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THE JOURNAL OF AGRICULTURE AND HORTICULTURE

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The Farm.

NOTES BY THE WAY.

A puzzle.—A writer in one of our exchanges states, that on 40 acres of land, that formerly only yielded 12 tons of hay, the exhibition of artificial manures raised the product to 80 tons of oat-hay, and, he adds, "these 80 tons, when fed, produced 200 tons of manure!" How this marvellous increase came about, the writer does not inform us. Was the gain all straw and water?

Bran and ashes as a fertilizer —In a large box I first placed two inches of leached wood ashes. Over this I spread a layer of wheat bran, packing it down with a maul. I continued until the box was full. The box was allowed to stand for two months when the contents was stirred up and applied to a field. It proved as valuable a fertilizer as barnyard manure or commercial fertilizer. It can be made at a cost of 40 to 50c per 100 lbs. It can be drilled in or applied by hand. For wheat it has no equal.—W. A. K.

As bran is quoted, in the same paper from which the above extract is taken, at \$18.50 a ton, we should think the dose of "fertiliser" mentioned in the paragraph must be more costly than therein stated. The farmer had far better give the bran to his milch-cows, and spread the leached ashes over his meadows; though, perhaps a dressing of 40 or 50 bushels of the ashes might grow a fair crop of turnips on light land.

Sour or sweet milk for hogs?—Which, in your opinion, is better for a hog, either for the promotion of growth or for fattening when combined

with fattening foods, sweet or sour (*separator*) milk? I have lately met some advocates of the sour milk theory, although they could give no reason for their belief.—B. T. S.

Potsdam, N. Y.

It would seem from experiments that sour milk gives better returns than sweet milk when fed to hogs. Cook, at the Vermont Station, as the result of a feeding experiment, makes the following statement: "It was evident within three weeks after the pigs were put on the separate diets that those having sour milk were eating their food with a better relish, were looking sleeker and growing faster, although both lots ate their food up clean." Henry speaks of "the evident superiority of sour over sweet milk for pig feeding"

Of course the above refers to a good clean sour milk, not an article from the usual foul skim milk tank of a creamery or to old milk of any kind.

The above question, as to whether sweet or sour skimmilk is the better food for hogs, was settled, at least 120 years ago, by the celebrated Arthur Young.—*Hoard*.

Arthur Young was an intensely industrious Suffolk farmer; industrious, not only bodily, but also mentally. He, and the well known Lord Chesterfield, the author of the "Letters," were the only two men who foresaw the advent of the Great French Revolution. One of the most interesting of the books written in the latter days of the last century, is Young's "Tour in France."

However, this has not much to do with either hogs or milk, so we may as well stick to our text. Arthur Young was so thoroughly convinced of the superior value of sour food for hogs over sweet food, that he built, in connection with his piggery, a series of ten tanks, each of which held a sufficient supply of food for his swine for one day, so that the hogs received no food that was less than ten days old.

We remember, too, in our youth, that there was always a large cask on wheels, holding about 200 gallons, standing under a spout leading from the scullery, which received all the kitchen-waste, dish washings, etc., and was taken to the farm about every ten days and emptied into a tank, where it was mixed up with a quantity of pollard and given to the pigs, who thrived famously on it. This "hog-wash," with green-meat of some kind, such as tares or vetches, and the grain left by the thresher in the straw that was thrown out of the barn daily (for the *flail* was still in use in

those days), was the sole food the hogs—from 30 to 50 generally—received till they were put up to fat, and they were always in good, thriving order.

Devonshire-cream.—As two of the leading lights of dairying in the province of Quebec have recently written to us, asking for directions for making Devonshire, or clotted, cream, we think it would be a good thing to give in this JOURNAL, a full description of the best way to set about making this delicious comestible, which is just as easily and perfectly concocted on a common cooking-stove, as in a creamery furnished with every modern appliance.

Apparatus.—All the apparatus needed is: a pail, holding about 6 or 8 quarts, made of tin; though in Devon and Cornwall the dairy-farmers generally use brass-pails; a *bain-marie*, i. e., a metallic vessel, to hold the water into which the milk-pail is to be plunged; a wooden spoon or stirrer of some sort; a stove or some other means of heating the *bain-marie*; a hair-sieve to strain-off the butter milk from the butter, and a pair of "Scotch hands," with which to form the pats.

As soon as the milk is drawn from the cow, strain it into the tin pail, in which it should stand about 8 inches high, and place the pail with its contents in a cool place for the milk to cream. The time this will take depends, we need hardly say, on the temperature: in ordinary cool weather, 24 hours may be an average time; in hot weather, perhaps 15 hours is as long as will be found safe; for, it must be borne in mind that, if the milk is in the least sour when heated, it will curdle and the process will be utterly ineffective.

Heating.—When the milk has stood long enough, place the pail containing it in the *bain-marie*, taking it up carefully to avoid mixing the cream with the milk. The water in the bath should be cold, and the temperature should be raised gradually. It would be well if at the bottom of the pail there should be 4 boxes to prevent it from touching the bottom of the bath; for, it may sometimes happen that, in the case of the fire being too fierce, the milk, and therefore the cream, may absorb a burnt flavour from the absence of the *water-cushion* between the two vessels.

Cooking.—The process of cooking, when the process is nearly concluded, must be carefully watched. When the cream assumes a brownish tinge on the surface, and there appears on it a ring the same size as the bottom of the pail, the operation is complete.

Concluding temperature.—We have generally found the temperature of the milk at the end of perfect work, to be about 165° F. Care must be taken not to let the milk boil, for if it does, the cream and milk will all get mixed together and the labor will be lost.

Finishing.—When the cooking is finished, cool the contents of the pail in any way you please, only, not too suddenly, and avoid shaking it. In, say 12 hours, the thick, comparatively dry, cream can be taken off the milk with an ordinary skimmer, placed in any handy vessel, and the churning done with a wooden spoon or any other handy tool. The butter generally comes in from one to two minutes even in winter. *With us it has never taken longer than 2½ minutes.*

The butter comes in grains.—We always wash it, after straining-off the butter-milk, under a stream of cold water, and it is then that the real reason why Devonshire butter keeps so well is shown; for the particles of the coagulated albumen may be seen to float over the side of the vessel in which the washing is being carried on, and, thus, one of the great enemies of the preservation of butter is got rid of.

