

PLANT PATHOLOGY

**White Pine Blister Rust
Near California Border**

WHITE pine blister rust, most serious disease of the highly valuable white pine group, is now only about twenty miles from the northern boundary of California, the only remaining uninfected large area of this timber type, the U. S. Forest Service reports.

The disease, which is caused by a fungus, came from Europe. After ravaging the remaining white pine stands of New England and other northeastern states, it made its way to the Pacific Coast lumber region by way of Canada. Efforts of the Forest Service, especially since the inauguration of the C.C.C., have held it somewhat in check, but have not availed to stop its spread entirely.

The fungus spends part of its life on the leaves of currants and gooseberries, and only the total destruction of all bushes, both cultivated and tame, in the neighborhood of the trees will really stop it. Naturally, the extermination of all such bushes in the rugged Northwestern timber country presents an appalling task.

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BIOLOGY

**Life in Cold Storage
Found in Frozen Earth**

HOW long can life survive in permanent cold storage?

This question, raised some time ago by reports of insects discovered in the perennially frozen soil of northern Siberia, is given new impetus through correspondence recently received by Dr. D. Borodin, a Washington, D. C., scientist from friends in Moscow.

The finds, which were made by Prof. P. N. Kapterov of the Far East Research Institute for the Study of Permanently Frozen Areas, did not consist of insects, as at first reported. Instead, the frozen soil contained fungi, mosses, the lower forms of plant life known as algae, and the eggs of a minute relative of crabs and crayfishes known as *Daphnia*. Although not an insect, *Daphnia* is known by the common name of "water flea." Probably this accounts for the first reports that Prof. Kapterov had found insects in the frozen soil.

The Russian investigator took his samples of frozen earth at depths of ten feet and more, well below the level at which freezing is supposed to be per-

manent. The samples were carried to the laboratory sealed in sterilized jars. There they were thawed out and given a chance to develop what life might be in them.

The algae were the first things to begin growing, and after them the other plants. The eggs hatched out into perfectly normal *Daphnias*, which proceeded to produce new generations after their kind. Several hundred specimens were reared.

If these lowly living things really were solidly frozen into the soil, they were in a state of suspended animation from 1,000 to 3,000 years, Prof. Kapterov estimates. This would make them rivals of California's famous Big Trees, which have been living and growing during all that time.

However, there is a chance that there may have been partial thaws, during which these creatures could have seeped down or grown down to the level at which they were found. Or the frozen earth may have cracked, permitting invasion by that route. Scientists, suspending judgment, are awaiting the results of further investigations now in progress.

If thaws did occur in this vast icehouse of the North at any time during the past 10,000 years or so, they must have been of very short duration, for the flesh of Ice Age mammoth carcasses found in this part of Siberia is in good condition and edible, and the leaves in their stomachs, representing the great beasts' last feeding, are well preserved and easy for a botanist to identify.

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PUBLIC HEALTH

**Employment Accidents Not
Increased By Recovery**

CONTRARY to all expectation, increased employment during 1935 did not increase the death rate from occupational accidents, statisticians of the Metropolitan Life Insurance Company report. Figures for 1935, just now available, show a lower occupational death-rate in 1935 than in 1934.

Particularly encouraging is the decline in mortality from transportation accidents of all kinds. A decline of over 11 per cent in occupational automobile accidents, exclusive of collisions between automobiles and railroad trains or engines and collisions between street cars and automobiles, is reported.

Fatality rates for falls, burns, injuries by machines, drownings, and mine and quarry accidents increased.

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IN SCIENCE

PUBLIC HEALTH

**One Out of Five Will Die
Of Some Heart Disease**

ONE out of every five white persons born will eventually die of heart disease, under present conditions of mortality, a survey of deaths during a twenty-year period just completed by the Metropolitan Life Insurance Company shows.

Heart disease is the chief cause of death at every age period after 45. During the period surveyed, 1911-1930, diseases of the heart, blood vessels and kidneys were responsible for more than one-fourth of the deaths from all causes.

A great many premature deaths from chronic diseases of heart, arteries and kidneys could be prevented by preventing childhood infections, syphilis, rheumatic fever and other infections of early life since these infections are often the initial cause of the chronic diseases that develop later and go on to a fatal end.

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ZOOLOGY

**Sleeping Bat Survives
Near-Zero Temperature**

ENTHUSIASTS for sleeping outdoors, even in cold weather, are often denoted as "batty" by their critical friends. That they have a good right to turn the taunt into a boast has been shown by a study made of a winter-sleeping bat by Dr. Alexander Wetmore, assistant secretary of the Smithsonian Institution (*The Journal of Mammalogy*, May).

Dr. Wetmore found a hibernating bat in the folds of an awning over one of his office windows, early last winter. He put it into a blanket-fold in a small ventilated box, and left it on the window-ledge all winter long, making daily readings of the temperature. It was a winter of record cold for Washington. Temperatures as low as six degrees above zero were recorded from the bat's nest. Yet when he opened the box in early spring, the bat was none the worse for its long chilly sleep.

