

Duluth wheat.—Can any one tell me if there is any difference between Duluth wheat and No. 1 Manitoba hard wheat? I ask this, because I see the former is quoted on the London market at about 12½ cents a bushel higher than the best white wheats; e. g.: December 1st; white wheats 34s to 38s per quarter (504 lbs.)—Duluth 41s to 42s. No Canadian wheat in the quotations up to the above date, and I hear there is no No. 1 hard to come.

Barley.—On the first Monday in December, of English malting barleys there were no choice or even fine descriptions offering: holders of such keeping them back in hopes of higher prices in the spring. Of foreign malting barley, there was no Saale to be had, but the next best qualities, Moravian and Hungarian, were worth 44s to 46s a quarter = \$1.38 a bushel of 56 lbs. From what I know of the malt-trade in my younger days, I have no hesitation in saying that a really fine sample of well harvested English Chevalier barley, well sweated in the stack, and well dressed, would not be turned away from any of the great maltings at Saffron-Walden, Ware, Bishop-Stortford, or Royston, even if the grower were to refuse to take less than 50s a quarter for it. The proprietors of these great establishments buy largely on account of the Burton brewers, and pay almost any price for really superior barleys.

And this brings me to a seriously important subject: the treatment of barley in this country, if we intend to compete with the finer growths of England, Moravia, and the banks of the Saale.

The average price of barley in the Glo'ster market on November 29th was: 680 quarters—£1.6.3 = 79 cents a bushel.

The judges, at the London Brewers' Exhibition, whose report I have just received, speak in very favourable terms of some of the samples of Chevalier and Golden Melon barley sent from Canada; but, speaking generally, they seem to hint at certain defects, as for instance:

1. Want of vitality;
2. Land not properly prepared or manured for seed;
3. Unequal ripening;
4. Allowed to lie too long on the ground after cutting;
5. Not sweated in stack.

(1) *Want of vitality.*—This of course means that a certain percentage of the grains will not grow at all, and, of the remainder, some, more or less in number, grow feebly.

In order to test this, I got, from one of the principal seedsmen in Montreal, a sample of Chevalier barley, grown from English seed imported last spring, and sent for sale by one of the best farmers on the Island of Montreal. Taking a handful of this, I threw aside all the evidently useless grains, and sowed 50 of the rest in a soup-plate full of moderately fine mould, covering all the grains with an equal thickness of earth—about an inch deep—. The seed-bed I kept fairly moist, and in a pretty constant temperature of from 62° to 65° F., night and day. Of the 50 grains, 28 came up equally on the 6th day after sowing, 6 more threw up the plumule on the 8th day, and the remainder—16 in number—perished from want of vitality. No English maltster would have bought the barley in question, unless he was a maker of "Brown-malt" for porter brewing. They are wonderful judges of the raw material, and can tell at a glance whether a sample will suit their purpose or not.

If this barley were used for seed, unless at least one-third more than usual was sown to the acre, the farmer would be greatly disappointed with the *brard*, as about 32% of it was absolutely useless for that purpose.

(1) *Land not properly prepared.*—Here, I must repeat what I have so often said: you cannot hustle barley into the

ground, give the land a couple of *scarts* of an old blunt-toothed harrow, and produce a first-rate sample of malting quality. To grow this grain in perfection you must have a deep, well pulverised soil. It may follow any crop except grass, but does best after a well manured, well hoed root- or corn-crop. The land should be ploughed a fair depth in the fall—say six inches—carefully water-furrowed, and the seed put in as early in the spring as possible, that is, as soon as the dust flies after the harrows. If you lay your furrows flat in the fall, you will have to plough again in the spring, but $\frac{1}{10}$ of the heavy-land barley in the East Anglian counties—the best malting barley in England—is grown on the stale fall-furrow, and receives no preparation but a grubbing and lots of harrowing.

Now, barley is of all grains the most susceptible of gratitude for kind treatment. You may muddle in your wheat in a roughish tith, but the land for barley should be, nay, must be, as fine as a garden. To produce a good sample, fit for the brewing of the East-India Pale Ale, the grain must come up equally, grow equally, and ripen equally; otherwise, when the maltster begins to deal with it, it will not germinate equally in the couch, and this inequality of growth will continue throughout the process, in the *pieces*, up to the very kiln; the effect being that the majority of the grains will have the *acrosipire* (*plumula*) only half way up the back, when the rest is beginning to show the green shoot protruding from the husk, causing, as is very evident, a certain loss of extract to the brewer who has to deal with it, as well as some other inconveniences, *quæ nunc præscribere longum est*.

To get all the grains in a seeding of barley to come up as nearly as possible equally, it is clear they must all be deposited at the same depth, and the preparation of the land must be such that each grain shall find itself surrounded by soil in the same mechanical condition as its neighbours. How can we secure these two desirable conditions? Only by the use of the grain-drill: therefore, the best way of sowing barley is to drill it in. The land should receive $\frac{2}{3}$ of its working before drilling, in which case the coulters of that machine will have no difficulty in penetrating to an equal depth. A grubbing, two harrowings along and two across the ridges, before the drill, and two tines along them after that implement, should be sufficient, and there being no cross-harrowing after the seed is deposited it will not be pulled out of its first bed.

Where there is no drill to be had, or where the land is too stony for its use, the barley should be put in with the grubber. Here, again, the land should be prepared by grubbing and harrowing before sowing. You will easily see that it is necessary to work the land until it is perfectly homogeneous, that is, until all its parts are equally penetrable by the teeth of the implement. It is not possible, however well we prepare the land, to deposit all the seed with the grubber at an equal depth; but how much less possible would it be were we to sow the seed on the unbroken furrow and then grub it in.

On heavy land, I should proceed thus: pass the grubber across the furrows once; harrow up and down the ridges until the land treads equally under the foot; sow the seed; grub it in along the ridges, and then finish with a stroke or two of the harrows in the same direction. Only, for goodness sake, see that your harrow-tines are long and sharp; don't neglect cross-harrowing *before* sowing, and never leave the piece until the foot can be drawn along across the ridges without finding one place more difficult to penetrate than the other.

(3) *Unequal ripening.*—If the above system of cultivation be followed out, you will have but little to complain of as regards unequal ripening. Of course, on very heavy land, where the ridges are, in my opinion, of necessity very narrow, the stalks on the centre of the ridges will have a tendency to ripen their grain sooner than those on the flanks. For this,