

MEDICINE

Too Little Protein Does Not Cause Dropsy

► **FAMINE SUFFERERS** get dropsy but, contrary to general scientific belief, it is not because they have had too little meat and other protein foods.

Evidence for this new view, which upsets the almost universally held theory developed after World War I, was obtained from 34 men, volunteers from civilian public service, who lived on a European type of famine diet for six months. The new findings are reported by Drs. Ancel Keys, Henry Longstreet Taylor, Olaf Mickelsen and Austin Henschel, of the University of Minnesota, in the journal, *Science* (May 31).

In spite of the low amount of protein furnished by their diet of whole cereals, potatoes, turnips and so on, the concentration of protein in the blood plasma of the volunteers fell only slightly and the ratio between two kinds of protein, albumin and globulin, in their plasma remained within normal limits.

The men lost a quarter of their body weight and they did develop dropsy. Their clinical state closely resembled that seen in Europe in 1945. They showed no signs of kidney or heart failure. Reports from studies of European famine sufferers, Dr. Keys and associates say, bear out their finding that famine edema or dropsy is not simply a result of too little protein in the blood or of kidney or heart failure.

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PSYCHIATRY

Man-Created Moon and The Atomic Bomb

► **THE ASTRONOMICAL** possibility of creating and putting into operation a second moon of the earth was suggested to the American Psychiatric Association by Dr. Harlow Shapley, director of Harvard College Observatory.

Given enough money and time, Dr. Shapley said, man could fashion a tiny object, radio equipped and jet controlled, which could be sent the proper number of thousand miles aloft and then caused to travel gravitationally at the same speed as the earth's surface beneath so that it would seem to stand still at one spot over the earth's equator.

This stunt would have no real useful purpose, but it would be no more crazy to do this than many other things that

are being done, Dr. Shapley told the psychiatrists.

Among the "miscellaneous lunacies of the higher terrestrial animals" cited by Dr. Shapley were the making of atomic bombs as instruments of foreign policy and the holding of expensive atomic bomb demonstrations while millions of Europeans and Asiatics starve.

Any connection between human lunacy and the moon is wholly superstition, Dr. Shapley reassured the experts on mental troubles, except for "possible subjective effects upon susceptible patients who, hearing that full moonlight promotes silliness, become silly."

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NUTRITION

High Protein Diet Prevents Dog Hysteria

► **TO PREVENT** your dog from having running fits, or canine hysteria, be sure he has a sufficient supply of high quality protein.

This is the advice of Dr. Agnes Fay Morgan, noted University of California nutritionist, who has studied running fits in dogs for several years.

Dr. Morgan says that laboratory experiments show that running fits can be prevented by dietary means. Some experts have contended that canine hysteria is a matter of heredity, while others have failed to prevent the ailment by the administration of high concentrations of vitamin B content.

Dr. Morgan and Mary Groody, researcher, fed dogs on a diet consisting of nothing but a commercial dog food containing wheat flour, wheat germ, bone meal and salt, meat meal, soy bean, and special vitamin supplements. This diet produced fits in nearly all dogs tested after periods ranging up to 19 days. The dogs also lost weight and were nervous.

The running fits ceased after a few days during which fresh ground beef lungs, meat scraps, and fish were fed to the animals.

Dr. Morgan and Mrs. Groody concluded that this indicated the protein content of the dog food was not high enough in quantity or quality.

The commercial producers added fresh ground beef lungs, meat scraps and ground fresh fish to their dog food; this formula was tested by Dr. Morgan and Mrs. Groody, with the result that dogs did not contract running fits, even after more than two months feeding.

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IN SCIEN

ASTROPHYSICS

Put More Windows on the South Side of the House

► **MANY HOME** owners would be interested to find out what the sun can do by way of competing with coal.

A modern house with 100 square feet of south-facing window area can soak up in one winter season enough heat to save a ton of high-grade anthracite, Irving F. Hand of the U. S. Weather Bureau told his fellow-scientists at the meeting of the American Meteorological Society. He made his calculations at the Blue Hill Observatory of Harvard University, where he is stationed. Houses farther south can make the coal-pile last a little longer with solar assistance, he added.

It is better to put windows on the south face of your house than on the east, Mr. Hand state: south windows are much more efficient sun-traps, and east windows are difficult to shade in summer.

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AERONAUTICS

New Army Jet Fighter Has Greater Speed and Range

► **THE NEWEST ARMY** jet fighting plane, designed and constructed by Republic Aviation Corporation, has been thoroughly tested and a hundred or more will be built during the coming year. It is about the size of the Lockheed P-80, but somewhat heavier, and is claimed to have all the better characteristics of a great fighter plane.

Information concerning the new plane was revealed at Wright Field, Ohio, to a group of aviators and scientists. It has a speed of more than 590 miles an hour, a service range of 1,000 miles, and a service ceiling of over 40,000 feet.

The XP-84 Thunderjet, as the plane will be called, is powered with a General Electric jet engine. Its air-scoop is located in the nose of the plane rather than on the sides, the customary place. It has an electrically operated removable canopy over the pilot which can be quickly opened at all air speeds to permit an emergency exit.