As long as we farmed, we always made our butter in this fashion, which we learned at our dear old friend's, Sir Trayton Drake, Bart., of Nutwell Court, Devonshire. It pays in every way: the flavour of the butter is exquisite; the skimmed milk is, necessarily, perfectly sweet, and therefore, with the addition of a trifle of crushed flaxseed, excellent food for calves; the labour and uncertainty of churning are done away with; and last, the great point at which all dairymen aim is secured: the butter keeps.

We had hardly written the last line before *Hoard's Dairyman*, for March 30th, arrived. In it, we found the following article, which shows

that either the Editor of this paper, or Mr. W. C. Rockwood, knows but little of the subject on which he writes.

Anyone who likes cream—and who does not—should taste Devonshire cream. Where the name originated I do not know, probably in Devonshire, England, along with the famous breed of cattle which owes to that locality its being—but it is good, the cream—yes, and the breed is a good one also.

To prepare this cream set the new milk in pans in a cool place for twelve to twenty-four hours. It must not sour. Then place upon the stove or over a kettle of hot water for twelve hours longer. The cream may now be removed and is ready for use. It will be found thick and leathery, yet will melt in the mouth and has a peculiar indescribably rich and nutty flavor distinct from any cream not so treated. It is good on anything one would ever eat with cream and is not bad to take all by itself. The only trouble is that when you once find out how good it is the weekly output of butter is pretty sure to shrink alarmingly."

W. C. ROCKWOOD.

Michigan.

By the bye, we may as well mention that the Cornish folk rather object to the term "Devonshire" being applied to what is sometimes called "Clotted" cream, as they say that they, the dairymen of Cornwall, have used the same process quite as long as the Devonians. Just so, do the Guernsey folk say that the Jersey folk cannot grow the Chaumontel pear! Well; jealousy is a pretty constant failing among neighbours. All we can say is, that we have eaten both Jersey and Guernsey Chaumontel pears; and both Devon and Cornwall clotted cream; as well as the butter made from both; and should be very glad to taste either pears or butter again.

Alfalfa; i. e. Lucerne.—One of the subjoined articles from *Hoard*, must be wrong: Which of the two? We have always, as our readers know, earnestly advocated the growing of lucerne as a fodder-crop, not as a hay-crop on account of the extreme difficulty of keeping the leaf on: a trifling shower when the hay is half-made, will utterly ruin it. Vetch-or tare-hay is bad enough, but lucerne hay is still more difficult to make. If it must be made, cut it before one bloom has expanded, turn it once *very gently*, get it into cock,

with *hay-caps*, as soon as possible, and carry from the cocks, previously turning them upside-down for a couple of hours very carefully.

We learnt how to grow lucerne from our dear old farm-tutor Wm. Rigden, of Hove, near Brighton, Sussex, who grew about 50 acres of it for consumption in the green state in the stables and cowhouses of that well known watering place. We always recommend 18 to 20 pounds of seed an acre as sufficient, and there is no reason on earth why the grain-crop should be omitted with lucerne any more than with clover. In the second or third autumn after seeding, the land can hardly be too severely harrowed. Do not try drilling and hoeing, as they will not pay.

Raising Alfalfa.—*Ed Hoard's Dairyman*: I plow six inches deep, harrow it smooth, sow broadcast fifteen pounds of seed per acre, harrow once with light drag to cover seed. I don't sow anything with it; sow in the spring. If weeds grow up, when ten to twelve inches high, cut them down with mower and let them lay. As often as their growth interferes with the alfalfa, mow them down; it don't hurt the alfalfa. The first year it should yield one crop of hay, and two crops if on clean land. Have sown first of June and got two crops that year. If a good stand, it makes three to four crops every year, here. This is on bottom land where it is eight to twenty feet to water. Some patches on upland are doing well. Don't sow on land that overflows. For hay, I cut when in bloom. That cut in the forenoon is put in windrow afternoon, and in stack next afternoon. Hogs eat the hay like horses and cattle. Stock is in good order and not fed any this winter. Weather fine, farmers seeding; frost out, soil in good order—plows nice; roads dry and smooth, farmers happy.

WM. COLEMAN.

McCook, Nebraska.

Mr. Cook says, "have the soil well fertilized. Plow it as early as possible in the spring, then keep the disc harrow and cultivator at work, going over the field often till the time to plant corn, say, May the 10th to 15th. The last cultivation should leave the soil in "the pink of condition," the surface being very fine. Then sow 30 pounds of pure seed per acre. Much of the seed sold has foul seeds mixed with it. The seed may be broadcast or drilled. Do not sow any other crop with it. Give it full possession of the soil. Cover

it an inch or inch and a half, then roll it down, not too hard. Next go over the field with the weeder and slightly scarify the surface, to prevent the escape of moisture.

Household Matters.

(CONDUCTED BY MRS. JENNER FUST).

SPRING.

The crows are with us once more which is a pretty good sign that spring is not far off.

But even these wise creatures sometimes find they have come a little too early and have to put up with some very nasty weather, before they can settle down to domestic duties.

When cold snow, storms come after their arrivals who is there amongst us who have lived in a French settlement and have not heard the saying "bordée de corneilles" or Crows' day; and so we cheer up knowing spring is coming bringing with it the great pleasure of having flowers and green fields to look at again.

To the housewife it brings many worries in the shape of necessary cleaning to get rid of the many little pests that come into life at this time of year. The haunts of these creatures must be cleansed of all eggs so as to give no chance for propagating their species.

One of the most objectionable of these duties must be the cleansing out the haunts of the obnoxious bed-bug, and I hope the following directions will serve as a help in this very disagreeable duty.

THE BED-B—G.

