

Admittedly in the realm of speculation because no observations can be made of satellite so even the closest stars in our own Milky Way galaxy, astronomical opinion as shown by this poll does hold that there must, among the millions upon millions of stars, be some that have acquired planets like the nine in the solar system.

There are literally billions of stars in the great galaxy of stars in which we are located, the Milky Way. This can be seen stretching across the sky on a clear night with only the closest and most brilliant of the stars visible to our eyes.

There are millions of galaxies like the Milky Way. And in our galaxy alone there must be hundreds of thousands of stars

much like our sun. Such vastness of the universe and its heavenly bodies has allowed the astronomers to express their belief in other worlds than ours.

In discussing planets outside the solar system, one astronomer observed that the probability of life comparable to man is extremely small for a given planet, even granted physical conditions similar to the earth. He based his favorable answer more on philosophical grounds than astronomical.

What is comparable to man—rats, apes, birds?—asked another astronomer who voted “yes” on extra-solar system inhabitants.

Science News Letter, September 15, 1956

#### ENDOCRINOLOGY

## Pure Skin Color Hormones

► INTERMEDIN, the pigmentation hormone that gives color to the skin, has been isolated in pure form and its chemical structure determined by University of California scientists.

The research on what has appeared a minor hormone has broad implications for progress in treatment of metabolic diseases.

The work marks the first time a specific biological function apparently can be pinned down to a specific structural segment of a large complex pituitary hormone.

It shows hormones like ACTH are probably several hormones rolled into one. Possibly purification or synthesis of the fragments may bring better, more specific treatment.

The scientists, after purifying intermedin, which is known as MSH or melanocyte-stimulating hormone, showed it is composed of 18 amino acids in a simple peptide chain.

The striking thing is that a segment of seven of these amino acids are arranged in the same sequence as a similar segment of ACTH. The sequence is methionine, glutamic acid, histidine, phenylalanine, arginine, tryptophane, glycine.

ACTH has been known to contain MSH activity for many years and, until recently, was believed its only source. Recently, however, extracts of MSH were obtained and this secretion was identified as a separate hormone produced by the intermediate lobe of the pituitary.

This separate hormone could darken the skin of frogs, fish and other animals just as ACTH could. The University of California scientists say a segment of seven amino acids in both hormones is undoubtedly responsible for pigmentation. In ACTH this sequence acquires adrenal-stimulating activity because of the different order of amino acids on each side.

The scientists believe the wide variety of biological effects of the large pituitary hormone molecules eventually will be pinned down to structural segments of the molecules.

For example, ACTH causes fatty liver and an increase of red blood cells in addition to stimulating the adrenals and caus-

ing pigmentation. Small segments may be responsible not only for pigmentation but for other activities as well.

The research is reported in the *Journal of the American Chemical Society* (Sept. 4). The scientists conducting the research are Drs. Irving I. Geschwind, C. H. Li and Livio Barnafi, all of the Hormone Research Laboratory at Berkeley. Dr. Li and other colleagues previously have isolated five pituitary hormones, including ACTH, and growth, lactogenic, interstitial-cell-stimulating and follicle-stimulating.

Science News Letter, September 15, 1956

#### TECHNOLOGY

## Vulcan Gun Developed For Use Against Jets

See Front Cover

► THE VULCAN, a fast-firing 20 millimeter gun, was designed to keep up with the ever-increasing speeds of jet aircraft.

It is also known as the “Gatling gun” because it operates in a manner similar to that of the original “Gatling gun” invented in 1862.

This design was chosen by General Electric engineers and Army Ordnance officers because its rotating six-barreled cluster offered the most desirable characteristics for producing the increased rate of fire.

Extensive testing of the new armament system has been underway for over two years at the Air Force Armament Center. It has included ground firing, air-to-air firing and all-weather operation in a climatic hanger.

Shown on the cover of this week's SCIENCE NEWS LETTER is the Vulcan undergoing one of the tests made to prove its operability at temperatures as low as 70 degrees below zero Fahrenheit.

The weapon is 72 inches long and weighs approximately 300 pounds. It is named after the ancient Roman god of fire. The gun is externally powered by either electricity or hydraulic fluid.

Science News Letter, September 15, 1956

## ● RADIO

Saturday, Sept. 22, 1956, 1:45-2:00 p.m., EDT  
“Adventures in Science” with Watson Davis, director of Science Service, over the CBS Radio Network. Check your local CBS station.

Dr. Harry C. Kelly, assistant director for scientific personnel and education, National Science Foundation, Washington, D. C., will discuss “Scientists for the Future.”

“Adventures in Science” will not be heard again until December on account of the football season. Listen in then. Check your program listings.

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