

every year. Mr. Hothersall began with only 20 cows, now, he milks 52. (1) Fanny a farmer on so small an occupation as this winning Lord Vernon's 100 guineas prize for the best herd of dairy-cattle in the Preston district, lying in the counties of Lancashire, Cheshire, and West Yorkshire. The judges, Messrs. Tisdale, Williams, Bell, and Algernon Fawkes, all well known dairymen, report "that in respect of (1) selection of cows, (2) average yield of milk, (3) the greatest yield of milk on trial day, (4) least number of acres per cow, and (5) greatest percentages of fat and total solids in the mixed milk of the whole herd, this herd was far superior to all its rivals in the competition." Rent, tithes, and rates—\$1690 00. The tenant is a regular working farmer, who knows his business and does it. He lost his father early; helped his widowed mother on a still smaller farm than the one we are speaking of, helped in the cow-house from early boyhood, and after school milked the cows every evening. I do not think that Mr. Hothersall would have been a much better farmer than he is, had he passed two or three years at an agricultural college!

Here, if a cow shows signs of milk-fever before calving, she has a trench or two of linseed-oil; if she is attacked with it after calving, a pint of whiskey, with six pounds of treacle and a quarter of a pound of Epsom salts are administered, a mustard embrocation being well rubbed into her loins.

Mr. Sherou, who won the second prize (1885) must find it rather a difficult matter to keep up his reputation, for there is a very large head of game on his farm, especially of hares, thirty-five of these beasts being counted by the judges in one field at one time.

On Mr. John Cropper's tiny 50 acre farm, (1st prize under 100 acres), the two best cart-horses out of the three kept, cost \$350.00 and \$385.00, respectively, apiece! One horse sometimes takes a load of 3 tons into Liverpool— $8\frac{1}{2}$  miles—and as everything is weighed as a rule, there is no guess-work about the load.

Mr. Learner, first-prize for farms under 500 acres and not less than 250 acres, does not single his turnips, &c., so cheaply as could be wished: after horse-hoeing, the plants are struck out ten inches apart, singled by hand, and twice hand-hoed, at a contract-price of \$2.50 an acre; but, as this is the only instance in all the reports of singling being conducted after my fashion, I thought it worth mentioning. The only example of uneconomical work I ever met with in Scotland was that the hovers single their turnips. With women at 20 cents a day, the practice may be tolerated, but in this country I am sure that the cheapest plan is to gap out the turnips with a 7-inch hoe, and let children single the bunches. Mr. James Drummond used to sow his mangels by dibbling at a foot or so apart, so that singling could be done at any time; but, when I saw his crop (1880), the seed had been dropped too thickly, and the young plants, in coming up, had entwined themselves round one another, so, upon the whole, I should prefer drilling. Mr. Learner says his land responds better to rape-cake as a manure for mangels than to any other artificial manure he has tried, and no wonder, as rape-cake contains about 6% of nitrogen = 7.284 of ammonia; so that the usual dressing of six cwt. of cake would give about 44 lbs. of ammonia to the acre, in addition to that contained in the farmyard dung. Nitrogen, my readers will recollect, is the specific manure for mangels.

As to management of grass-land, there is not much said about it in these reports, as, in England, every body is supposed to understand it; only, most of the farmers who compete seem to have a horror of mowing pasture land, particularly Mr. Proctor (2nd prize), of Downham Market, Suffolk, who assigns as one reason among others, that his predecessor

in the farm mowed a fattening pasture, with so deteriorating an effect that five or six years of heavy cake-feeding barely restored it to its former power of growth and condition. Pretty much what my brother related as the opinion of his Gloucestershire tenants; v. August number, 1887. An essential point in dairy management, according to Mr. Proctor, is that something nice should be given to the cows while being milked; it attracts their attention from the milkers, and they give down their milk more freely.

One good little Suffolk-poll of Mr. Proctor's gave 1200 gallons of milk in eight months, which realised at the station, on the farm, the agreeable sum of \$192.00!

Treatment of down-calvers seems to be, generally, something like this: About ten days before the cow is expected to calve, she is kept pretty poorly, and a trench with a pound of Epsom salts and an ounce of ginger, in beer, is administered, which dose is repeated about two or three days before calving. After calving, 3 ounces of sulphur, 2 ounces of nitre, and the yolk of an egg, mixed in strong beer, are given, and as much bran-gruel as she wishes to drink, say  $\frac{1}{2}$  peck of fresh bran to 3 gallons of water—the bran to be well scalded first. Heavy, thick bran-mashes are thought dangerous.

In cases of milk-fever, prevalent in Quebec as well as in England among heavy-milking cows, the bowels must be kept open; castor-oil, treacle, salts, &c., are used for that purpose. Then a free use of stimulants, old ale and whiskey, a bottle of each to begin with not being too much. One cow is mentioned, a pedigree polled Suffolk, that recovered and did well after taking 14 $\frac{1}{2}$  pints of brandy in 58 hours!!!

I have always been possessed with the idea that our French-Canadian farmers of heavy soil are right in ploughing their land into narrow ridges. A somewhat long experience of the best cultivation of soil of this description in Kent, Surrey, Sussex, Cambridgeshire, and Essex, taught me that, however well under-drained heavy land may be, it is seldom or never sufficiently so to be allowed to depend upon the drains for its rapid clearance from sudden heavy falls of rain. I see by the reports I have under consideration, that the practice of retaining heavy-land ridges in the old form still obtains in the Eastern counties of England:

"The arable is cultivated on the 9-foot stretch or ridge. After it was drained, an attempt was made to increase the width of the stretch; but experience proved the utility of a "hark-bark" to the "corduroy," as the late Mr. Mechi used to designate land so laid up." And we must not forget that, if the drained land of the East of England will not stand ridges of more than nine feet in width, *a fortiori* must it be dangerous to increase the width of the heavy land stretches in the undrained soils of this province. Tenacious soils possess the properties of expansion and retention in a much greater degree than the property of transmission, and hence, however well the land may be drained, when a great and continuous rainfall occurs, or when a great thaw converts the snow very rapidly into water, the above properties so prolong percolation, that unless an escape by the surface is provided, the young plants suffer, and the more soluble parts of the organic and inorganic matters contained in the upper soil are washed away into the nearest watercourse. A headland holding water being sown when too wet and so perishing the plants, is a circumstance that every practical man has observed; and something like this, though in a less marked degree, takes place on clay land when laid on wide flat ridges.

After ploughing, the horses are not allowed to travel on the ridges, but all the after-cultivation is done from the furrows. In autumn ploughing, in Kent, nothing is more common than to see at work three, and on the very heavy "London clay" formation, 4 horses at length in the furrow with a driver, and this to keep the team from treading—really