



Aiding the Enemy

DROUGHT-weather inflicts a triple punishment on the farmer's crops: it deprives their roots of water, it demands and takes more water than their leaves can spare, and it encourages some of their worst foes among insect pests and plant diseases.

It is not altogether coincidence that the return of the grasshoppers in the West has dated from the drought years of 1930 to now. Grasshoppers thrive on drought. Dry soil through the winter, especially if the winter is mild, favors survival of their eggs, and dry soil which quickly warms in spring favors equally their hatching. A chill, wet spring delays the emergence of the young "nymph" grasshoppers, and when they do hatch either drowns them outright or encourages parasitic fungi that are their most serious disease-enemies. This year's dry winter, dry spring and (to date) dry summer has been almost unprecedentedly kind to the 'hoppers, and their swarms are now sweeping from North Dakota to New Mexico and thence across to California.

Chinch bugs, too, profit by drought and hot weather. Like grasshoppers, they over-winter in the soil, and like grasshoppers they travel most easily when there is dry weather during their migrating season. Their customary seasonal life-history, at least in the corn belt, is to infest wheat and other small grains during the spring and early summer. Then, when the July harvest deprives them of their first meal-tickets, they migrate into the cornfields to spend the rest of the summer sucking corn-juice. For this migration dry soil is more favorable than wet.

Drought not only provides this dry soil, but also stimulates their migration

to the cornfields, by making short small-grain crops that mature early and must be harvested early—if at all. Thus this summer we had the spectacle in Congress of Senator Byrd, watchdog of the treasury and strong anti-Administration partizan, introducing and championing a bill to put a million dollars into the hands of his pet particular *bête noire*, Secretary Wallace, for fighting the drought-favored chinch bug in the warmer parts of the Secretary's own grain belt country.

Fungi are commonly regarded as profiting by moist weather—influenced,

perhaps, by the way one's immediate personal possessions get mouldy in damp seasons but not in dry. However, such fungus-engendered plant diseases as wheat scab and the black-stem rust of grains seem to spread more rapidly in droughty summers. The dry air, doubtless, is favorable for the transport of their propagating spores, and morning dews on the leaves supply enough moisture to permit germination and entrance of the creeping microscopic fingers of the hyphal threads of these parasites.

Science News Letter, June 23, 1934

PHYSICS

Squeezing Turns Phosphorus From White to Black

BY SQUEEZING atoms of phosphorus with pressures of seven tons to the square inch Prof. P. W. Bridgman, research physicist of Harvard University, has just been able, for the first time in the history of science, to make this chemical element change its color from white to black by pressure alone.

Prof. Bridgman's latest achievement in the field of high pressures, in which he is a world-famous authority, is reported in a letter to the editor of the *Physical Review*.

In the squeezing process, where the pressures become comparable with those found only inside the earth, the phosphorus changes from the dangerously inflammable waxy-white form which has to be kept under water to prevent its

spontaneous burning, into a darkish, non-inflammable relative.

Phosphorus, while never found free in nature because of its affinity for other chemical elements, is widely distributed throughout the world. It is, as one example, an essential ingredient of the protoplasm of the human body.

Science News Letter, June 23, 1934

The University of Michigan now has one of the most extensive collections of Tibetan art and anthropological material in the world.

Due to some chemical change in the manufacture, candles of some colors such as green and black seem to drip more readily than other colors.

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