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PHYSIOLOGY

Weather Affects Health

EVERY TIME the weather changes, you change too.

At least your body metabolism does, Dr. Rene Dubos of the Rockefeller Institute reported to the National Science Foundation.

Speaking on the topic of "Environment and Disease," the investigator pointed out that weather is one of numerous environmental changes that affect the human body.

For instance, it is a well-established fact that a European wind known as the foehn, which sweeps across Switzerland, southern France and Germany, is closely followed by an increase in incidence of diseases and even auto accidents in those countries.

Such an increase in disease, which includes heart diseases as well as all others, can always be expected to follow any weather change, Dr. Dubos said.

Even the seasons are responsible for many ups and downs in diseases. The number of polio cases is always highest during the summer months. This is always followed by a decline in winter. Dr. Dubos interpreted this as meaning that during the summer we are different animals, metabolically, than in the winter.

Another environmental factor that affects diseases is the amount of crowding humans must endure. True infection spreads by direct contact under crowded conditions, but these conditions can also change the response of the individual to the disease agent as well as can other emotional stimuli, he said.

Striking out at air pollution, the scientist noted that there is a large variety of lichens

growing in the rock formations along the Hudson River Valley. However, the identical rock formations will not support the same lichens in Central Park. Air pollution is one of the largest problems of industrialized society, he stressed.

He then related his experience with a group of mice which were kept in a "very clean," although not germ-free, environment. These he compared with mice of the same breed living in a standard environment. Significant differences included complete survival of all "clean" animals while some standard mice died. The clean mice gained weight faster. When all of the mice were fed a deficient diet, the clean animals continued to gain weight, but at a slower rate. The standard mice lost weight.

However, the clean animals were much more susceptible to bacterial infections. Here he added a word of caution for humans.

"We are manipulating our environment so fast in our technological civilization that we should study and be aware of these changes," he emphasized. He warned that we may become too sanitary, resulting in a weakening of our natural defenses.

Americans keep their children clean, so that they do not get diseases. When they are adults and do finally contract a disease, it hits much more seriously, he said. Perhaps medical science will have to grapple in the not too distant future with a choice: which diseases should people be protected from and which diseases should they be exposed to at an early age.

Science News Letter, November 14, 1959

FORESTRY

Fire Lab Dedicated

THE FIRST national forest fire behavior laboratory, at Macon, Ga., is ready to set fires and let them burn under controlled, scientific conditions.

The U. S. Forest Service is supplying the equipment and staff for the laboratory and will also operate it, Dr. Arthur A. Brown, director of the forest fire research division, Washington, D. C., told SCIENCE SERVICE. The state of Georgia allocated \$375,000 to pay for the building. All that is missing, Dr. Brown said, is some of the key scientists, yet to be named, to head operations.

With the new laboratory, equipped to make accurate measurements of the effects on forest fires of moisture, fuel and winds, scientists hope to learn several things. Among the big forest fire "unknowns" are the effects of upper air conditions (10,000 feet and higher) on ground fires. There is very good evidence of an important relationship, Dr. Brown said. Knowledge of these air conditions may help predict the course of large forest fires.

The scientists also expect to get more information on what reactions to expect from burning southern forest fuels. In the south-

ern states there is often a place for deliberate fires, Dr. Brown explained. Fires are legitimately set to reduce accumulated fuel, prepare seed beds or to control brown spot disease of trees, for example. However, the factors influencing the burning, such as soil and weather conditions, are largely unknown.

For example, it may rain fairly steadily one day, thoroughly wetting the trees and plant growth, yet the next day a forest fire may burn these same forest fuels.

Generally, the scientists at the new laboratory hope to gain more complete understanding of why forest fires behave as they do. With quantitative information, more effective prevention and control methods will be possible, Dr. Brown said. Instead of learning from bitter experience, the scientists will be able to learn from controlled experiments.

The Forest Service hopes eventually to have three fire laboratories in operation. One other is already under construction with Federal funds in Missoula, Mont. A third, in California, is in the planning stage, Dr. Brown said.

Science News Letter, November 14, 1959