This horrid pest nobody likes to deal with, yet it is no use shirking the work, for the longer the creature is left alone the more difficult will be the task of getting rid of it. They multiply and hide themselves in such secret corners that it is most difficult to get at some of their retreats. When every care has been taken, there is often found a small crevice where the enemy lurks in such numbers, and increase and multiply so quickly, that the work may all have to be gone over again.

It is just as well to take hold of the disagreeable task with a determination to conquer; there are people who say it is little good trying to get rid of this pest, but they must be people who have only half-done the work and lack the courage to

try again, the work once done well, with a little examination now and then, will soon relieve all anxiety; it is due to carelessness or want of the energy to attack in time, if these pests get the upper hand.

The bedstead to be cleaned should be taken to pieces and washed and dried well; every crevice must be examined and where this is too small for anything else to enter, take a piece of tape and, holding it by both ends, slip into the crevice and drawn it up and down, the smell will soon tell you if the enemy is there. Continue this till the tape comes out pretty clean. Now, armed with a pretty strong solution of carbolic acid, apply some of it with a feather to every crack and corner where the pest is likely to be.

Like the Boers in the present war, these pests lurk in their natural stronghold of defense, where it requires an eagle eye to find them out.

Turpentine, which is less dangerous than carbolic, will answer the purpose where the case is not very bad; it is wise to keep the former out of the reach of children.

TO FRESHEN FURS.

Furs often get rubbed and crushed. To freshen them up dip a clothes-brush in cold water and shake it as dry a possible. Brush the wrong way, shake well and dry in the open air beating it occasionally with a stick. Some kinds of fur need to be combed when dry, but it must be very carefully done or the hair will be combed out.

The above recipe might be used to great advantage by careless people who have hitherto neglected to put their furs in safe keeping.

A COUPLE OF LENTEN WHITE SOUP DISHES.

Soak three-quarters of a pint of white beans over night, next day boil them very slowly, with an onion, a carrot, a small bunch of parsley, thyme, a bay leaf, and a little pepper and salt. They should be simmered for about four till thoroughly tender, when the carrots and herbs should be removed, and the remainder rubbed through a hair sieve, return this into a saucepan, let it boil, add a small pat of butter, and a little hot cream, serve at once with fried croûtons.

MATELOTE OF EELS.

Skin the eels, cut off the heads, tails, and fins, split and clean thoroughly, cut into pieces about

two inches long, put into a stew-pan with sliced carrot, a small onion, a pint of stock, two glasses of claret, a little lemon juice salt and pepper to taste. Now, simmer without breaking for about twenty minutes; then lift out the fish and keep it hot while you thicken the sauce with flour and butter; let it boil quickly for about twenty minutes, removing all grease that comes to the top. When sufficiently thickened, strain into a clean stew-pan, add the fish and a few mushrooms, previously fried in butter; make all hot together, and serve garnished with triangular fried croûtons and slices of lemon.

SNOW EGGS.

Divide the whites and yolks of six eggs most carefully. Set a quart of milk on to boil and sweeten it, meanwhile whisk the whites of the eggs to a very stiff froth. Directly the milk boils, drop spoonfuls of the froth on it and poach them, turning as each side is cooked, lift them out when ready and set on a sieve to drain. Strain the milk, add to it the well-beaten yolks of the six eggs, flavour with vanilla or brandy. Pour into a double saucepan or into a jug; set in a saucepan of boiling water, and stir till the custard thickens and begins to coat the spoon. Remove the jug and stir till cool; then pour into a glass-dish, sprinkle the poached whites with coloured small sweets, and place them nicely on the custard. Serve cold with sponge cake or rusk.

HANDKERCHIEFS.

A lady is supposed to be known by two things, neat shoes and well-cared for gloves. Added to these, however, should be another important item, the handkerchief. Years ago it used to be the fashion for ladies to make and adorn their own dainty kerchiefs, and this fashion is being revived and young ladies are making their own handkerchiefs, even for the most dressy occasions. These lacy bits of work lie in a basket, where they are easily picked up, and furnish occupation for the fingers while a caller is being entertained. For a dressy occasion, a handsomely embroidered or a lace handkerchief may be used, but for ordinary wear nothing more elaborate than one fancifully hemstitched or trimmed with a simple Valenciennes edge must be carried. Monograms are not popular, since they are usually too heavy for the

delicate linen used in the up-to date article. Single letters are preferred, very small. A yard of fine linen, cut in squares, and neatly hemstitched at home, will make quite as many handkerchiefs as the same money would buy in ready-made cotton ones.

The Duchess of Northumberland possesses the most remarkable shawl in the world. It is made entirely from the fur of Persian cats, taken from the skins of thousands of pussies. The shawl is eight yards square, and is so fine and soft that it can be compressed into the space of an ordinary coffee-cup. It was formerly the property of Charles X. of France, and it is said that the weaving of it took several years.

EAR-RINGS.

There is no longer any doubt as to the return of earrings to favour. Their use is almost universal. As one glances about at the theatre or concert room where fashionable people congregate, one sees everywhere the little jewel gleaming in the ears of women. At present the one permissible form for this ornament is that known as the "screw," with a solitaire, sapphires, or pearl of small size, fastened securely by means of the little back screw. Occasionally earrings with two stones are seen, set one below the other, and fastened just below the lobe of the ear by means of the old fashioned wire-catch ; but these are few, and pendants are not countenanced as yet.

PRUNE SHAPE.

Soak a pound of prunes over night, having first rinsed them in two waters. Stew them with sugar. Soak half an ounce of gelatine in a gill of water. When the prunes are done, rub them through a sieve. Melt the gelatine, mix it thoroughly with the prunes, and pour the mixture into a wetted mould. Turn out when set. Whipped cream is an improvement to this sweet.

FITTERS.

