

cultural friends as have experimented with coal ashes, and determine, if possible, if they have any real value in improving the soil or adding to its vigor or fertility. I find, with all our experimenting and investigating, that hundreds of the same problems that were discussed years ago still remain unsolved. Without presuming to call agriculture an exact science, still its progress is largely dependent upon scientific and careful research combined with practical measures.—*L. J. A., in Am. Cultivator.*

#### English Farming from an American Journal.

Take European farming, for instance, and contrast a simple fact or two with the same facts here. An English farmer rents his ground and pays from \$40 to \$100 per acre rent every year! In order to realize anything he must put on from \$5 to \$10 worth of guano manure or sulphites; and that, too, on every acre! When all things are considered, we do not believe he has any advantage over us, for where his chances are better in one thing ours are better than his in another. Yet English farmers actually get rich under all these disadvantages. True, his better and nearer market is offset by our richer soil, nominal rent or cheap lands. Our Western farmer of the Missouri valley, of all this region of Nebraska, Kansas, Iowa and Missouri, has no need to manure his soil. How, then, does the English farmer happen to succeed? Firstly, every square inch of his ground is thoroughly farmed and made to produce. No extra steps are taken; no useless labor is done. Second, such crops only are put in as pay best. Third, in feeding not one ounce is wasted. All is carefully harvested and cared for. In feeding it is ground and cooked. Fourth, and chiefly, none but the best stock is kept. They don't go out and buy common stock, half grown. They go slowly, but surely. They raise their own stock from the best blood. Finally, the English farmer takes some good paper, full of the latest farming knowledge, gathered from all sources.

#### Clover and Chinch Bugs.

From my experience with chinch bugs the last two seasons I am well satisfied that grain fields, if liberally sown to clover at seeding time—say from fifteen to twenty pounds of clover-seed per acre, salt at the rate of half a barrel, and plaster from 100 to 150 pounds per acre—no fear of chinch bugs need be entertained. The salt and plaster give the clover a heavy and luxuriant growth, so that it completely shades the ground, to the discomfort of the chinch bug. It is a frail insect, and cannot flourish except in the sunshine and with the ground clean about the grain roots. The salt and plaster not only make twice the bulk of clover that would naturally grow without it, but add from 20 to 30 per cent. to the grain crop. The salt hardens and stiffens the straw, produces a rank growth, and prevents blight, rust and mildew, and destroys all grubs and cutworms that come in contact with it. In 1876 I seeded three acres on one side of a ten-acre lot that was sown to Canada spring wheat with one bushel of clover seed and half a bushel of timothy-seed, well mixed. The result was it completely occupied the ground. After the wheat and grass were nicely up I sowed one half of the three acres with salt and plaster mixed at the rate of two bushels of salt to 100 pound of plaster. On the other half I sowed 200 pounds of plaster and no salt. The result was the half of the field that was treated with salt and plaster was much better than the half treated with plaster alone. The clover on the first was much of it headed out at harvest time and was a perfect mat. I cut it with a strong, light reaper called the Triumph, and one of the best machines, I think, manufactured. I kept the wheat from those three acres separate from my other wheat and threshed eighty bushels of a No. 1 article. There were no chinch bugs on the three acres, while the other portion of the field was nearly destroyed by them, as were all my other fields that year.

In 1877 I sowed clover seed on all my fields and treated all but one four-acre field with salt and plaster. The result was all the land thus treated produced a luxuriant crop of clover, a fine crop of grain and the finest possible pasture in the fall. In consequence of the last my animals all got fat, and I had a fine coat of manure on my fields to plough under. On the four-acre field, not dressed with salt and plaster, the clover killed out in spots, and the wheat ripened prematurely

in spots. On examination I found these spots black with bugs. But, on the whole, I got a fair crop of wheat from the field. I hold, therefore, that clover is the sheet anchor of success to the farmer renovating and enriching his land, and salt and plaster compose the great balance-wheel that will crown all his efforts. I mix the salt and plaster on the barn floor or in a box, at the rate of two bushels of salt and 100 pounds of plaster. When mixed I put it in my wagon-box, and, driving slowly over the field, apply the mixture from the rear of the wagon with liberal hand.—*N. Y. Herald.*

#### Smut in Wheat.

A correspondent in *Colman's Rural World* saved some heads of wheat for seed and took them home, but he noticed some indications of smut. He says:—

"When September 15th came, I rubbed it out, soaked it for three hours in a strong solution of sulphate of copper (bluestone), and dibbled in one row in the garden (soil, hillside, magnesian limestone clay). I kept the weeds down, and cultivated by hoeing both sides of the row. The result was a magnificent growth till near harvest, and then the smuttiest, rustiest and spottiest wheat I ever saw; and I felt like exclaiming, 'Put not your trust in bluestone, for in it there is no salvation' from smut, from rust, from spot. There are three diseases, or signs of disease, known by these names here, and, as I want to be clearly understood, I will try to describe them as I understand them.

Smut is that condition of wheat in which the beards turn into a black powder.

Rust is that condition in which the blades and stalk are covered with a red powder.

