The following paper was lately read before the American institute Farmers' Club by Col. D. A. Robertson, of Minnesota:

During the last 'wenty years the flow of immigration from Europe and the older State of the Union to the fertile prairies of the North-west, stimulated by annually increasing numbers and lines of competing steamships and railways, has been without parallel in the history of American colonization.

The people of the prairie State obtain their chief supply of lumber from the pine forests of the North-west and Canada. The Lower Massissippi Valley is rapidlinoressing, the supply yearly diminishing greas ascretly impending, and exhaustion is rapidly appreaching. No time should be found the Mississippi Valley is rapidlinoressing, the supply yearly diminishing greas ascretly impending, and exhaustion is an Western States in providing means for the renoval, and preservation of the North-western pine forests, as well as for extensive free-growing on the plains and prairies Immigration to the West has already reached the limits of snoceasful agriculture. The vast region beyond, stretching westward to the Rocky Mountains, must continue almost must be supply uncultivated and destitute of civilized population so long as it remains a tree-less waste.

The growing of trees over this whole repion would be quite practicable, if protected from the protect of the protect of the protected from the protected from the protect of is the population so long as it remains a tree-less waste.

The growing of trees over this whole region would be quite practicable, if protected from the fires which annually overran its surface. Wherever the fires are prevented upon the prairies trees grow spontaneously. But upon the plains the prevention of fires will not be sufficient to make successful agriculture, possible. The atmosphere is recessary will not sufficient to make successful agriculture possible. The atmosphere is necessary will not water. Irrigation will be necessary upply and distribution of rains shall have become established. A considerable supply of water for irrigation may be obtained by means of ordinary wells, with windmill pumps, but the chief reliance must be on Artesian wells. There is no doubt that an abundant supply may be procured from this source. The experiment has already been sufficiently tried to paomise success. A well-brain, and, with other encouragements, lead to their rapid settlement of the plains is the boring of Artesian wells may be sufficient to attract a large entigration to the plains, and, with other encouragements, lead to their rapid settlement, and extensive tree-planting upon every quarter section of land thereby irrigated. While the condition precedent necessary to successary to successary to the plains is the boring of Artesian wells with the condition precedent necessary to successary to successary to successary to successary to successary to successary to such the successary to suc

ernor Campbell, of Wyoming, states that "the Union Pacific Railroad have demonstrated the feasibility and practicability of securing a supply of water, even upon our most elevated plateaus, by means of Artesian wells in this territory, ranging in depth from \$25 to 1,145 feet, at an average oce of \$9 of per foot. Each of these wells furnishes an ample supply of pure water, varying in quantity frem \$5,000 to 2,100 gallons per hour."

Whenever, on our plains, as on the deserts of Asia and Africa, water is brought to the surface, there soon appears abundant and fuxuriant vegetation. For some years past the Government of France hashad a corps of engineers at work boring numerous Artesians wells in the deserts of the Algerian Sahara, and with the most gratifying encoses. Each of these wells soon becomes the centre of an oasis of palm trees and other vegetation; and that equal and even greater economical results will follow like experiments upon our western plains there is no reason to doubt.

There is sufficient data for the opinion that those plains, as well as the prairies of the Western States, were once covered with

reason to doubt.

There is sufficient data for the opinion that those plains, as well as the prairies of the Western States, were once covered with forests, which were gradually destroyed by the annual fires. All that is needed to make these plains equal to our best agricultural lands and the seat of many opulent and populous 'States, is irrigation and the planting of trees. The agricultural value of these plains, when they shall have been so reclaimed, is comprehended by very few of our people. The causes of this treeless addity, which have been operating for many centuries, have enriched their soils with all needed fertilizing elements. The annual recurrence of long, hot, rainiess esasons, producing excessive evaporation, has raised from great deptins to the surface the salts and saltais rich in sulphates and phose phases, which are effloreseed upon the surface in the dry season, and deposited during the rainy season in the upper end and subsoil, there to await the coming husbandman, to be utilized in the growing of abundant their stems, and season and harden their stems, and stalks and seeds. So these plains must become vast whether the cooks of the grasses and cercals will laborate stilicate of potash to glass and harden their stems, and stalks and seeds. So these plains must become vast whether the cooks of the plains contained the growing the growing the growing the growing the growing t

So these plains must become vast wheat fields, sufficient to supply the world with bread.

Systematic tree culture upon our Western plains is necessary, not only to prepare them for successful husbandry and thriving populations, but also to protect the Mississippi and Lake States from the greatest calamities and sourges to which they are exposed. Among the plagues of the Northwest which come from the plains are the immense swarms of insects which so often reducing large districts to the verge of famine, and frequently to actual destitution. Among these plagues are the territable "Houses of Egypt," which devour every kind of herbages in their track. Only forests and large bodies of water arrest their migrations eastward. All the frontier are exposed to their ravages.

WASTEFULNEES OF FAILMERS.

Not less than twenty per cent. of the entire capital employed in farming in this country is wasted. This is a low estimate, for on many farms the amount of waste is double the sum named. Perhaps the coarcity and high prices of labour in a few localities may be considered a reasonable excuse for this loss, but we hold that no man should undertake more than he can accomplish without waste. The first and most prolific source of waste can be readily traced to large for this loss, but we hold that no man should undertake more than he can accomplish without waste. The first and most prolific source of waste can be readily traced to large for this loss, but we hold that no man should undertake more than he can accomplish without waste. The first and most prolific source of waste can be readily traced to large for this loss, but we hold that no man should undertake more than he can accomplish without waste. The first and most prolific source of waste can be readily traced to large for this loss, but we hold that no man should undertake more than he can accomplish the proper of the form the results are that haying and harvest in the form the plant of the form the first plant of the form the first plant of the form the first plant

In spring, more corn, pocacoes and osteriorops requiring outburst during the period of growth, are put in than can be attended to another results are that haying and harvest ing grain crowd upon the hoeing, and waste to course on all sides. Scarcity of labour is always put forward as an excuse for this waste, but the farmer was well aware that he could not obtain the required amounts long before his crops were put into the ground, and should have known just how many men were required to take care of and harvest any certain number of acres of any harvest any harvest any harvest

Gardener.

FROTECTION V. EXPÓSURE.

In the midst of a howling nor easter, which is sweeping over these North-western prairies, in celebration of the near approach of Thanksgiving, probably, every good farmer—Christian, Jew, or Gentile—will not fail to think of the comfort, or discomfort it may be, of his demestic animals. The most shiftless, unthrifty, and cruel of them all will at least receive to finish that shed, to fix that barndoor, to batton the cracks and chink up the foundation of that cow-house, when it clears up. This much they will do—that is resolve, because the pitiless storm pistohes their humanity to that extent; and it will be well, better than usual, if the virtuous resolution be finally carried into practical effects.

It is not, however, to the humanitarian, that it is desired to call attention. The lowest estimate we have ever seen of the less occasioned by the exposure of cattle during indement weather, as compared with comfortably housing them, is twenty five percent of the food supplied. That is, if a given amount of food will maintsin an animal in a certain condition when exposed to the weather. And this calculation, based upon carefully-conducted experiments, with a view to test the single question, is made for the central countse of Eggland, where he climate of the winter months cannot be called rigorous in comparison with that of the United States, north of the fortieth derwell of the content on the content of the content of