

from B. Going on as before, you will probably make a line something like D E. You see by fig. 3 that the distance from C to E is too great, therefore, a subsidiary gutter, F G, must be inserted, to collect the water flowing from the farthest part of B C, to spread again over the interval between D E and B C. And in like manner, the subsidiary lines and I H must be drawn, always remembering that the distance between the gutters should not exceed thirty feet, or thereabouts, in this comparatively flat sort of work. The plough, with one steady horse, will complete this part of the job.

The next thing we have to do is to draw out the gutters to carry the water from the carriers to the gutters we have just made, and as nearly at right angles to them as possible: see fig. 1. In this plan, the curves of the lines form a series of loops, and the undulations of the meadow are mapped out by them as they go down around the hills, and up around the valleys. The water will be principally wanted about A in the figure. Taking care to go as nearly through the centre of the downward loops as possible, draw out, with the plough,

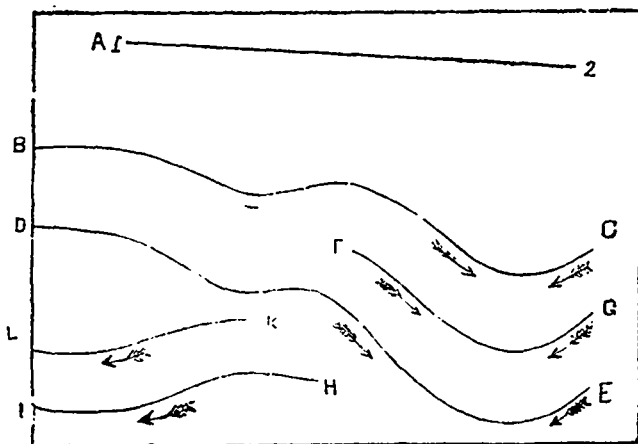


Fig 3

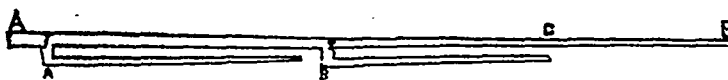


Fig 4.

the lines 1, 2, 3, 4, 5, and fill up the intervals with a, b, c. The intervals between these lines should not exceed forty-five, or, at most, fifty feet.

The next step is to bring in the water. First, clear the turf out of the gutters, and, then, with a spirit level, setting a mark every two rods, allow the carrier a fall of about 2 inches if the nature of the ground will admit of it: less will do, but the carrier must then be made wider in proportion. The carrier must be carefully, very carefully, drawn out; if the greater quantity of water be required at A, it must retain its width and fall to that point; but if the water is chiefly required at the beginning end, the carrier should taper away to a point and the fall be lessened.

Supposing we have not enough water to irrigate the whole of the meadow at once, we must divide it into two or more parts: see fig. 4, where A B is a carrier as far as c and a watering gutter from c to B; a and b are watering gutters taken out of it. Now, to water the part on the left hand of the plan fig. 4, all that is necessary is to put a stop in A B at the point 1; and so on at 2, to fill the gutter b. Stops may be made of turves cut in wedge-form.

Lastly we have fig. 2, wherein will be seen the meadow finished for irrigation. This sketch will, I think, give a better idea of the whole arrangement of a meadow than my laboured explanation. A B is a carrier from the stream, tapering towards B; a is an irrigating gutter, also tapering towards B; b, c, d, e, are feeders perpendicular to the level-gutters 1, 4; 2, 5; and 3, 6.

The gutters are not to be cut every year in the same place, but there will be no loss of space in making new ones, as the turf taken from them will just fill up the old ones.

As this, the best and most modern of all the plans of laying out catch water-meadows, and the one that will work with the smallest supply of water, is also the cheapest to put into operation, I presume it will be acknowledged to be the best suited to this country. I can't see how it can cost five dollars an acre to lay out, and the annual expense of clearing out the gutters, repairing pen-stocks, etc., must be very trifling. The two principal things to be attended to in irrigation are: no stagnation, and no rushing water to create furrows in the land.

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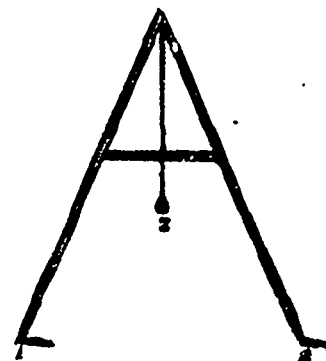


Fig. 5.

Hampshire Downes.

Well, the Hampshire Downes have again distinguished themselves at the exhibition of the Smithfield club in London. This time, the lambs exceed in weight the lambs of the same breed in 1881 by twelve pounds a head. Mr Morrison's wethers, under 22 months, weighed 319 pounds each. Thirty three lambs, about 10 months old, were shown, which averaged 204 pounds; and Mr Parsons' Hampshire Down lambs, little more than 9 months old, won the cup as the best pen of their breed, and the CHAMPION PRIZE as the best pen in the whole lot of long-woolled, medium-woolled, short-woolled, and cross-bred sheep. Next to the Hampshire Down lambs came the cross-bred Hampshire Down and Cotswold lambs; another proof, if proof were now needed, that the Hampshire Down ram is as pre-potent as the Short-horn bull; for the Cotswold sheep is anything but celebrated for its precocity.

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FERTILIZING FARM CROPS.

BY JAMES CHEESMAN, Montreal.

Agriculturists of Rome, in the days of the Old Empire, knew the use of barn-yard manure, and employed all they