



THIEVING RIVER

The nation's capital was fortunate among the flooded cities, but here also "That Ole Man River" took his toll among the industrial plants of the Georgetown riverfront. The troubled waters in the foreground are those of the river itself, but at the left, equally wet, is a business street. This photograph and the one on the front cover were taken by the U. S. Army Air Corps.

METEOROLOGY-CONSERVATION

Floods and Dust Storms Children of the Same Folly

Destruction of the Living Sod and Its Spongy Layer Of Top Soil Lets Dust Blow and Water Run Away

By **PROF. PAUL B. SEARS**, of the University of Oklahoma, Author of "Deserts on the March."

NATURE has again been good enough to warn us, by a perfectly synchronized drama of dust-storms in the West and disastrous floods in the East, of the wrath that is brewing against our Western civilization unless we mend our ways. The two extremes, seemingly unrelated, are absolutely facets of the same picture.

The dust storms are not simply a matter of unavoidable drought, but a result of the destruction of the living sod which alone can bind the looser soil types of the semi-arid high plains. This destruction has had a two-fold source. The range has been stubbornly overloaded with cattle almost ever since the extermination of the great buffalo herds. Wise cattlemen know the danger of this, but the pressure to liquidate their heavy debts often leads them to take a disastrous chance. The sod, cropped too close, affords too little protec-

tion against the prevalent winds of late winter and spring.

Even more serious is the second source of trouble—the attempt to farm the high plains in wheat, using power machinery. Even this year, with the somber warnings of last year's dust storms, there have been men who continued the losing gamble—one operator for example having set out not less than seven thousand acres of wheat. The wheat is as a rule unable to gain sufficient foothold during the winter months to protect the soil. Comes spring with its high winds, and the terrific dust-storms arrive.

What has this to do with the destructive floods that recently raged throughout the East? Recently travelling through the oldest agricultural states of the Union, the writer has scarcely seen a place where the old top layer of soil is left. Careless methods of farming have allowed it to wash away in the past two and three centuries. The insidious thing is that this has taken place

without much sculpturing of the ground, so that unless one is a trained observer who knows what the soil should be like, he is unaware of the profound destruction that has been wrought.

It is this dark, spongy, top layer of soil—what the specialists call the A-horizon—which is our only effective protection against flood. One can build dams downstream, construct mazes of levees and ditches, and still not touch the source of trouble. The water must be caught where it falls, and the one thing that can arrest it and hold it in place is the dark A-horizon of the soil. This layer has been made into a perfect sponge by ages of accumulation of plant material. It will retain the water, filter it, and slowly release it in a limpid stream.

Unless we take measures, through proper use of the soil, to restore this layer—no easy task—we may expect a recurrence of disaster every time there are continued heavy rains. The problem is more a matter of biology than of engineering, and the sooner we realize it the better. Our present tactics, if we could really see them as they are, would make the wise men of Gotham blush.

Modern medicine has learned that pestilence is easier to prevent than cure. Proper land management will vaccinate our land against future floods. Nothing else will.

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ENGINEERING

16-Mile Long Bridge May Link Denmark and Sweden

A GIGANTIC engineering project which will link Denmark and Sweden with a 16-mile long bridge, provide a super-high-speed highway across the island of Zealand on which Copenhagen is situated, and also span the Great Belt separating Zealand from Funen and the rest of Denmark, has been proposed by three Danish construction firms.

The Danish parliament is reported to be considering the plan with favor, although its total cost will be 628,000,000 kroner, or approximately \$150,516,000.

Construction would employ 12,000 workmen during a ten-year period.

Especially favored by Scandinavian industrial and business circles is the 16-mile long bridge which would join Copenhagen in Denmark and Malmoe in Sweden, across the Ore Sund. Its estimated cost of \$33,744,000 would be borne jointly by the two countries.

The great high-speed motor highway across the island of Zealand would cost \$48,618,000, and the bridge over the