

scourge of the white troops, was kept at a minimum, with the number of deaths "infinitely lower than expected," by quinine. Each soldier was given 3 tablets a day and took them, example of the officers being the chief coercive measure.

Dysentery, the "blood flux" which generals used to fear more than the enemy, did not take a single life and affected only 453 men, whereas at least 80,000 to 100,000 might have been expected. The preventive measures against

this disease were three-fold: 1. Every effort was made to give the officers and men pure drinking water; 2. The men were encouraged to wash or disinfect their hands with lysol, especially before meals, and cooks and others working in the kitchen were required to use this disinfectant; 3. The "grandmotherly precaution" of wearing a flannel abdominal belt was enforced on every soldier, to prevent abdominal chilling which might predispose to dysentery.

Science News Letter, June 12, 1937

PUBLIC HEALTH

Rabies Found to Occur At Any Season of Year

THE CRY of "Mad Dog!" will soon be heard over the land. Not that dogs go mad, or suffer from rabies, any oftener during the dog days of midsummer than at any other season. But from April to September dog bites are more frequent because at this season more dogs are running loose.

Rabies gets its other name of hydrophobia from the fact that at the height of the disease swallowing is so difficult the afflicted person or dog will refuse even water. The choking, huskiness and shortness of breath are due to spasms of the muscles of swallowing and breathing. In the later stages, the spasms and convulsions may affect the whole body. Death occurs from paralysis of the breathing muscles.

This truly horrible disease is caused by a virus, one of those ultramicroscopic substances which latest scientific discoveries show may be chemicals rather than living organisms. When a rabid dog or other animal bites, he passes the virus to his victim through the saliva.

MEDICINE

Attack on Cancer Under Way; Now Trying to Make Vaccine

Proteins Combined With Coal Tar Derivatives Tried In Efforts to Produce Antibodies in Animals

EFFORTS to fight cancer by vaccination are under way at the Banting Institute, Toronto, Drs. W. R. Franks and H. J. Creech of the Institute reported at the meeting of the Royal Society of Canada.

The work is still in the experimental stage. Protection of humans has not been tried and will not be until results of animal tests now under way show whether or not the material made in the Banting laboratories is a cancer vaccine.

"We have no evidence that we have succeeded in producing a vaccine to protect against cancer," Dr. Franks stated in reply to inquiry by Science Service.

Used on Guinea Pigs

Various proteins, the class of chemicals to which egg white belongs, have been combined with cancer-producing chemicals such as certain anthracene or coal tar derivatives, Drs. Franks and Creech reported at the meeting. This material was injected into rabbits, guinea pigs and rats. After the injections, the blood of these animals contained substances called antibodies which united with cancer-producing chemicals and it is hoped will check their power to cause cancer.

"We do not yet know," Dr. Franks told Science Service, "whether the union between the antibody produced in animals and the cancer-producing chemicals checks the power of the latter to cause cancer."

The next step, now under way, is to determine this by injecting the material

into animals and then observing whether they are protected against development of cancer experimentally produced by various known methods.

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LIVING ON A HAT

The sprightly cluster of silver-green leaves with which this young lady's hat is trimmed is a real living plant. It is one of the numerous kinds of air plants (bromeliads, to botanists) that grow on the limbs of trees along the Gulf Coast and in peninsular Florida. They are first cousins to Spanish moss and second cousins to pineapples. All they need is a little water occasionally in the tiny cup-like cavities at the leaf-bases, mineral nutrients that come in stray dust, and plenty of free air. And they'd just as lief ride on a pretty girl's hat as roost on a tree—perhaps rather, who knows?

Pasteur treatment is almost 100 per cent. effective in preventing rabies. It can be given at any private or state laboratory or by any physician and should be started as soon as possible after the bite. The disease begins usually within 2 or 3 weeks after the bite.

A dog or other animal suspected of having rabies should not immediately

be destroyed, even if he has bitten someone. He should be kept penned up for at least ten days and watched to determine whether or not he has the disease. The diagnosis is confirmed by microscopic examination of the brain, but this is difficult to do if the dog has been shot and the brain severely injured.

