

the dog have their special fleas. No sooner has the binc outgrown its devourer, the beetle, than down comes the *hop fly*, and the leaves, in a week or two after their first advent, are covered with lice and *nits*, as the eggs are called. The leaves are sucked dry; the juices of the whole plant is extracted; and the excrements of the predacious villains mix with the moisture of the morning dews, and, falling on the leaves below, form 'hat sticky composition called *honey-dew*. The head of the plant droops, from want of sap, and dies; the lice, having by this time gone through their various changes, die, too; the leaves dry up, turn a rusty black, and fall off; and few, if any, of the bines survive to produce hops. Six or eight weeks suffice to produce all these ravages. One curious thing is, that a hopyard infested with aphides one year, is sure to be free from them the next. The Lady-bird and its progeny feed upon the aphids, and great is the joy among our hop growers when a host of these appears. There is no preventive against the attacks of the aphids: good cultivation and plentiful manuring will sometimes enable a hopyard to persist in yielding after it has done its worst, but sometimes from producing too much sap, the beast is enticed to remain longer, and less time is left for recovery. The effects produced by the aphids and its progeny are commonly known among hopgrowers as the *blight*.

*Mould*.—A disease which attacks the finer sorts of hops more than the inferior kinds. Mysterious in its ravages, as I have known one yard attacked and destroyed, while its neighbour yielded a full crop. Blight is general in its work, mould partial. When first Guano was used as a hop-manure, it was credited with all the attacks of the mould; but men are wiser now. The yard once seized upon by this dire enemy hardly ever recovers, and the provoking part is this; the disease being partial, as I remarked before, does not raise the price, as the more general blight does: hence, the extreme speculativeness of hop-growing. Since I left England, I hear they have a way of washing the hops, for the cure of this disease, with a solution of flour-brimstone in water. It costs, as may be imagined, a round sum, about \$15 an acre, but as this year it saved about 3 cwt. an acre in some yards, where the hops without its use would not have been worth picking and as these few hops brought \$150 per cwt., it was not an extravagant investment. But we are not likely, here, to suffer so fearfully as our brother hop-growers in the old-cultivated countries. I fancy the dissolved sulphur is pumped over the hops with a garden engine.

As an old brewer, I hope none of my readers will pick their hops until they are fully ripe. Green hops may attract the eye of a tyro, but an accomplished workman won't look at them—there are not many such in Montreal.—When the seed is brown and firm; the leaves of the cones have a brownish tinge at the edges; and the hand feels full if it grasps a few cones and presses them together; the hop are ripe. The seed should be abundant, not that it is of any use in brewing, but because the more abundant it is, the more abundant is the *lupuline*, or yellow powder, called by England brewers *condition*, in which the whole virtue of the hop lies. When the hops are ripe, the lupuline plentiful, and the whole well dried, the cones will almost vanish on being rubbed between the hands. *Unripe hops never weigh well*. It is an absurd mistake, but a mistake into which many people fall, to suppose that green hops impart less colour to our fine pale ales than fully ripe ones. On the contrary, there is more danger of colour from the former, though, in point of fact, if the malt is pale, the little colour hops can give the beer won't be perceptible to the most accurate eye. Some years ago, there was a discussion on this subject between the Kentish hop-growers and the London brewers, and the former carried their point, declaring, as a

body, that for the future they would pick no more unripe hops to please any one. The use of sulphur, too, is absolutely useless: it may hide defects, such as splotches on the leaves, but it can only deceive the eye, while the nose and the sense of touch will easily set the real judge right. While seeing that your hops are fully ripe, take care that they are picked before the frost attacks them. Like tobacco, ripe hops will bear a slight frost without injury, but in late seasons, I have seen hops in a heavy soil, in a too shaded spot, severely damaged.

ARTHUR R. JENNER FUST.

(To be continued.)

#### Cotton-seed.

Oakley, Arkansas Co.

Arkansas, February 1st 1883.

Dear Sir,—Yours of 25th January enquiring the price of seed is just to hand; what I intended to say was that the seed at the gin, on the plantation, was worth \$2 per ton—delivered on river bank in sacks, (sacks furnished by purchaser) \$3.50 per ton—this was until last August—since then cotton seed has gone up as they are scarce this year, and the fact that many families are using the oil in place of lard has created a greater demand—they are now worth \$6.50 sacks on the river. Nearly all the seed has been shipped to the oil mills, and it is now too late to purchase; next fall I can purchase them for you and have them loaded in a box car and shipped to you; as I suppose you have railroad connection with Chicago. But I doubt if it will be as cheap as the hulled seed unless you can utilise the hulls and lint—I feed the whole seed with the hulls on, simply because it is cheaper than to pay freight on meal or cake. But of this you can judge best, if you know the cost of a car from here to Montreal; but if we had a small mill that could be attached to the engine that drives the cotton gin, and the seed hulled and then shipped to you, it would pay better than whole seed.

If you wish any seed shipped to you next fall I will take pleasure in giving you all assistance I can.

I think the cake is quoted at \$18 per ton in Memphis and it should certainly be shipped to you for \$5 per ton.

I should like to have a copy of your journal—and if an occasional article from Arkansas will pay for it send it on and I will write up Cotton farming and negro labour in the south—and why the cotton States or cotton planters are poor.

I will be pleased to answer any enquiries that I can. If the sheep rot is still prevailing in England, I should like to see a lot of rotted sheep fed on cotton seed before the oil is extracted, as I have reason to believe it will cure the rot.

Yours,

J. H. MOORE.

Upon reading your letter a second time, I have thought that I had not sufficiently answered your letter—when I spoke of the price received by the planter in Memphis I meant, "nett," after paying freight charges, sacking, and hauling to river or rail road. The best way to ship would be in bulk by railroad—if shipped by boat, sacks will be necessary to ship in. The cheapest place to purchase is on plantations, and you had best send your order by 1st Oct.

I hope the cotton states will engage in sheep husbandry, as they can then feed their cotton seed to sheep and at same time manure their lands as well or better than if the seed were put on the land.

Yours,

J. H. MOORE.

Arkansas Post, Arkansas, February 7th 1883.

Dear Sir,—I saw an agent of the cotton-seed oil mills of