

## Observe Moon Eclipse in Arctic

The famous Royal Canadian Mounted Police will join with representatives of the Hudson's Bay Company in Canada, Catholic missionaries to the Eskimos, fur trappers, and representatives of the U. S. Weather Bureau and Signal Corps in Alaska, to make scientific observations of the total eclipse of the moon on June 15, according to Dr. Willard J. Fisher, of the Harvard College Observatory. These groups will make particular note of the weather conditions in Canada in the early morning hours of the 15th.

Lunar eclipses occur when the moon gets within the shadow cast by the earth. As the moon is illuminated only by the sun, it appears darker under such conditions than at time of full moon. It would disappear entirely were it not for the earth's atmosphere.

On a clear evening, as the sun sets, we see the sun for a little while after it has actually gone below the horizon, because the atmosphere bends the light rays around the horizon. A similar effect is observed when a stick, partly immersed in water, looks bent. In the same manner, the earth's atmosphere bends some of the light around it and into its shadow, giving the eclipsed moon some illumination. A sunset appears red because the thick layer of air absorbs the blue rays and permits only the reddish rays to pass. The light that gets through to the earth's shadow to illuminate the eclipsed moon has to pass through twice as much air as does the light from an ordinary sunset, with the result that the eclipsed moon shines with a copper-red glow.

As clouds in the part of the earth's atmosphere through which the light passes absorb a certain amount of it, Dr. Fisher has called in the assistance of the Canadian Mounted Police, the missionaries, and the other groups to observe weather conditions along a line from Great Slave Lake, in the Canadian Northwest Territories, across Baker Lake, which drains into Chesterfield Inlet, on the west coast of Hudson Bay, and down to Nova Scotia. It is along this line that the light which is bent into the earth's shadow will just graze the earth. Observations of the state of the atmosphere, whether clear or cloudy, at 3.24 a. m. Eastern standard time, when the moon is most completely immersed within the

earth's shadow, may be checked with observations made elsewhere of the eclipse itself, for as the moon will just be setting at the time, and the sun rising in the east, the eclipsed moon will hardly be visible to the Canadian observers.

One peculiar feature of this eclipse, which makes such weather observations especially important, is that it is just barely a total eclipse. The shadow cast by the earth has two parts, the penumbra, and the umbra. The penumbra is the outer part of the shadow, and a person stationed in it would see the sun partly covered by the dark circle of the earth. If one were within the umbra, then the sun would be entirely obscured, and the only light that reached such an imaginary observer would be that bent by the earth's air layer.

When a total eclipse of the moon occurs, the moon first enters the outer shadow, where its brightness is only slightly diminished. And then, as it finally gets into the center shadow, it becomes much darker. At the eclipse in June, the moon just barely gets within the umbra, and the light that gets to the edge of the moon nearest the outside shadow, just grazes the earth along the line crossing Canada. As a result, cloudy weather in this region would probably have a great effect on the brightness of the eclipsed moon, but as it is a sparsely settled territory, Dr. Fisher has requested volunteer weather observations there in the early morning hours. Any explorers or campers in that part of Canada are asked to send him their weather records at the time, about 3.30 a. m., Eastern standard time, on the morning of June 15, to the Harvard Observatory at Cambridge, Mass.

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### PSYCHOLOGY

#### Snake Fear Not Inborn

That the fear of snakes is not inborn has been demonstrated in the laboratory of the Minnesota Academy of Sciences' Museum where kindergarten children show no shrinking from snakes until their elders have taught them to be afraid. "Unfortunately the snake was chosen as the symbol for evil and consequently we shudder at it and it seems repulsive to us": thus believes Mrs. G. O. Wiley, in charge of the reptile division, who has done much experimentation with these cold-blooded creatures.

Through ignorance of the poisonous snakes, many of the best friends of the farmers are killed yearly, it is pointed out by Mrs. Wiley. One snake has been known to eat 150 field mice in a season, and one field mouse can kill ten fair-sized trees by girdling. So if people could learn to look on the harmless snakes as allies, much damage to crops could be averted. A bull snake in the laboratory has killed as many as three half-grown rats at one time by constricting them, Mrs. Wiley reports. One hungry snake will eat a whole family of rabbits or eight field mice at one meal, she says.

After three years' research, Mrs. Wiley has found that a snake will shed its fangs as often as every 20 days on the average. Nature has given it this fang to kill its prey and provides as well for keeping it sharp. The skin is shed at different frequencies depending upon the species. Rattles on rattlesnakes do not tell the age but the number of sheddings, which sometimes occur twice a year. Contrary to most notions, a reptile's tongue is harmless; it just hears, tastes and feels with it, and, of these senses, hearing is perhaps best developed.

Of 1,800 species of snakes, there are only four poisonous kinds we need beware of in America—the rattlesnake, copperhead, water-moccasin and coral snake. Snakes do not use their venom, meant to kill prey and thus procure food, on man unless attacked or menaced in some way. They can become very docile if treated well, Mrs. Wiley states.

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### ICHTHYOLOGY

#### Food for Trout

"Feeding the fishes" is not such a simple matter. The dietetic requirements of a trout suitable for the dinner table and to lure the sportsman are decidedly specialized. Experiments carried on by the U. S. Bureau of Fisheries show that beef liver, beef heart, and sheep liver will do nicely for spring planting with steelhead, rainbow and brook trout but when trout are to be reared to a larger size beef liver is what will produce the biggest and best trout.

Something new on the menu may result from experiments with three new fish foods—soy bean oil meal, a dried shrimp product, and a freshwater mussel meal. In the future the fresh meat diet may be expanded to include these foods as substitutes for a part of the meat.

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