

shall poison the horse-pond, and then run down to enrich some stranger's meadow at the first flood. I hope in fifty years time, the farmer who does this will be considered insane. The idea of a man's throwing away his manure with his left hand, and with right paying money to bring it back again, all the way from Peru or Africa, seems too ludicrous for the nineteenth century.

So far as we have had experience, pigs, poultry, and horses, thrive uncommonly well in our yards and stables, and no doubt our cattle and sheep will do the same. All our horse feed is cut for the manger. Even our tares and green food are cut up with straw.

We contemplate clipping our bullocks when stalled in the warm stables, taking it for granted that nature provided their long winter coats for open fields, as a non-conductor of caloric, and that they never were intended for artificial confinement. The thermometer will regulate our ventilation. They will be groomed every morning, the same as horses. There is quite as much reason for removing from their skins the insensible perspiration, as for grooming a horse. Health depends on cleanliness, as much in an animal as in a human being. In a state of nature they would rub against a tree or fence. Having no such opportunity in confinement, we must do it for them. We shall shear some of our sheep before Christmas. I mean those kept warm and dry under cover: this of course is quite an experiment. It seems on the same principle as the bullocks, confinement with their warm clothing does not answer, so we shall try them without.

Some butchers agree with me that farmers often spoil the mutton as well as the fleeces, by keeping them on too long. Besides a long coat requires support all the winter, as well as any other part of the body.

The dairy, beer, wine, and coal cellars are all under the house, light, cool, and airy.

As to a good house, why, if our farmers are to be men of education and capital (which I hope they will be when they get Agricultural Colleges), I do not see why for a few pounds extra per annum, they should be deprived of the comforts of a proper residence. As my substantial brick and slate buildings are thought to be in advance of the age, I hope those who find fault with them will consider they are indebted for the next generation.

If board and thatch are so very durable and advantageous in Farmhouses, why not apply them in towns and cities? My own opinion is, those temporary erections indicate either poverty or miscalculation. If there is "philosophy in flying a pancake," why should there not be "an adaptation of means to the end" in planning and erecting farm buildings?

In conclusion, as some of my farming operations are on so very different a plan from the common routine of proceeding, I wish my farming friends to laugh at, but not to condemn them, till they have had an opportunity of seeing whether they answer or not. Should they, by chance succeed, I shall expect those who now enjoy the joke will

have the good sense to follow the example set them. If they do not, I shall certainly take care to remind them that they ought so to do.

I. J. MEECH.

4, Leadenhall Street,  
London, July, 11th, 1844.

# LETTER VI.

## THE DRAINAGE OF SURFACE WATER FROM HEAVY LANDS.

SIR,—

The very various and conflicting opinions as to what is perfect drainage, convince me that practice without theory, is like a ship without a compass, dangerous, uncertain, and expensive.—Having cut, during the past year, with good effect, sixty miles of drains, I annex a sectional representation, will describe its action, and state what I consider to be the true theories of perfect drainage.

My operation being different to the usual custom, I beg to submit my theories and practice for discussion, approval, or disproof. The question of drainage is far too important to remain longer in obedience. The Royal Agricultural Society will do an essential public good by deciding the point.

*Theory 1.* That in perfect drainage, twelve hours rain should percolate and leave the land, in less than twelve hours from the time the drains begin to act, the difference in time being equivalent to the proportion of the water the earth chooses to retain for its use by capillary attraction.

2. That to effect this, the subterranean area of porosity should nearly equal the surface to be drained, so that if the space to be drained were one square yard, the sides and top of the drain should present an area for percolation equal to nine superficial feet, minus the allowance for pressure.

3. That the continuance of water in the soil longer than it would remain by capillary retention, is injurious, chemically and mechanically, causing inequality, density, and sedimentation.

4. That the earth and roots will abstract from the passing water those gases for which they have an affinity, and in which they may be deficient.

5. That the form of drain should be deep and narrow, as affording the greatest area of porosity at the smallest cost, increasing the quantity of porous earth, available to roots—nothing animal or vegetable can exist in dense undrained subsoils.

6. That the material for filling the drains should comprise the greatest durability with the least power of capillary attraction.

7th. That where pipes are used, their material should be durable but porous; their form not round or square, but a very narrow and deep oblong, the object being to get a large area of porosity.

8th. That small, round, hard pebble stones,