

th degree contagious, whether I would have so or not, and that my future security was in prevention and not in remedy. I therefore separated all the remaining animals, in no instance being more than two together, and generally one in a place.

All were removed from the infected stables and put into quarantine. Isolated cases continued to occur for some weeks after this, but the spread of the disease was stayed, nor did a single case occur after this, which we did not think we traced directly to previous contact.

It is impossible to account for the first case of which I have spoken. But as the cow in that case was put into a sales stable in New York while waiting for the boat, though there were cattle then present, yet I have supposed it unlikely that diseased animals had been there, and had left the seeds of disease.

I can account for this case as we may (and I have no doubt it is sometimes spontaneous,) I am convinced it is very highly contagious, and that the only safety to a herd into which it has been introduced, is in *complete* isolation, and in my feeling, as convinced, there is *safety*.

If cattle were not suffered to return even to the barnyard, or to any part of the cattle barns, except as invalids were sent to the "hospital" stable, until late the next fall—i. e. the fall of 1861. In the meantime the hay and straw had been removed, the stables, stalls, cribs, and thoroughly scrubbed with ashes and water, painted and whitewashed with quick lime. I have had no case since, and am persuaded I should have avoided most of those I had before. I had reasonably admitted the evidences of the disease in the second and third cases.

E. P. PRENTICE.

Anti Hope, June 14, 1860.

Irrigation of Water Meadows.

In the following article, in description of what is known as "Bickford's System of Irrigation," copied from the "Bath and West of England Agricultural Journal." It will be read with interest by those in this country who have lands liable of being treated in this way:—

In commencing the construction of a water course a carriage gutter is cut along the line of the highest ground. This main gutter is for the purpose of taking the water from the brook, or other source from which it may be derived, and is to feed the smaller or irrigating gutters which it acts the part of a main artery. This gutter need not be laid out by the level. A slight inclination should be given to it, according to the nature of the ground, and the quantity of water which can be made available. If it can be had, a fall of 2 inches in a chain is convenient, but if need be a less rapid fall will

answer the purpose. The width of the main carriage gutter should be about 18 inches, and the depth from 6 inches to 1 foot. The dimensions must, however, in some measure be regulated by the quantity of water to be conveyed along it; the gutter diminishes in size as it approaches its termination, so that it runs out to nothing.

Immediately below the carrier should be cut a set of small, tapering gutters. The office of these tapering gutters is very important, as they secure the even apportionment of the water over different sections of the field, adjusting the supply in the way of a self-acting valve. Sometimes the end of a carrier itself performs this office, and is tapered accordingly.

The Small Irrigators.—A series of smaller gutters are cut below the main carrier (at different levels.) in the same general direction, in order to catch the water as it overflows from the carriage gutter through the small taper gutters. The distance between these gutters greatly depends on the shape of the ground; where it is undulating and uneven, more are required. These small gutters ought to be laid out quite level. I say quite level, subject, however, to a qualification to be named hereafter. The water as it flows over the land is collected in these small gutters, and as they are practically level, they again distribute the water evenly over the surface, when they become filled; were it not for these small gutters, the water would get into little streams and flow down along the hollows, instead of the ground being all equally covered, especially where the land has never been ploughed or levelled. I mentioned that the small gutters ought to be level—this, however, in practice, must not be carried out with mathematical correctness; in crossing any hollows, the gutter should be kept rather higher, say an inch on 33 feet run, or the water will gather in the hollow and overflow too fast at these points. On passing along projecting ground, on the other hand, the same difference should be made in the contrary direction, viz: an inch lower than the strict level, in order that that portion of the ground may receive its due share of the water.

Outlets, Driers, or Drawing-Off Gutters.—It is of quite as much importance to get the water off quickly as it is to get it on evenly. To effect this, gutters are cut in the direction of the inclination of the ground, i. e. in the exact same line along which the water would flow, if left to itself to run: if the gutters take any other direction, swerving too much to the right or the left, they will cut off the water from some of the land on one side or the other.

The Drying Gutters also act as Feeders.—The downward gutters also serve the purpose of feeders. Were it not for these transverse feeding gutters, the land nearest the carriage gutter would always have the first water, and thus receive the greatest benefit, and the lowest portion of the field would come the worst off. In order