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E FIELDS

GENERAL SCIENCE

Sciences To Be Dramatized In New Radio Series

A NEW attempt to bring science home to the public has been launched in a dramatized radio series, under federal government auspices.

The programs, specializing in natural sciences, are prepared by the Educational Radio Project, at the U. S. Office of Education. The central figure of the series is the Friendly Guide, who is questioned by a girl inquirer on such topics as wild flower conservation, volcanoes, strange habits of bees and other insects, and the ways of the weather.

Entitled "Have You Heard?" the programs are being sent out over the National Broadcasting Company facilities, on Friday afternoons.

A committee of scientists and educators, who are advising the Project staff on each script, consists of Dr. F. V. Coville, U. S. Bureau of Plant Industry; Watson Davis, director of Science Service; Miss Olga Jones, Office of Education; S. A. Riedel, Wilson Teachers College; and Richard Westwood, editor of *Nature Magazine*.

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ANTHROPOLOGY

Irish Eyes and Hair Studied By Expedition to Old Country

A SCIENTIFIC expedition to study Irish eyes, not to mention Irish hair, head shape, and other physical traits, has brought back from Erin a load of statistics and tales of adventure.

Gathering records to show what the Irish people are like today, physically, is part of the Harvard expeditions to Ireland, directed by Dr. Earnest A. Hooton, professor of anthropology at Harvard University.

The rather difficult task of getting 2,000 Irish women to permit heads to be measured, and heights taken, was achieved by Dr. Helen Dawson, National Research Council Fellow in Anthropology. Irish women in villages and farms are shyer than the men. To pave the way for a woman scientist's arrival, police of seven counties of Ireland went

ahead of Dr. Dawson, not to warn the people, but to reassure them that this strange woman had a useful errand.

Even with police notification, people of some neighborhoods made up their own explanations of the strange woman's visiting. Rumors would sweep from house to house, more powerful than any policeman's words.

One region heard that Dr. Dawson was a government agent secretly bent on investigating old-age pensioners. That rumor made the stranger and her note-taking unpopular until feminine tact could reassure doubters.

In another neighborhood, women came with extraordinary eagerness to be measured. They were mainly young women and they arrived even from long distances. Dr. Dawson quietly investigated, and learned to her amazement that she was supposed to be a talent scout from Hollywood. The young Irish girl, her clerical assistant, had started the story to attract more women and the device had worked.

Photographing women of rural districts proved harder than measuring them.

Rural Ireland has grown weary of post card makers and other commercial photographers who exploit the people as peasants, snapping pictures in fields and bogs where workers naturally wear old clothes and look untidy. Only a few of the women would permit their portraits to be taken for science.

The easier task of investigating physical traits of Irish men was undertaken by a Harvard anthropologist, Dr. C. W. Dupertuis, who measured over 10,000 men.

At Harvard now, punching machines and statistical procedures are reducing Dr. Dawson's notes to tables, and in four more months science will be ready to report what the Irish woman is really like.

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ZOOLOGY

Russia's Animal Resources Contribute to Moscow Zoo

WILD animal resources of the vast Asiatic holdings of the U.S.S.R. are to be drawn upon for contributions to the Moscow Zoological Garden, by several expeditions now taking the field. The expected captures range all the way from polar bears and walruses of the Arctic to giant leopards and panthers, and mountain sheep and goats, from the mountainous regions in Central Asia.

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AVIATION

Hammond Invention Empties Gasoline from Airplane Tanks

JUST as the carbon dioxide gas in the seltzer bottle forces the soda out of the spout, so it could quickly discharge the gasoline from the fuel tanks of airplanes in flight. Thus in an emergency landing the plane would hit the ground with no gasoline in the tanks to catch fire or explode. Instead tanks would be filled with non-inflammable carbon dioxide gas and danger of fire would be eliminated.

This is essentially the principle upon which is based a patent (No. 2,038,998) recently granted to John Hays Hammond, Jr., son of the famous engineer.

According to the invention, each plane would carry a cylinder of compressed carbon dioxide or some other non-inflammable gas under pressure. By pipes, the cylinder would be connected to the fuel tanks and to piston-operated valves, one of which would cut off the supply of gasoline to the carburetor and the other of which would simultaneously dump the gasoline into space.

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PHYSICS

Radium, Pressure Explain Color of Salt Crystals

RADIUM, followed by heat or pressure, explains a beautiful but puzzling blue color found occasionally in natural salt crystals, says Prof. Karl Przibram of the Institute for Radium Research of the Vienna Academy of Sciences.

Blue salt crystals have been known for a long time, but until after the discovery of radium and radioactivity there was not even a conjectural explanation of their cause. Then it was suggested that irradiation by radioactive elements was responsible for the blue color.

Dr. Przibram and his pupils tested the theory in the laboratory, irradiating ordinary salt crystals with radium rays. The colorless crystals did take on color—but the color was yellow. Only when the yellow crystals were heated or put under pressure did the blue color appear.

Yellow rock-salt crystals were unknown in nature, so the research appeared to have run into a blind alley. Lately, however, a salt mining engineer, O. Schauburger, found some natural yellow crystals in a salt mine in the Tirol. When heated in the dark, these crystals turn blue.

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