

reason to fear that in many instances, from the weakness of the solution and the insufficient time allowed for the grain to absorb it, the operation is null and void, so far as regards the destruction of the parasitical spores. It has been shown that sulphur, either in form of flowers, or milk of sulphur, or in that of sulphuric acid, has been employed with very excellent effect. The sulphuric acid if used, four ounces, by weight, to each bushel of seed, diluted with as much water as the wheat will take up; the latter, after a few hours' solution, being dried with slacked lime. Sulphur and lime also make an excellent combination most effectual in destroying fungi. The milk, or flowers of sulphur, in powder, to be mixed with twice its weight of fresh slacked hot lime, ten gallons of water to each pound of sulphur; this forms a sulphuret of calcium with which the whe it is to be well moistened, and afterwards dried with fresh slacked lime. It is to be hoped that a few practical experiments will be made during next seed-time, with a view to determine the double question of the proper strength of pickle and the length of time that the seed should lie in it.

VII. STUBBLE BURNING.—On the subject of stubble burning, in connection with the rust disease, the evidence is conflicting. From the prevalence of the rust last season it follows, however, as a matter of course, that the country is covered with rust spores to a far greater extent than usual, and that a large proportion of them adhere to the straw and stubble that lie on the stubble lands. These spores would necessarily be destroyed by the burning of the stubble, although enough would still remain in other places to spread the disease next year, should we have a return of last season's weather—a contingency, however, which, to judge from the past, is highly improbable. Still, as we have had rust in several previous years, although to nothing like so fearful an extent, the Commission recommend the burning of stubble, and the collection and burning of hedge clippings and other refuse matter, in which the seeds of the rust fungus will have found shelter.

VIII. EXHAUSTION OF THE SOIL.—Although not immediately connected with red rust, your commissioners have taken evidence with reference to the constituent elements of the soil in this province, and have to report that this important branch of agricultural science has been almost wholly neglected. Not more than half-a-dozen analyses of the soil appear to have been as yet made, so that science has so far lent practically no aid at all in instructing South Australian farmers as to the adaptation of their lands to the growth of particular crops. It is, in the opinion of this commission, highly desirable that an agricultural chemist and analyst be appointed, in order to carry on a regular and continuous system of experiments upon soils and manures, and also to conduct microscopical and chemical observations bearing on the subject of the growth and disease of our cereals. The vast tract of country annually cropped with wheat is being gradually robbed of its phosphates, and other constituents essential to the formation of a healthy growth; and as there is scarcely anything returned in the shape of manure, the grain-producing power of the soil is every year becoming less, involving a sure diminution of average yield, even though we may escape the plague of red rust. The appointment of an official agricultural chemist would not involve any serious expenditure,

whilst it would afford to farmers generally the means of obtaining reliable analyses of their wheat-lands at a nominal charge, thus guiding them in the choice of crops, and in the adoption of measures calculated to restore to the soil those fertilizing elements of which it may stand in need. It cannot be too constantly borne in mind that soils are not always to be correctly judged from appearance, even by the most practised eye. Land that appears rich, and which, as regards most of its constituents, may really be so, may, notwithstanding, be deficient in some one element indispensable to the growth of a vigorous crop, or of some one element necessary to render the other constituents of the soils soluble and capable of assimilation by the plants. This knowledge can only be acquired by chemical experiment. In other countries, and in the sister-colony, especial attention is directed to this branch of agricultural science, which, though pre-eminently necessary in South Australia, is neglected with an indifference as reprehensible as it is unaccountable.

IX. CONCLUSION.—On the whole, and especially as regards the red rust, your commissioners, though, necessarily unable to discover a specific remedy for a disease, the germs of which are universally diffused and brought into active vitality by atmospheric causes, have much pleasure in submitting to your Excellency the inquiry. If a positive cure is not discovered, several very serious mistakes are corrected; mistakes which would be costly in their operation and disappointing in their results. It is shown that the extraordinary ravages of red rust last season were not caused, as many asserted, by exhaustion of the soil; and, that therefore, expensive manurings—however beneficial in other respects—are useless as a preventive of rust. It is shown that there are some wheats hardier than others; the farmer thus having, in some small degree, the means within his own power of diminishing the extreme destructiveness of the disease by avoiding those varieties that are most easily overcome by it. It is also shown that, as the red rust is not propagated like smut, from diseased seed, shrivelled grain, of little value for milling purposes, will produce both healthy and abundant crops, under ordinary favorable circumstances of soil and climate. It is shown that agricultural chemistry has scarcely made a start as yet in this colony, although of so much importance to a proper system of cultivation. And finally, your commissioners hope that the attention which has been so widely directed in all parts of the provinces, not only to the sad visitation which has befallen it, but to the general condition and prospects of agriculture, will have the effect of leading to closer habits of observation, and to more careful experiments on the part of farmers themselves; and on the part of the Legislature and government to a corresponding appreciation of the claims and requirements of an interest which, without exaggeration, may be represented as the cardinal industry of the province, and the chief foundation of its prosperity.

JOHN H. BARROW, *Chairman.*
THOS HOGARTH,
WM. EVERARD,
JNO. CARR,
W. CAVENAGH.

Committee Room, Parliament House,
April 9th, 1868.

CULTURE OF THE SOIL FOR WOMEN.

We have often repeated the assertion that, if a woman has only the chance, it would be a pleasure to cultivate fruits or flowers for a livelihood, sooner than be held in irredeemable bondage to the needle. Still women are like sheep—hard to get out of the old paths, and to follow new leaders. Now and then instances come to our notice where women have made a forcible emancipation of themselves from city life, and hurried into the country with some rural occupation suitable for their tastes. Vineland, New Jersey, contains many such cases. A maiden lady of forty years went there, who had been a school teacher in Massachusetts for sixteen years. She got weary, as she said, of being a slave for others, and thinking a farmer's life more to her heart, came to Vineland and bought ten acres. She has been there three years and has five acres in good bearing condition. All the work, except the clearing of the land, has been done by herself and a boy thirteen years old; and from being weak she has become strong and healthy.

There is another lady, same age, formerly educated as a physician; but as her health gave way, she bought ten acres there, and, with the assistance of a boy only, she has been able to cultivate five acres nicely. Her health also returned to her.

There are said to be quite a good many widows there, who take all the care of large gardens, and make them literally abound in delicious fruits and beautiful flowers. One lady was observed one week-day painting her house, and the next Sunday filling the pulpit, in the absence of the regular minister, acceptably.

Last summer, in our editorial travels up and down the Erie railroad, we saw a corn-field, plowed, harrowed, planted, cultivated, and gathered, the whole work, from beginning to end, done by three sisters, and most excellent it was too.

We have known of many a happy husking-bee in which the ladies were the busiest helpers.

Yet in the garden, in the culture of fruits and vegetables, how suitable a field for woman's hands and woman's labor! The work is light, pleasant, a relief to indoor cares, and healthful; puts new bloom on the cheek, and gives her a place to call her own—her delight and pride.

How well women can manage large farms remains yet to be seen. We have known a few instances of success of this nature; but the limit to woman's activity can be bounded between the hedge-rows of a few acres. Better do a little well, than attempt to grasp too much and fail.