

## CHAPTER XXV

### THE PREVENTION OF FLOODS

NOTHING could be more beyond control, to the mind of the primitive man, than a flood. The imagination has selected the flood as the most ineluctable of all catastrophes. It visualizes a drowned world as the penalty of sin; and Noah, representative of the saved, finds safety, not in controlling the waters but in yielding to them.

Floods seem to defy resistance. Fires may be fought, but floods come straight from the hand of the Almighty. When the windows of heaven are once opened, civilized man dwindles again to the feeble stature of a savage. Paris, the center of civilization on board the good ship *Earth*, tamely submits when the Seine leaves his banks. In the Lower Mississippi Valley American civilization stands by helpless when the Father of Waters as-

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sumes a father's prerogative of chastisement. The patient Chinese, bowing to the power of the flood, call the Hwang-Ho the "Ungovernable". For four thousand years they have been fighting the floods, always failing to govern the "Ungovernable", but always trying again, and again, and again, after every failure, with a persistence which is both sublime and touching. The "Great Yu", 4,200 years ago, filled a position a good deal like that of the head of the corps of engineers of the United States army—only Yu had the Hwang-Ho to fight. He was a great engineer when our ancestors were savages. Greece and Rome have risen and fallen, the Germanic races have spread in savagery over Europe and developed civilization, the Moslems have in successive waves almost swamped Caucasian civilization, America has been discovered and peopled, the Moslem wave has receded, the summit of prosperity and activity in all the world's history has been reached in a continent which was unknown to the civilized world 3,500 years after the "Great Yu" was appointed superintendent

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of works in China in charge of river improvement—and still the Hwang-Ho is called “China’s Sorrow”, “the Scourge of the Sons of Han” and like names, by the wonderful people who live so simply and laboriously along its banks.

As recently as 1898 the “Ungovernable” devastated thousands of villages and cities. In 1877 it destroyed a million people—and these are only some of the most dreadful paroxysms of “China’s Sorrow”.

Floods grow more and more dreadful as the deck room on the good ship *Earth* becomes more crowded. The fiercer struggle for sustenance forces people to live on the rich lands which are below high-water level. The American people are forced upon the Mississippi bottoms by necessities similar to those which have for thousands of years driven the Chinese not only to the banks of her rivers and canals, regardless of safety, but actually out upon her waters by millions.

Those who are directly imperiled by floods are the poor—the rich live on the high lands

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—and they can always move. Our greatest floods are small in destructive power compared to those of other lands, simply because we have not so many poor, and have not utilized our river bottoms so completely. Unless something is done to control floods, we shall gradually reach the state of China—a state of things in which millions of people will be drowned annually in the inundations of the Ohio, the Missouri-Mississippi, the Tennessee, the Sacramento, the Alabama Rivers, and the streams flowing across the Atlantic coastal plain from the Appalachian Mountains.

Nothing is more pitiful than a city or a farm devastated by a flood. A fire is at least clean and definite in its conclusion. A flood is most endurable at its height. When it recedes, its misery grows. The sodden houses, the clothing and bedding spread out to dry, the household goods desecrated, the house rendered unwholesome for occupancy, the furniture falling apart, the disease, the fields stripped of crops and perhaps of soil, or strewn with sand and gravel from the hills—a

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flood brings the very abomination of desolation.

And yet, most floods might be controlled by modern engineering, directed with all the energy of a great people. There is reason to believe that what China needs more than anything else, now, is a modern successor to the Great Yu. This man would command the resources of all China to reclaim the whole Chinese lowland from the danger of floods—and in doing so, he would make room for millions of people to live in plenty.

Each river system is a problem in itself, as far as floods are concerned. The rivers of China rage in freshet and dwindle in drought for the same reasons that cause all the streams that fall into the gulf east of Texas, all that fall into the Mississippi from the east, and all that empty into the Atlantic to do the same things—because of the destruction of the forests on their headwaters. The deforested hills of China are desolate, and breed floods. The deforested hills of New England, and the middle and south Atlantic states are going the

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same way. Water runs off a plush-covered seat or a forested hill or mountain slowly. It runs from a varnished seat or a bare hill, or mountain rapidly. Where man has stripped the forest-plush from the high portions of the decks of the good ship *Earth*, the rainfall rushes roaring down into the scuppers, called valleys, bringing destruction to those who live down there.

When we become really civilized, we shall re clothe the mountains which our need and our greed have stripped of their forest cover. This will in itself stop the worst of the floods—and furnish us with the timber we shall so sorely need. In this way can some of the “Un-governables” be governed.

Irrigation will call for more and more of the water which now wastes down in floods. The Roosevelt Dam in Arizona is an instance. Never again will a drop of flood water pass out of that valley. Every drop will be used for the crops, and will seep slowly back into the stream. The Yellowstone in Montana will all be used for irrigation—and so of many

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other rivers. If the Dakotas and Montana were to be plowed twenty inches deep, scarcely a tenth of the water which now goes from them to swell the Missouri would flow from the soil. It would sink in—and the soil needs that deep plowing.

The problem of the Mississippi floods is largely a question of getting rid of the waters from the Ohio and its branches. Plans have been sketched out for holding back these waters in a great system of reservoirs, stretching from the headwaters of the Alleghany to those of the Tennessee. Other great reservoirs are possible along the Upper Mississippi—where, indeed, many have already been constructed. “Water conservation,” says Lyman E. Cooley, “demands storage, and four per cent. to six per cent. of the area in reservoirs will equalize the flow of streams. By fish culture such reservoirs will have greater value than the land taken. They add to the landscape, and make places of recreation for the people.”

Let the world rise to the occasion, and the

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floods will be at an end. With the ending of the floods will come in the age of water-power or white coal. The waters, as they flow down from the mountains, are more valuable than the lands they devastate—if their devastation were necessary. But they need bring no such devastation—and they can be made to do more work than our coal can do, and instead of destroying the lands below, they may be made to enrich them beyond measure. This is work for each nation on the good ship *Earth*—and if the nations fail, it is work for the federation of the world.