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ASTRONOMY

It's 1500 Degrees Cooler in Sun's "Air" Than On Its Surface

Intensity of Dark Bands in Absorption Spectrum Gives Clue to Major Temperature Differences

AN UNEXPECTEDLY large temperature drop of 1500 degrees Centigrade between the surface of the sun and its overlying atmosphere has been found by Harvard astronomers to add to the mysteries of that complex body.

Perfection of a comparatively new technique of measuring the heat of the sun's gaseous envelope, one that employs delicate spectrum analysis, made possible the discovery. With it, the astronomers have calculated the temperature of the sun's atmosphere to be about 4500 degrees Centigrade.

Previous measurements of the heat at the sun's surface, the starting point of sunlight, have given scientists a figure of 6000 degrees Centigrade, which with the new figure for the temperature of the envelope indicates a falling off of 1500 degrees.

A small temperature drop had been expected but Harvard astronomers were entirely unprepared for the large decrease in heat between the sun surface and its outer atmosphere as shown in the new measurements.

The research was conducted by Prof. Donald H. Menzel, Leo Goldberg, Bemis fellow of the Harvard observatory, and James G. Baker, a graduate student in astronomy.

In the project the astronomers used the black lines found across the ordinary solar spectrum. These lines are formed as the sun's light passes through the solar gas envelope with each atom in this atmosphere absorbing its own characteristic colors from the sunlight. The result consists of periodic dark shadows across the familiar rainbow band.

Inasmuch as the intensities of these shadows or lines depend to a large de-

gree on the relative heat of the light source, they can be used as a "thermometer" or guide to the temperature of the source.

This relatively new type of research was begun at Harvard several years ago when Mr. Goldberg undertook calculations of the theoretical intensities of related lines in the spectra of various elements. Dr. Menzel extended this quantitative theory of line formation and more recently applied the research as a key to solar temperatures.

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GEOGRAPHY

Scientists Will Be Human Drift Bottles

FOUR Russian scientists sitting on the Polar ice floe in their tight little hut to keep them warm, will still be sitting there next spring if all goes well. But also they will not be there. That is, they will doubtless be in the same hut, and the hut on the same ice, but the ice will have moved.

In this, "Little Russia" at the North Pole is unlike "Little America" of a few years ago on the edge of the Antarctica. Admiral Byrd's camp, being on solid land, stayed put; the Soviet scientists' camp, being on floe ice, will drift. And in drifting it will have a chance to find an answer to one of the important and obscure questions of oceanography; What sea currents are there in polar waters, whither and how fast do they flow?

No one has any idea of the answer now. Even among leaders of the expedition agreement is lacking. Academician

O. J. Schmidt, leader of all Soviet scientific activities in the Arctic, believes the floe will move toward America. Peter Shirsov, oceanographer, who is staying in the tent at the Pole, thinks it more likely that the movement will be in a circumpolar drift.

The Arctic over-winterers will have a chance to know part of the answer while they are still up there. They have accurate astronomical instruments for taking position shots at sun and stars, and constant radio time-signals, so they will be able to check their position within a few hundred yards at any time. The four men will be like drift bottles in the sea, except that they will know whither they are drifting.

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METEOROLOGY

American Meteorologists To Spend Year in Arctic

THE RUSSIAN scientists who have "colonized" the North Pole are going to have American neighbors. An expedition led by Clifford J. McGregor will spend the coming year at Fort Conger, on the coast of Grant Land, directly opposite North Greenland, making an intensive study of polar weather.

The expedition is privately financed and organized, and will not be participated in officially by the U. S. Weather Bureau. However, the Weather Bureau has loaned a full equipment of scientific instruments: thermometers, barometers, wind-measuring devices, balloons and observing instruments for high-altitude work, and meteorographs to be carried on the expedition's aircraft. Daily data will be transmitted to the Weather Bureau headquarters at Washington, D. C.

The radio equipment carried by the expedition will make conversation with the Soviet polar "colony" easy, if the two parties want to talk to each other.

The base to be occupied by the scientists, Fort Conger, is the same one used by Gen. A. W. Greely in the 1880's, when 80 degrees north latitude was still a world record. Fort Conger lies in 82 degrees north latitude, 66 degrees west longitude. Grant Land constitutes the northernmost section of the large land mass known as Ellesmere Island.

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Clothes moths can live five years without food.

Aztec Indians of Mexico called "measuring worms" by similar name in their own language.