

## THE DROWNING OF TREES IN LAKE CARL BLACKWELL

H. I. FEATHERLY, Stillwater

The dam at Lake Carl Blackwell was completed in the spring of 1938. The timber on the lake site had been removed as far up as the meander line of the lake with the exception of that on a few farms against which condemnation suits were pending. The lake started to fill with water June 10 and reached its highest level on June 19, 1938. Subsequent rains have hardly made up for evaporation since that time; hence, the water level is somewhat lower. Since June 19, 1938, the timber in question has been flooded to a depth of several feet. Many of the elms never leaved out in the spring of 1939. Neither did the coffee beans, cottonwoods, or hackberries. Observations of the trees made May 9, 1939 were as follows: willows appeared normal; coffee beans were dead; some of the ash were still living but in a chlorotic condition; some burr oaks were dead, some had died in blossom and other were green but chlorotic; a majority of the elms were dead, some were dying, and a few appeared normal; the honeylocust sprouts which reached above the water appeared normal.

In September the author was unable to procure a boat to go out to examine the trees, but observations from the margin of the lake indicated that all the trees except the willows were dead. Several years ago, willows caught in a similar condition at Thomas Lake northwest of Stillwater continued to live in water for a number of years by putting out aquatic roots near the surface of the water. Later, when the City of Stillwater purchased water from the lake, the water level was lowered about three feet and the willows all died. Suddenly lowering the water level left the aquatic roots above the water line. The bases of the trees were already dead and the trees were being supported by aquatic roots.

The conclusion is that most of the coffee beans (*Gymnocladus dioica* (L.) Koch), the burr oaks (*Quercus macrocarpa* Michx.), the green ash (*Fraxinus lanceolata* Borkh.), the cottonwoods (*Populus deltoides* Marsh), the hackberries (*Celtis occidentalis* L.), the honeylocusts (*Gleditsia tricanthos* L.), and the elms (*Ulmus americana* L.) can not survive over twelve months of flooding, and that none of these can survive over fifteen months of flooding.