N. J., is shown on the cover of this week's SCIENCE NEWS LETTER.

The purpose of the experiment, reports the University, was to improve the growth of 28-year-old red pine trees that were growing slowly because of low fertility soil.

Application of fertilizer by air is "less hazardous and easier than in crop dusting and crop fertilization."

Test results indicate that as plant foods are applied and tree and ground cover growth increases, there will be improvement and conservation of forest soils, and food and cover for wildlife.

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