

## THE 1926-27 FLOODS AND THE ILLINOIS RIVER VALLEY VEGETATION

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Probably all readers of this article will well remember the heavy and continued rainfall which began during the first week of September of 1926 in the central United States. Within two weeks the tributaries of the Mississippi River and particularly the Illinois River had reached a stage comparable to floods of 1922, 1904, and 1884. The flood of 1926-27, however, proved to be entirely different from preceding floods if we are to judge by the unusual effect it had upon the river valley flora. The principal and immediate difference was in its duration and re-occurrence, its history running somewhat as follows:

The high water of September persisted until December, when there was a subsidence which was followed by more hard rains and high water in January, lower water in February and March but a third rise in April, which persisted until the middle of June.

Levees broke and leveed districts were flooded; unleveed, unprotected areas in the river bottom were under water or covered with ice almost all winter. At about corn-shucking time many ranches were covered with just enough water to allow the wild ducks to swim about in the corn fields and pick the corn to the cob on the upright stalks without straining their necks the least bit. The flood was no hardship for the ducks, but it was for the farmers. Preceded by the rabbits, quail, coons, possums, and other ground-inhabiting animals, the farmers waded out to the nearest levee or high ground, camped there, and waited for the water to move out.

The plant inhabitants of the valley were even less fortunate. Anchored to the spot, they had to stay and see it through. The high waters of early fall and of the winter were probably not so destructive, but the persistent submergence of the spring and early summer finished a great many. Total or partial submergence during this critical period, the blossoming and foliating time, was too much for many plants. Very few trees and shrubs profited by the unnecessary wetness. The majority were probably injured in some



FIG. 1. Pecan forest, June, 1927, as water was leaving.



FIG. 2. Dead trees east of LaGrange Locks, August 1927, killed by alluvial soil.

way, and many were killed. In regions where there was not too much alluvial soil deposited with its subsequent smothering effect, the larger, better-established trees of most species survived, bearing sickly, pale, poorly-colored leaves all summer as a remembrance. This, however, was not entirely true of all regions. Above and near the LaGrange locks and dam, hundreds of acres of pin-oaks, elms, and cottonwoods were killed. Estimates made in this region indicate 90 per cent mortality of the species mentioned. Cottonwoods in particular seemed to be easy victims. In the lower end of the river valley, pecans, some of the few walnuts found there, and a few maples were killed, generally the smaller trees, those not exceeding fifteen feet in height. In general, maples, elms, and ash were indifferently affected and the ever-present "elbow-brush" seemed to be infatigable.

The herbacious growth was temporarily annihilated, but it was re-established within seven days after the water was gone, due to the numerous water-resisting seeds buried in the mud. Maple and cottonwood seedlings were soon apparent and abundant. This ability to successfully re-seed, or re-plant, seems to be a big factor in the control of distribution or the determination of existence in valley flora.

The influence of deposited soil has been mentioned. Deposition of alluvial soil ranged from a few inches to two feet in depth. Large trees, well adapted to the numerous vicissitudes of river-valley life, failed to withstand this. Numerous examples were witnessed, both in the Illinois and Mississippi River valleys, of high mortality in honey locusts, pin-oaks, and even elms and maples, caused by this addition of soil over the roots.

The whole affair illustrates the tragic but interesting struggle for existence of the river valley plants. It seems that the fittest cannot alone be characterized as those that can withstand the emergency but also those that can stage a comeback through their living descendants.