soil texture, a granular condition not too fine nor too coarse, neither too compact nor too loose. Let me illustrate this by a simple experiment. Here are two brass tubes with sieve bottoms. Equal weights of loam were placed in them. In tube No. 1 the soil was packed to field conditions; in tube No. 2 it was left as loose and open as possible. Water was poured carefully into each and allowed to soak through. When both soils were just filled with water, the loose one *contained* 34 per cent. more than the compact. In soil six inches deep this is equivalent to one inch of rain, *i.e.*, if a loam is loosened up for a depth of six inches it will absorb one inch more than the compact soil before any of the water is lost by surface run off. The tubes were then let drain, and when all drainage had ceased, it was found that the loose had *retained* 28 per cent. more water than the compact, which amounts to four-fifths of an inch in six inches of soil. This is equivalent to a very heavy rain. A further test was made with these two samples. We measured the rate of drainage, and it was found that the loose soil allowed water to pass through it more than twice as fast as the compact did.

This illustration demonstrates one of the chief objects in fall-plowing, viz., the absorption and retention of water; it also teaches that deep plowing will achieve this object better than shallow plowing, and further that subsoiling may be beneficial, provided, of course, that the subsoil is left in the bottom of the furrow, as demanded by other conditions. It should be said here, however, that there are some soils, *e.g.*, light sandy loam, which do not admit of loosening up to any great extent, for being of coarse texture they dry out very rapidly when loosened up. We may infer also that lands with open subsoils (not too open, of course,) will have greater reserve of water for the plants in time of drouth than will those with close subsoils. And we might hence inquire if there is any means of improving the texture of subsoils of the latter class. In this connection, we recall that it is a matter of common experience that well drained soils will withstand a drouth better than similar soils not so well drained, although the crops on both might look equally well at the commencement of the drouth. This result, which, at first thought, might not be expected, finds its explanation in the fact that drainage always improves the texture of all the soil affected, subsoil as well as surface soil, and with improved texture the water-retaining capacity is increased. Thus, when the soil is in best condition for supplying water to the crops in a dry season, it is likewise most capable of protecting them during a wet one.

But there is another aspect of soil moisture that during seasons of average or scant rainfall is equally as important as that already considered, viz., the conservation of the water after it has been stored in the soil. The one great source of loss is evaporation. Few, I believe, have any conception of how much water may be lost in this way. We have had the good fortune to devise a reliable apparatus for measuring the amount of evaporation from water surfaces, and have been making continuous tests since the middle of May, and I must confess that we have been surprised at the results. The College reservoir, which you have all seen, is approximately 100 feet by 60 feet and 12 feet deep. How much