

cause of those damp unwholesome fogs which may often be seen to hover exclusively over moist situations, and which are a fertile cause of the spread of mildew.

The judicious culture of the soil, bringing it into such a state as is most favourable to the health and vigour of the wheat plant, has been found a good preventive. A writer in the Journal of the Royal Agricultural Society of England says:—"A general healthy state of the wheat plant without any over luxuriance of vegetation, is most likely to secure a crop against the attacks of the rust and mildew fungi; but whatever tends to render the plant sickly, whether it be excess of heat or cold, drought or wet, sudden changes of temperature, poverty of soil, over manuring, shade, &c., must be considered as a predisposing cause to these diseases." Another author remarks, "wherever the farming is of the best kind, and where drainage is good, the mildew fungus will not be found in any alarming degree. Just as the clean skin of animals is a defence against nauseous living parasites, so by an analagous method, the soil will be rendered free from the destructive fungi which cause mildew in corn. Improved domestic habits in our peasantry, are well known as tending to check the spread of epidemic diseases, and in the same way a better system of cultivation will avert diseases from our corn fields. Mildew was once more prevalent than it is at present, and doubtless its diminution is in a great measure to be ascribed to a better husbandry."

All varieties of wheat are liable to mildew, but some are more liable than others. The white is generally the earliest affected, and the bearded wheat the latest; the cuticle of the latter being of a firmer texture,* the openings of the stomata offer more resistance to the entrance of the sporules, and when any of these have entered, the harsh skin does not so readily yield to the outbursts of the fungi as they are being developed.

As a general rule *early sown wheat* is more likely to pass the time of blooming before the crop becomes attacked extensively. Late sown crops are green and full of sap at the very season when the moist chill dews of autumn are most rife, and are therefore more liable to the vigorous attacks of mildew. Excessive manuring, or any combination of circumstances which will tend to make a crop very rank, invites the attack and spread of mildew.

A clean state of the land is a preventive against mildew. *A foul state* is an encouragement. Weeds, especially those which come early to maturity, are all harbours for the mildew fungi, where they feed and multiply preparatory to severe and extensive attacks upon the wheat plant. "Mildew," says the Rev. Edwin Sidney, "will seldom prevail to any extent where the precaution of hoeing the land and keeping the surface clean is observed, but wherever there are many weeds on the land, the straw will be generally found more or less affected by it. The author can say from experience, that he has seldom, if ever, failed to meet with it in unclean lands."

The steeping of seed corn in various mixtures is of no benefit in preventing mildew; it may possibly be a defence against the sporules that are lying in the ground and prevent their absorption by the roots of the plants, but they can offer no resistance to the attacks of the puccinia when the plants are in bloom and are assailed externally.

A solution of common salt has been found beneficial in killing the mildew fungus, and thus acting as a cure for the disease. Hence wheat grown by the sea side has been found to be free from attacks of mildew. Well authenticated instances of the advantages of using salt as a cure for mildew are on record, the remedy has been tried by many and found to be successful. The proportion of

*In consequence of containing more siliceous particles in its composition.