Spot is different from either. A whole row, or half the head, will be aborted, or empty. The other portion may be good.

There is one thing I noticed about smut last year for the first time. That is, smut is developed in the root before ever the head sees daylight.

Notwithstanding the want of success in this instance there can be little doubt of the efficacy of bluestone as a preventive of smut. It has been successful in innumerable instances. Still there may be and have been instances of failure in spite of every precaution. We have used strong brine, and the wheat then dried in air-slacked lime, and have found it to be very efficacious as a remedy against smut.

#### Climate of Canada.

The climate of Canada is little known outside the Dominion, yet sometimes an adventurous explorer visits this "Arctic region," and occasionally the truth is told. From an article in *Harper's Weekly* we give the following extract—a pretty fair sketch of the climate of the country:—

"In regard to the climate of Canada the most erroneous opinions have prevailed. The so-called rigors of the Canadian winter, which are advanced as a serious objection to the country, are frequently less disagreeable than the moisture and dampness that prevail farther south, while the heavy snow-falls are in every case a great benefit to the farmer. The spring, which begins in the middle of April, is a season of unusual beauty, and the summer is prolific in agricultural and garden products. From the head of Lake Ontario, round by the Niagara frontier, and all along the Canadian shores of Lake Erie, the grape and peach grow luxuriantly and ripen in the open air without the slightest artificial aid. The Island of Montreal is distinguished everywhere for the fine quality of its apples, and the Island of Orleans, below Quebec, is equally celebrated for its plums. Over the whole of Canada the melon and the tomato acquire large dimensions, and ripen fully in the open air, the seeds being planted in the soil towards the latter end of April, and the fruit gathered in September. As for the pumpkin and squash, specimens weighing over 300 pounds have been exhibited in the neighborhood of Toronto. Indian corn, hops and tobacco are common crops, and yield fair returns, while hemp and flax are indigenous plants, and can be cultivated to any extent in many parts of the country."

#### Late Planting of Corn Fodder.

Beware of late plantings. The weather is liable to be so dry and hot in August, not much more than half the corn planted will germinate, and that which comes makes a slow, sickly growth. Late in June or early in July is the best time to plant. Two or three cultivations are sufficient, as it soon shades the ground and thus checks the growth of weeds. The land is always left wonderfully clean and level after the crop is removed. Do not allow a severe frost to strike the crop before it is cut down. If you are compelled to let it lie on the ground for a few days after it is cut, frost can not hurt it, and unless the sun is very hot but little damage will be done. In winter a large heap of it can be hauled in at once, as the heating property of it at this season of the year is not very active, but it heats and sours more rapidly after it is cut up, and should therefore not be cut in lots of more than a ton and a half at a time. Slight souring only increases the cow's appetite for it.

#### Grasshoppers in the Far West.

As the season grows older the war upon the grasshoppers becomes more general all over the territory. In the Missouri valley the conflict has been long and fierce. The hoppers came out early and are now almost ready to fly, and should none of the winged armies from other sections come in the crops will be good, notwithstanding great damage has been done. On the Gallatin it was thought there would but few hatch out. The spring there being cold and stormy, the eggs did not hatch, but late advices inform us that during the hot sunny days of the past two weeks they have come forth in great numbers, and it is feared will yet destroy many crops. On other valleys they have not been so late in coming out, but have hatched at intervals; as fast as one army was vanquished by the industrious farmer another was ready for action. The damage already done, taking the territory throughout, will not reach a fourth of the acreage sown, and if the defence continues as successful the remainder of the season the harvest will be good.

#### The Wheat Outlook.

King & Co., of Toledo, take a rather blue look at the situation. They say:—

"The plethora of wheat in California seems to threaten as much embarrassment as does the crop we are soon to be called upon to handle, and the immense prospective shipments from the Pacific and Atlantic coasts, following close upon the present heavy movement and large accumulation now in English warehouses, together with recent failures of English grain dealers, are among the causes that are depressing values in all markets causes the effects of which will require war or very discouraging prospects for the growing English crops to even partially counteract in the near future."

A correspondent writes from the Paris exhibition: "When I state that agriculture is as brilliantly lodged at the exhibition as the fine arts or any branch of industry, this is equivalent to saying that, perhaps, never has the practice and science of agriculture been better presented for international comparison. While some of the exhibits may lack want of concentration, this will not interfere with exhaustive study; the visitor will have to traverse only a longer gallery. The specimens of English and American farm machinery are superb; here competition will be sharp; the workmanship and finish suggest instruments, rather than implements. A glance also at foreign manufacturers' lots reveals much progress, and much yet to be achieved."

It is said that Dr. Chevalier of Norfolk, England, observing some very fertile ears in a crop of barley, separated them from the rest, and, by sowing the grains separately, gradually propagated the variety which goes by his name. Its prolific quality has been tested by the extraordinary fact that 380 stems have issued from a single grain.

Lands in pasture upon which stock are grazed, are less liable to be over-grown by rubbish, and this is one of the strong arguments in favor of pasture and stock. Nothing "cleans up" a farm so nicely as sheep and cattle. When we learn to cultivate less land and do our farm work better, we will have more acres to seed to grass.