These assumptions were based upon the results of experiments made on a small scale.

Two sketches shewing cross sections of the dykes are hereto attached : —one shewing the position of the dyke, as built and placed upon the bottom without scour, the other shewing the position which the dyke was assumed to take, under a secur of about 15 ft. and which it did, eventually, in most cases, take.

The work upon the dykes was commenced Sept. 27, 1871, the stage of river being ordinary low water.

The position of the different dykes is shewn upon the map, numbered in order in which they were commenced; No. 4 was designed to turn the channel. Before commencing to build this dyke it was thought expedient to reduce the current in the ch. nnel, across which this dyke was to be built. For this purpose dams were built across two small channels; thus connecting two dry sand bars with the main shore, and excluding a large flow of water.

From the head of the outer of these bors, a dyke, No: 3, was commenced and built downwards and slightly outwards; and, as the work progressed, slowly closing the upper end of the steamboat channel, across which the main dyke, No. 4, was at the same time being built, at a distance below of 2,300 ft.

These dams Nos. 1 and 2 being required only for temporary service, were built of small trees, and brush held in place while sinking by small piles driven by hand; and loaded with sand at an elevation of about 2 feet over ordinary low water.

Dyke No. 3 was built in the same manner, and was extended, eventually, for a distance of nearly 800 feet, crossing almost entirely the steamboat channel which at this point was 600 feet in width, with rapid current and water from 8 to 12 feet in depth. This dyke, although intended only for temporary purposes, was the means before long, of causing a total change in the low water channel, forcing it out of its course along the Kansas shore and throwing it eastward, forming a deep channel through the centre of the other existing and shallow channel.

Dyke No. 4 was commenced shortly after the dams above described, and was carried on at the same time as No. 3.

This dyke being intended to act permanently as a means of directing the river, was built in a more solid manner than the structures already described. The form of cross-section of this dyke has been already described. The embankment was formed of alternate courses of trees and brush laid crosswise; and of poles laid lengthwise, and breaking joint. The courses of trees and brush were about 3-ft. 6-ins, and the courses of poles from $1\frac{1}{2}$ to 2 feet in depth. The bottom and top courses were always formed of trees and brush laid crosswise. The trees varied in length from 30 to 60 feet, according to their position in the bank, the whole width being always made with trees of the proper length. They were trimmed by having their branches lopped so as to lie close to the stem; or the branches were cut off entirely for 20 or 30