Who does not love a tasty fritter, sweet as well as savory? Yet how often are they sent up to the table barely fit to eat? The charm of fritter cooking in its simplicity. Much depends on the mixing of a good batter, or cooking the fritters in boiling fat, such as oil, or lard, and in draining

them carefully on paper. For light fritters, a deeper pan than an ordinary frying pan is better, thus allowing at least two inches of fat when melted to fry in. This pan should be thoroughly clean and dry. Before attempting to fry your batter, ascertain that your fat is boiling hot by throwing into it a dice of bread. If this frizzles and produces air bubbles, your fritter may go into its bath. (1)

CHEESE PUDDING.

Melt an ounce of butter in half a-pink of milk. Mix together a quarter of a pound of bread-crumbs, two ounces of grated cheese, a saltspoonful of mustard, and a pinch of salt. Pour over this the warm milk, and add the beaten yolk of one egg. Whisk the white to a stiff froth, and stir lightly in. Pour the mixture into a well-greased pie dish, and bake fifteen minutes. This is a capital way of using up odd crusts of cheese.

Powdered charcoal, if laid thick on a burn, causes the immediate abatement of the pain. A superficial burn can thus be healed in about an hour.

Cascara sagrada has often been recommended for chronic constipation, fifteen drops of the best liquid extract three times a day. The reason this remedy has proved curative is because of its mild action, never causing the reaction, which does more harm than good. No account of usual diet has been given in this letter. Hot water between meals, and boiled figs, prunes, and apricots, at meal times, are better than medicine ; so are well cooked vegetables.

HOW TO TREAT A CUT.

Adhesive plaster ought to be the best procurable, and kept cut in strips ready for use. When it is necessary to use it to keep the edges of the wound together, we must be careful, first, to see that the wound is perfectly clean, and that no sand, glass, or grit is in it, which would cause festering and prevent it from healing. Never cover a wound wholly up with a piece of plaster, whatever be its size ; use long, narrow strips. Warm the plaster, and apply it gently but firmly across the wound, leaving a small space between

(1) The filthy flavour of all fried things, in the general run of cooking here, is owing to neglect this. Ed.

each strip to give exit to the lymph. Remember that sticking-plaster has no healing action in itself; the benefits derived from its use are of a purely mechanical nature. Clean cuts are better bound up with a linen rag, for sticking-plaster is no use until the bleeding stops. In cases of scalp wounds, the hair round the part must be shaved off before the plaster is applied.

The golden moments in the stream of life rush past us and we are nothing but sand; the angels come to visit us, and we only know them when they are gone.—George Eliot.

CRYSTALLIZED AND GLACED FRUITS.

We have received more than one inquiry as to the methods of preserving fruits by the French process, meaning glacé or crystallized, and believing the subject to be one of general interest *California Fruit Grower* here submits the following:

The process of preserving fruits in a crystallized or glazed form is attracting considerable attention at the present time. This process, though comparatively new in California, has been for years extensively used in southwestern France, the United States having been heavy importers, paying fancy prices for this product. The process is simple, but a certain amount of skill is required to bring about the best results and this comes on'y with practice. The theory is to extract the juice from the fruit, and replace it with sugar syrup, which, upon hardening, preserves the fruit from decay, and at the same time retains the natural shape of fruit. All kinds of fruit are capable of being preserved under this process. The several successive steps in the process are about as follows:

The same care in selecting and grading the fruits should be taken as for canning; that is, the fruit should be all of one size and as near the same degree of ripeness as possible. The exact stage of ripeness is of great importance. Peaches, pears, etc., are pared and cut in halves as for canning; plums, cherries, etc., are pitted.

The fruit having been carefully prepared is put in a basket or a bucket with a perforated bottom and immersed in boiling water. The object of this is to eliminate the juice of the fruit. The length of time the fruit is immersed is a most

important part of the process and calls for a most exact nicety and this can be learned only by experience. If left too long it is overcooked and becomes dry; if not immersed long enough the juice is not sufficiently extracted and this prevents a perfect absorption of the sugar.

After the fruit has been scalded and allowed to cool, it can be assorted as to softness. The next step is with the syrup, which is made of pure white sugar and water. The softer the fruit the heavier the syrup required. Ordinarily about 70 degrees, Ballings saccharometer, is about the proper weight for the sugar. The fruit is placed in earthen pans and covered with syrup, where it is supposed to remain about a week. The sugar enters the fruit cells and displaces what juice remained after the scalding process.

The fruit now requires careful watching, as fermentation will soon take place, and when this has reached a certain stage the fruit and syrup is heated to a boiling degree, which checks the fermentation. This heating process should be repeated as often as necessary for about six weeks.

The fruit is then taken out of the syrup and washed in clean water and is then ready to be either glazed or crystallized as the operator may wish. It glazed, the fruit is dipped in thick sugar syrup and left to harden quickly in the open air. If it is to be crystallized, dip in the same kind of syrup, but cool and harden the fruit slowly. This causes the syrup which covers the fruit to crystallize. The fruit is now ready for boxing and shipping. Fruit thus prepared will keep in any climate and stand transportation.—(*California Fruit Grower*).

The Dairy.

WINTER DAIRYING.

With butter selling for local trade at 30c. to 35c., many are the expressions of regret to be heard on all sides, from farmers who follow the short sighted policy of having all their cows calve in April and May. Butter at these prices means milk testing only three per cent worth one dollar a hundred. However, I find the average tests for March for seven years to be, 3.6, 3.7, 3.6, 3.3, 3.7, 3.9, 4 or an average of 3.7% for the whole, this quality of milk is worth one dollar and thirty three cents a hundred when butter is

fetching 32c. per lb. But then there is no doubt that these are famine prices, owing to last season's output having all gone forward to Great Britain, and perhaps partly on account of the snow blockade throughout the country, a little previous to time of writing (March 14th.). By referring back, I find the average price of butter during March to be (commencing in 1895) 22c, 25c, 22c, 23c, 22c, with an average for the five years of 23c, which is equivalent to 3 7% milk at one dollar per hundred pounds. For the same length of time (five years) I find that butter sold during January for an average of 22½c. per lb. and during February for 23½c. per lb. thus making an average during the three months of January, February, and March for five years of 23c. per pound. Referring once more to my books, I find the average test in January for the five years to have been 4 6%, February 4 4% and March 3 7% as already stated, giving an average test of 4 2% for these three winter months. This average test, 4 2%, with butter selling at an average of 23c. per lb. makes the average value of one hundred pounds of milk for the three months of January, February and March during the past five years to be one dollar and nine cents. This does not include the present winter with its extra high prices. Without going into details again, I would state that the average value of one hundred pounds of milk, for the three months of June, July, and August, during the same five years (commencing in 1895), to be seventy cents. From this it is seen that there is a difference of thirty-nine cents a hundred in the value of milk between the three warmest months and the three coldest months in the year, in favour of the latter and what is more, that these three summer months are those in which the largest supply of milk can always be looked for, whereas during January, February and March it is just the reverse. So much for butter and milk values. The next question is, can milk be produced during the winter within this thirty-nine cent limit.

