

THE OHIO FLOODS

CAN SUCH CALAMITIES BE PREVENTED?

BY THEODORE ROOSEVELT

EVERY American may justly be proud of the energy and efficiency with which his countrymen deal with great disasters like the San Francisco earthquake, the Baltimore fire, and the floods in the Ohio Valley. He may also well be proud of the unquenchable courage with which the sufferers from these calamities rebuild their cities and homes, repair the overwhelming damage to their property and their business enterprises, and take up again without delay or repining their work of activity and achievement. Such courage and efficiency give a clear proof of the ability of the American people to solve the problems of their National life, no matter how great those problems may be, when they once grasp their true proportions and significance.

One of the greatest of our National problems is that involved in the conservation of our forests, rivers, and water power. While I was President, and during the years since I left the Presidency, I have given a great deal of time and thought to the study of this problem. It may be that some of my conclusions will be of help at this time, when every thoughtful citizen is asking himself whether such floods as those which have spread havoc and ruin through the tributary valleys of the Mississippi can be prevented. I think they can.

Just one month ago, on March 5, I wrote a letter to my friend Mr. John M. Parker, of New Orleans, on this subject. The letter was prompted by some photographs which he had sent me and which portray the misery, the terrific loss, the ruin wrought on the plantations of the rich Mississippi Valley by the floods of last year. In this article I shall repeat the substance of my letter to Mr. Parker.

During the spring and summer of 1912 hundreds of farms along the Mississippi River, from Cairo to the Gulf, were flooded because of the inadequacy of a levee system, un-supplemented by source-stream control, to keep great floods within the channel of the river. More than one hundred thousand persons were driven from their homes, and some were drowned. Homes, buildings, agricultural implements, corn, forage, crops, cattle,

horses, and hogs were destroyed in large numbers, and the wild animal life taken by the floods cannot be computed. Health problems of dangerous importance were created, and the injury to business and commerce aggregated hundreds of millions of dollars. In order that the suffering by human beings might be reduced, the Federal Government promptly appropriated \$6,000,000 for the purchase of food and for the repair of broken levees. But not one cent was appropriated for the solution of the monster economic problem involved, or for the correction of the fundamental evil that has been created through the changes wrought by man in the watershed of the Nation's greatest drainage system.

In January, 1913, a single tributary, the Ohio, rose, and floods in the valley of that river did great damage between Pittsburgh and Cairo, and so swelled the waters of the Mississippi between Cairo and the Gulf as to cause the breaking of the Beulah levee, in the State of Mississippi, a second time within twelve months, thereby flooding the cotton plantations of four most fertile counties.

Levees built on the lower Mississippi will not prevent great and destructive floods in the Ohio and the Missouri Rivers, and these floods, forming without check as a result of accelerated run-off from denuded mountain sides, tile-drained farms, and generally improved drainage, gather enough force by the time they reach the Mississippi River to destroy the levees and turn farms into reservoirs. In this way much valuable property is destroyed, navigable channels are spoiled, power and needed water are wasted, and all because the Nation has been so poor in purpose that it has not seen fit to turn a National agency of waste and destruction into a National agency of prosperity.

The valleys of the Mississippi River and its tributaries cannot be permanently protected from floods unless four things are done:

First. The Mississippi River must be treated as a unit, with all its tributaries, from source to mouth.

Second. The levee system must be brought up to standard for its entire length,

and thereafter maintained by the Federal Government.

Third. The levee system must be supplemented by adequate revetments that will protect caving banks; and

Fourth. The levee system must be further supplemented by source-stream control which will lower the crest of the floods in the Mississippi Valley and thereby relieve the pressure on the levee.

Source-stream control will mean flood waters conserved for use in the irrigation of dry lands, for the development of hydroelectric power, and for the supplementing of the dry-season flow for the purposes of navigation.

Bank revetments will mean prevention of soil erosion, of soil waste, and of the formation of navigation-impeding sand bars.

The building of standard levees by the Federal Government, fully justified by the

fact that the necessity therefor arises from the increasing volume of flood flow in the drainage of many States, will mean uniformity, economy, and systematic protection in so far as levees can be made to protect the low country.

The treating of the Mississippi watershed as a unit from the mouths of streams to their sources will mean the co-ordination of the work of the Federal engineers, of the Reclamation Service, of the Forestry Bureau, of the Division of Soils, of the Geodetic Survey, of the Mississippi River Commission, and of the National effort to turn floods into power, arid regions into gardens, and marshes into farms. All this might be done by one act of the Federal Congress. We can lift the rivers out of politics by enacting a single adequate measure, establishing a policy, and providing continuing funds, exactly as was done in the case of the Panama Canal.