The experiment was varied by substituting chloride of lime, sulphate of soda, and carbonate of potash, for the chloride of barium, and on the proper re-agents being applied in every instance, the presence of those substances was detected in *large* quantities on the surface of the soil in the cylinder. Here then was proof positive and direct, by plain experiments in chemistry and natural philosophy, of the agency, the ultimate, beneficial agency, of droughts.

We see, therefore, in this, that even those things which we look upon as evils, by Providence are blessings in disguise, and that we should not murmur even when dry seasons afflict us, for they too are for our good. The early and the latter rain may produce at once abundant crops, but dry weather is also a beneficent dispensation of Providence in bringing to the surface food for future crops, which otherwise would be for ever useless. Seasonable weather is good for the present, but droughts renew the storehouses of plants in the soil, and furnish an abundant supply of nutriment for future crops.

I am happy to state that Prof. Henry of the Smithsonian Institute has fully endorsed the above views.

If the effect of this had only been to teach men patience under seeming evils and to add another proof to the goodness of our Creator, I should have been amply rewarded for all sacrifices that I have endured in my present position. If I could teach mankind to be patient under present evils, in the certain anticipation that they will bring to them ultimate good, then would I be contributing much to the cause of human happiness. Apart from this view of the case, however, the above facts have a great practical bearing on the operations of farming. In soils that have an impervious sub-soil, and from which the water runs off and does not soak through, it is apparent that no benefits can arise from droughts; if the water does not soak through a sub-soil in wet, it cannot arise in dry weather, and this being the case, nothing can be brought up from below; the cultivators of such soils will endure all the evils of drought on present, and derive no benefit from them on future crops. He therefore is taught to loosen and break up those impermeable sub-soils by means of draining, deep plowing, and sub-soiling when these sub-soils contain nothing injurious to vegetation. It teaches the cultivator of the soil that he should so prepare it as to reap the advantage of his labor in a good season, and when a drought comes, he will be comforted by the reflection that its future benefits will compensate him for all his present losses

I proceed now to give a description of the counties visited by me since my last Report to your honorable body, the analyses of their different soils, with the best and most economical mode of