In order to determine the cost of producing one hundred pounds of milk during these three summer months, it is necessary to assume the yield of a certain cow or herd of cows, at a given amount; for instance, a herd of cows all calving in April and May, should average 30 lbs. per day for June, 28 lbs. per day for July, and I have no doubt that during August, flies and dried up pastures would reduce the yield to 20 lbs. per day,

or an average per diem for the three months of 25 lbs. The average for the three winter months, would be approximately the same amount, for whereas cows calving in December would scarcely average as high as new milch cows on June grass, yet 28 lbs. per day should certainly be a fair average for such cows in January, 26 lbs. per day in February, and 24 lbs. per day in March according as the ration is kept up or decreased through feed running short. These estimates are certainly in favour of the summer milkers, as, to my knowledge, far greater variations take place during the three summer months than during January, February and March. Supposing then that the flow of milk from December calvers and April or May calvers is relatively the same (25 lbs. per day), during the three winter and summer months mentioned, it remains now to compare the relative cost of production of one hundred pounds of milk during these two seasons of the year. It is very evident that during the three winter months the composition of the ration will have a great deal to do with the economical production of milk; under ordinary conditions the following may be considered a fairly representative ration :

38 lbs. corn silage.....	worth	3½ cts.
8 " hay	"	2½ "
5 " straw (oat)	"	0½ "
6 " oat and pease-meal....	"	6 "
3 " wheat bran.....	"	2½ "
1½ " cotton-seed cake.....	"	2½ "

Average value of ration 17 cts.

Frequently the ration consists of more silage and less hay and meal, which would very materially lessen the value of the ration; but it is my experience that farmers at present are more likely to raise too little silage rather than too much, overlooking the fact that it is easily preserved throughout the summer and can be fed as an auxiliary green food when pastures are dried up and feed scarce. From these figures it is seen, that one hundred pounds of milk is produced at a cost of sixty-eight cents. (The daily ration costing 17 cents, and, an average production of 100 lbs. of milk in 4 days.) Cost of production in the summer depends on the local value of pasturage. Seven dollars for the season may be counted an average cost, that is one dollar and sixteen cents a month or nearly four cents a day, and 10 lbs. of green food per day throughou

August, valued at 1 cent, would bring the cost of production throughout June, July, and August to an average of $4\frac{1}{2}$ cents per day, so that 100 lbs. of milk produced in four days would cost 17 cts. which is exactly a quarter of the cost in the winter months, or 51 cents less.

Having, in a general way, averaged up and demonstrated the relative cost of production between cows calving in April or May and those calving in November and December, for the first three months of the lactation period in each case, it would seem at first glance that the comparison is very unfavourable to the winter calvers, this, however, is not the case, when we take into consideration what part of the ration goes toward supplying the wants of her own system before there is any milk production. Most authorities claim it requires two-thirds of a full ration to keep a cow in fair condition—her food of support—before any milk is produced. This rather alters the complexion of things, for when we consider that the spring calvers are generally dry or nearly so for several of the winter months, and yet require two-thirds as much food to support them, as the fall and winter calvers in their full flush of milk require, it takes but little perception to realize how much more profitable fall and winter calvers must be than spring calvers. Thus, allowing nine months as the lactation period in each case, the April calver will be dry some time in January, and has to be kept at a cost of 11 cts. ($\frac{2}{3}$ of 17 cts.) a day, for three months, for no return whatever; whereas, the November calver will be dry some time in August, and for three months would be dry and unprofitable at practically no expense, or say $2\frac{1}{2}$ cts. a day. But it would really be strange if the cow calving in November did dry up in August, and in all probability, if left to her own natural instinct, would go on giving milk right up to the date of her next freshening, (not that this is at all advisable) and I think at least a six weeks longer lactation period can be claimed for the late calving cow.

Now in the case of the Spring calver, we have a great flush of milk as she goes out to grass, which at the end of three months is considerably diminished, by various irritating and unfavourable conditions, such as driving, heat, drought, flies and lessening of feed both in quality and quantity, then, in September, comes an improvement of the pastures, which keeps the yield from diminishing further for a week or two, but this is short

lived, and what with cold nights and frozen pasturage the yield is so lessened that when the cow goes into the barn she rarely gives enough milk to pay for any feed beyond her essential food of support, and so quickly dries up and stands eating three times a day, with no return, for at least three months. In the case of the November calver, she soon reaches her full flow of milk, and with liberal but judicious feeding maintains a fine yield until Spring; then, when she goes on to pasture she flushes up again, and although giving less milk month by month, she has more favourable conditions at the end of six months (June) than the Spring calver has at the end of the same time (October), and will continue giving a larger quantity and this for a longer period than the latter.

It has been proved by numerous noted dairy-men that the late calver, may be expected to milk longer at a profit, and to yield considerably more milk in twelve months, than the Spring calver. Again, what farmer does not prefer to be free from dairy work in the busy harvest time, rather than in the late winter months, when his cows need attention whether milking or not.