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OUR FIELDS

MEDICINE

Vitamin D May Help Fight Tuberculosis

► VITAMIN D, the anti-rickets vitamin, may lead to a new chemical attack on tuberculosis and other germ diseases, it appears from studies reported by Dr. Walter Raab, of Glenn Dale, Md., Sanatorium, in the journal, *Science* (May 31).

Injection of a concentrate of vitamins A and D into the membrane surrounding the lungs in tuberculous empyema resulted in disappearance of the germs, he reports.

Large doses of vitamin D injected into guinea pigs suppressed tuberculosis in these animals.

The anti-germ action of vitamin D is not related to its anti-rickets action, Dr. Raab found. Ergosterol, parent chemical of the vitamin, which has no rickets-preventing power, also stopped the growth, in test tube experiments, of tuberculosis germs and another organism, staphylococcus aureus. So did cholesterol, a related chemical. These substances are related through phenanthrene, which includes in its chemical relatives sex hormones, bile salts, certain heart disease remedies and morphine.

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RADIO

New York-Moscow Radio Messages Relayed

► THE WORLD'S worst magnetic storm area, which lies on the direct air route from New York to Moscow, is by-passed by radio messages using a new automatic radio relay station in North Africa opposite Gibraltar.

The new relay, now successfully tested, is in the International Zone at Tangier. A radio message between the two cities will travel 1,300 miles farther by way of Africa than over the direct route, but the difference in time required is negligible, and it will pass far south of the magnetic storm region. The station will provide uninterrupted radio communication between the United States and the Soviet Union.

The direct airwave route from New York to Moscow passes west of Newfoundland, just south of Greenland, over

the southern tip of Iceland, and across central Norway and Sweden. It passes so close to the North Auroral Zone, or magnetic storm area, that shortwave radio signals fail to get through when sun-generated storms occur.

The African relay station was constructed by the Radio Corporation of America. Henry E. Hallborg of the company, an authority on geomagnetism, explains the need of this alternate route.

"One of the worst trouble areas," he says, "is the North Auroral Zone, a ring 60 miles above the earth's surface around the North Magnetic Pole. It is approximately 700 miles wide and is caused by radiation from the sun attracted to the pole. During normal conditions of the ionosphere, radio signals pass through it, but when sun spots appear, the width of the ring may spread to as much as 2,800 miles in diameter. At such times, the ring becomes turbulent and overlaps the direct path between New York and Moscow."

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AVIATION

Airport Traffic Control System Demonstrated

► THE MOST effective military airport traffic control yet developed was demonstrated to the national press conference, at Clinton County Army Airfield, Wilmington, Ohio.

Nine giant planes landed, one closely following the other, each directed by radio orders from a control station.

It is a radar-radio system, the CPN-18 (XW-1), designed to survey by radar an area 40 miles in radius, identifying each plane and feeding it into a landing approach system such as GCA (Ground Control Approach) or SCS-51 (Localizer Glide Path).

Basically the CPN-18 unit operates on the war-developed radar principle. The unit's transmitting station sends out a rotating search beam of radar pulses which scans the surrounding area. The beam picks up every plane in the area and makes them visible to operators on radar scopes. The operators then direct the approaching planes for position and landing by radio. With this system, the station has identified and channeled aircraft into the approach at the rate of 40 planes per hour, even under conditions of low ceiling and poor visibility.

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ARCHAEOLOGY

Ancient Cities Died When Rivers Changed Course

► ANCIENT CITIES along the Tigris and Euphrates rivers, or canals connected with them, became doomed when these rivers changed their courses, withdrawing the cities' lifeblood. No harder blow could have been dealt to a city than to be deserted by the river upon which it depended for trade and agriculture.

The ruins of many cities in this region today are inaccessible. Far too many of them, after flourishing for several centuries, were completely abandoned. Changes in the rivers' course are largely responsible, Dorothy Mackay states in *Antiquity*, British quarterly review of archaeology.

Man's original settlements, when he gave up nomadic life, were undoubtedly built on the banks of rivers and streams. He not only needed water to slake his thirst, but had to have it in quantity to water his fields.

Examination of many sites far from the nearest river suggests they were once on river banks, Miss Mackay found. Sometimes a band of silt deposited by a river or remains of a canal bank can be found, showing that water once flowed by that region. Boats sketched on a seal or bit of pottery show the ancient residents' familiarity with transportation by water. River beds themselves can often be traced because soil beneath where a river once flowed differs in color, texture and composition from the surrounding alluvial soil.

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PHOTOGRAPHY

Shutterless Camera For Aerial Mapping

► A CAMERA for use in aerial mapping, designed to do away with the necessity for subsequent piecing of photographs together into a mosaic, is the invention on which Russell R. Vought of Beverly Hills, Calif., was awarded patent 2,401,530. Instead of exposing whole areas of film at intervals this camera exposes a very narrow strip through a slit. The long roll of film is kept moving slowly past this slit, at speeds varying with the speed of the plane. Thus a continuous record is made of the terrain over which the plane is flying.

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