The calves too, benefit by being born shortly after coming into the barn in early winter, and can be tended without much extra care, and are ready in the Spring to enjoy life and grow steadily in a little paddock by themselves, whereas the unfortunate Spring calf exists throughout the summer either in a stifling barn, or has a hard time dodging flies under a hot sun, on a skim-milk (often sour) diet, which is altogether unsuitable for such athletics. This skim-milk question is by no means an unimportant one either, as all creamery patrons are aware how much sweeter and fresher it is in the winter than in the hot sultry days of summer.

Of course the producer of milk for sale, if he has an even trade, may want to have about an equal number of fresh cows every month in the year, but the ordinary creamery patron will find it most profitable to have the majority of his cows calve in November.

It seems needless to rehearse the stock arguments on this subject, based upon the long experience of successful dairymen, but perhaps this brief recapitulation may be useful.

Very high authorities claim, that in actual practice four fall-fresh cows have been found to equal five which calved in the spring, in twelve

months product, and at about four-fifths the cost.

H. WESTON PARRY.

April 2nd, 1900.

EARLY FODDER CHEESE.

This month the majority of the factories in the older dairy districts will begin making cheese. High prices and a scarcity of supplies are the incentives to an earlier opening of the cheese factories than usual. While such conditions prevail it is almost useless to repeat the advice of other years, and urge that as little early fodder cheese as possible be made. Nevertheless we think such advice as sound this season as in any previous one, and believe that of our factories would cooperate, and arrange not to make any cheese till May 1st and to close on Oct. 31st each year, it would be better for both producer and manufacturer. Early fodder cheese is always of inferior quality to that made later on when the cows are on the grass, and considering the small amount of money it brings into the country, even though prices are high, is hardly worth bothering with. It usually has an injurious effect upon the marketing of the later product, and if its manufacture were discontinued, and the cheese season limited to six months, there would be less danger of the market being overstocked in any year, and prices could be better regulated.

However, as we have already pointed out, it is useless to urge any united action upon our factories in this regard when there is a good prospect of 11c. or over for April cheese. Patrons are clamoring for the factories to open and many manufactures will be compelled to begin making cheese several weeks earlier this season than last. Even buyers are anxious for the factories to open, as they see in present high prices, and the scarcity of stock on hand an opportunity for doing a good stroke of business. This is in striking contrast to the actions of these individuals other seasons, when they almost beseeched factorymen not to make any cheese till the cows were on the grass. While they may be very exceptional conditions this seasons, still we would like to see a little constancy shown by our dairymen in this regard. What we contend for is that, taking one season with another, and considering that we have reached our limit in the production of cheese for the British market, it would be much better for

the industry in the long run if the make of cheese, both at the beginning and the close of the season, were curtailed to such an extent that we would have no early fodder stuff or late fall cheese to export.

Then there is the question of profit. We fear the high price of cheese just now is proving a snare to many dairymen who are not looking to the future. Even at present prices for fodder cheese, it is a question whether it will pay farmers better than butter at this season of the year. Everyone who keeps cows should make provision for keeping up his herd, and he cannot do this better than by raising a few good calves each year from his best cows. If the value of the skim milk for calf-raising purposes is considered, we think it will pay our farmers to make butter till the end of the month at least, rather than fodder cheese at 11c. per lb. Where factories have been making winter butter, we think it would be good business policy to continue doing so for several weeks yet.

But whether the factories make cheese or butter every effort should be made to turn out an article of the highest quality. It is only in this way that our reputation for fine dairy products can be maintained and our trade with the Old Land made secure. When prices are high there may be a tendency on the part of the patron to neglect the milk a little, thinking that if the quality of the product is not of the highest it will bring a good price in any case. Such reasoning will only lead to trouble. Every effort should be made by both patron and maker to turn out the finest product, no matter what the price is. Our competitors know what prices are as well as we, and will not leave anything undone in order to capture the market from us.

Farming.

CHEDDAR CHEESE.

(Continued)

Conditions affecting the milk

Being anxious to discover what affect the drought was having upon the composition of the milk yielded at Vallis and Axbridge, where the Cheese School was held in 1891 and 1892, I wrote to Mr. Armstrong and Mr. Tilley asking for samples. These they very kindly forwarded. Unfortunately, the time taken in the transit of these samples was so long, and the heat so great,

that sometimes when they reached me they were curdled, and a full and satisfactory analysis could not be made.

The following are the results obtained, and they are interesting :—

Average Composition of Milk from Vallis, Axbridge, between 19th and 24th May, 1893.

MILK FROM—	FAT.	CASEIN, &C.	SOLIDS.
Vallis	3 08	8 86	11 94
Axbridge	3 16	8 96	12 02
“ in 1892	3 25	8 91	12 20
Butleigh	3 18	8 98	12 16

It is noteworthy that the milk from Vallis, which in the autumn, as shown by the results in 1891, is richer than that yielded in 1892 at Axbridge, or than that yielded in 1893 at Butleigh, was, in May, 1893, poorer than the milk at either Axbridge or Butleigh. The reason of this is doubtless the fact that high ground like that at Vallis felt the drought and heat more than the moor lands at Axbridge and Butleigh. In the milk from these soils there was remarkable similarity.

We can also compare the milk yielded at Vallis, Axbridge, and Butleigh for the later portion of the season during the three years.

It will be seen that the composition of the milk at Butleigh in September was again very similar to that yielded at Axbridge during the same month of 1892. The rapid rise in quality of the

The stock and yield of milk at Mark in 1894.

The spring of 1894 was exceptionally warm and early, so that when the work of the School commenced on the 1st of April, the cows, then only twenty-two in number, were out on the pastures, and remained out during the whole seven months covered by the observations.

The herd was not a special one, the cows, including those subsequently bought by Mr Peters, being ordinary dairy cows, mainly of shorthorn character. With these purchases the herd numbered fifty-three. From the 1st to the 21st of April they remained in the fields near the house ; on the 22nd of April they were sent down on the moor.

If we consider the nature of the soil, as shown by Dr. Voelcker's Report, the nature of the herb-

Composition of Milk at Vallis, Axbridge and Butleigh compared.

	FAT.	CASEIN, &C.	SOLIDS.
1891. Vallis, 1st week in September, 4—6	4 15	8 76	12 91
1882. Axbridge “ “	3 50	8 96	12 46
1893. Butleigh “ “	3 53	9 00	12 53
1891. Vallis, 1st week in October, 2—7	4 39	9 08	13 47
1892. Axbridge “ “	3 87	9 08	12 95
1893. Butleigh “ “	4 30	9 19	13 49

age, as shown by Mr. Carruther's Report, and the well-known fact that the year 1894 was exceptionally favourable to growth, we shall at once realise that upon this farm all the conditions were favourable to the production of a large yield of milk.

Table II. shows what this yield was, and that it was the highest yield which was obtained during the eight years, 1891 to 1898.

It is a somewhat remarkable fact, and well illustrates the desirability of care in the selection and breeding of dairy cattle, that the average daily yield of milk per cow at Butleigh, from 1st of May to the end of October in 1893, in spite of the exceptionally unfavourable season, was 27 lbs., and that exactly the same quantity, viz., 27 lbs., was the average daily yield at Mark from the 1st of May to the end of October, 1894, during a season when food was abundant.

Effect of food on the quality of milk.—But, while the average quantity of milk yielded daily was exactly the same both at Butleigh and Mark, the composition of that milk was very different. The milk at Mark was of exceptionally good quality, so that the proportion of cheese made from each gallon of milk was far greater than at Butleigh. Indeed, it was as high as it had been during the three preceding years, and was almost identical with the yield obtained from the cows fed on the rich hill pastures of Vallis, and it has not been since equalled.

It is often asserted that the quality of the food has no influence upon the composition of a cow's milk. (1) I do not believe in this theory which is utterly opposed to the universal experience of all practical men, and of all properly conducted experiments. The facts above stated afford striking evidence of the influence of food upon the quality of milk. The difference in the composition of the milk yielded at Mark as compared with that yielded at Butleigh in 1893, and at Axbridge in 1892, is well shown in Table I. on p. 80.

The stock and yield of milk at Haselbury in 1895.

On account of the size of the farm the stock was divided into two portions, so separated from one another that each lot was milked by separate milkers, and the milk brought home in different carts and trunks. In all there were, during most

of the time, seventy cows, of which thirty were on the pastures in the valley, and forty on the hill pastures. The former were, as is usual in Somerset, milked in the fields, and for the purpose of distinction, will be referred to as the field herd; the second lot were milked in a yard situated at and known as Rushy Wood, and will in future be referred to by this name.

The cows were well fed during the whole season, a liberal supply of artificial food being given during the time when the yield of the pastures was insufficient. The herd was made up, for the most part, of animals bred by Mr. Templeman from cows known to be good milkers.

Numbers of cows.—At the beginning of the season forty-one cows were in milk. The weather being mild, they were out on the pastures, but as the food was scanty, each animal received daily, in addition, four pounds of decorticated cotton-cake, and two pounds of a mixture of bran, ground cotton seed (containing 23 per cent. oil), and barley meal. On the 16th of April some silage was given to the cows. The use of artificial food was continued up to the 13th of May, being slightly varied during that period for reasons which will be referred to subsequently. On the 13th of May the cows were placed upon the summer pasturage without additional food.

In the meantime the number of cows had increased. On the 9th of April five were added, making in all forty-six, and on the 23rd of April the number rose to fifty-three. No more were added until the 13th of May, when eleven, mostly heifers, were brought into the herd. Two were added on the 14th of May, two on the 21st, and finally two on the 29th, bringing the total number up to seventy. There was no variation in this number during the season up to the 22nd of September, after which a few cows were gradually withdrawn.

Towards the end of the season, on account of the drought, the cows also received artificial food.

Milk yield.—The greatest quantity of milk was yielded on the 16th of May, and amounted to 198 gallons from sixty-six head of cattle, or exactly 3 gallons of milk per head. The average yield per head per day will be found in Table II, p. 83.

Influence of food on the quality of milk.—The effect of the high feed with artificials was to produce milk exceedingly rich in fat, (1) containing

(1) Note this, again. EN.

during the month of April on an average 12·65 per cent. of total solids, with no less than 3·70 per cent. of fat. With the cessation of this supply of artificial food in May the composition of the milk changed, so that the average amount of total solids was only 12·58 per cent., containing 3·39 per cent. of fat. The influence of food upon the composition of a cow's milk is strikingly illustrated by these figures, for I cannot conceive how the high proportion of fat in the milk during the month of April can be explained except by the fact that the cows were then receiving a liberal allowance of artificial food. The subsequent falling off in quality was not entirely due to the influence of food, but partly to the increase in the number of cows, more especially of heifers. From the end of May the composition of the milk gradually improved, as it invariably does, and the milk at Haselbury was richer than that yielded at the Cheese School during the previous three years.

(To be continued).

The Garden and Orchard.

(CONDUCTED BY MR. GEO. MOORE).

INSECTS INJURIOUS TO FRUIT TREES

(Continued, from the British Board of Agriculture leaflets).

There are several moths whose females are wingless, and they are often the most troublesome, crawling up the stems of apple trees in the autumn and early spring, and depositing their eggs in the cracks of the bark of the twigs and

THE WINTER MOTH.
(*Cheimatobia brumata*).



Winter Moth Caterpillar.

branches. From these eggs caterpillars are hatched in the early summer which eat the leaves

and blossoms, and when the conditions are favourable to their development, cause much injury to the crop; indeed, if they were allowed to commit their depredation year after year, they would kill the tree by the destruction of its foliage.

Amongst the moths, none are so destructive as the one we illustrate, the Winter Moth, and the Great Winter Moth.

Fig 1.



Male Moth winged; Female Moth, wingless.
Natural size.

In the beginning of October these moths come from chrysalids in the ground under and near the apple trees that were infested with caterpillars in the preceding spring and the wingless females crawl up the trees to lay their eggs. These eggs are placed in small groups in the chinks of the rind of the small shoots; they are of a pale green colour, changing to red. One female lays 150 to 200 eggs and fastens them to the branch with a sticky substance.

The Great Winter Moth lays a greater number of larger eggs which she sticks to the bark, sometimes in groups and sometimes in straight lines.

These caterpillars are hatched from these eggs just at the time the buds begin to burst. They are so small that it is difficult to see them when young, but when full grown are about $\frac{3}{4}$ of an inch long. They move from place to place by making loops with their bodies. They glue the leaves together to form a shelter, and then consume them when the circumstances are favorable. When they are fully fed, or if the supply fails, they let themselves down by silken threads and bury themselves in the ground.

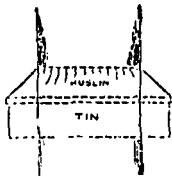
The moths appear in the mild weather of autumn and early winter, having emerged from the chrysalis, to which the caterpillar had been changed.

The worst seasons for caterpillars to cause injury are cold ones. When growth is slow, and sometimes, if not checked or prevented, they have been known to strip off all the leaves, leaving the tree as bare as in winter.

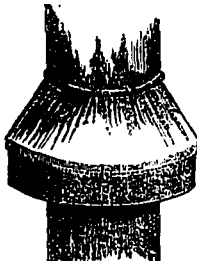
Methods of prevention.

It is quite important to adopt methods of prevention against these insects, and the first is to prevent the passage of the wingless females up the trees in the autumn and winter months. This can be done by placing sticky composition round the stem and renewing it from time to time as it becomes hard or dry.

Cart-grease, made from fat or oils and without tar, is considered the safest; it may be applied directly on the stems, but as constant greasing affects the bark, it is desirable to put it upon



Moth guard.

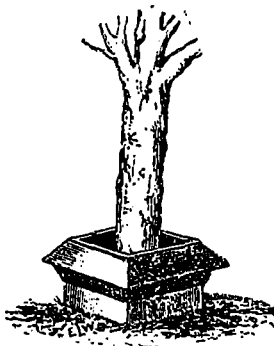


Section of Moth-guard.

wide bands of oil-proof paper and fasten it on with strings, in the first place scraping away the rough bark.

Tar and some manufactured compositions have been found to injure trees, and all such applications should be placed on bands of cloth or paper.

Banding should be done early in October, and the bands kept in good working order as long as the moths are seen about. Again in the spring, the bands must be attended to; if the male moths are hovering about the trees the banding should



be put into operation without delay.

Moth-guards are also made in various ways. Figure 1, consists of a girdle of tin, *c*, fastened so as to hang 3 or 4 inches out from the trunk of the tree, held there by a circle of fine sacking, *b*, and

secured to the tree by a cord, *a*, to which the sacking is sewn. The tin is smeared all round inside with some offensive substance, applied with a small brush, which causes the insects to drop to the ground as soon as they come in contact with it. Soft soap mixed with paraffin or carbolic acid is used for this purpose.

Figure 2; another form of moth guard is a square box sunk about 4 inches into the ground, and about 10 inches above the surface, leaving a space about 4 inches all round the tree. A zinc roof is placed over the box and under this, there is a small trough like the letter *V* 2 inches deep, also made of zinc. This is tacked on about 2 inches below the upper edge of the box and is filled with paraffin oil, into which the insects drop and are killed. This is the most effective guard, but very expensive.

Another very effectual method of prevention is clean and thorough cultivation of the soil beneath the trees; digging or hoeing late in the summer disturbs and destroys many of the chrysalids, and especially, if gas lime is dug or hoed pretty deeply into the soil.

A young orchard should not be laid down to grass for some years, and when it is so, the grass should always be kept cut off close or fed down by sheep. The surface of a grassed orchard should be raked hard, then rolled with a heavy roller, or the surface beaten, to smash the chrysalids.

Remedies.

Spraying: immediately there is any signs of infestation is very advantageous.

The solutions recommended for spraying trees infested with winter-moth are the following:

1. Extract of 6 lbs. of quassia; boil or soak in small quantity of water 6 lbs. of quassia-chips and mix with 100 gallons of water and 7 to 8 lbs. of soft soap;

2. Extract of 4 lbs. of quassia-chips to 100 gallons of water, 6 lbs. of soft soap and 5 pints of paraffin;

3. The extracts of 4 lbs. of quassia-chips to soft soap and 4 pints of carbolic acid;

4. 6 lbs. of soft soap, 2 lbs. of finely ground hellebore and a quart of paraffin, boiled and well stirred, add to 100 gallons of water.

Soft soap is dissolved in a tub with hot water. The quassia-chips are boiled or their extract obtained by soaking in cold water and put in a separate tub. Where paraffin is used it must

be well churned with boiling soap suds before it can be mixed with cold water.

These preparations, with the exception of hellebore, are not poisonous and do not kill the caterpillars directly, but make their food and surroundings so distasteful that they die of starvation and fall off the tree. Arsenical compositions, such as Paris green and London purple, are dangerous to live stock and are better avoided. If spraying with either of the preparations quoted above is commenced early and continued at intervals, there will be no need for the more potent poisonous preparations.

We cannot too strongly urge our readers who have fruit-trees to study these subjects. Keep a sharp look for these small but destructive foes and, adopt such means for their prevention or destruction as have been recommended by the highest and most learned authorities as the result of the most pains taking scientific experiments and data thus obtained.

(To be continued)

SPRING.

By the time this reaches our readers Spring, with all its promises and responsibilities, will be upon us. The spring-time is a season of rejoicing on the one hand, and of anxious activity on the other. Nature, after the long sleep of winter seems to be in a hurry to make up for lost time, and the cultivator of the soil, if he is to be successful, must try to keep pace with Nature. But, after all, this seeming bustle is systematic and without confusion, and this should teach us that, to get our work done promptly, system and order are most important. Early rising is imperative, but it is not only that which tells but the well spending of the day. Each day's task should be laid out beforehand, and every effort made to accomplish it in due time. There is an old saying that "time is money," but to the farmer and gardener, at this season, every minute is golden. In this rapid climate this fact has greater force than in latitudes where the changes of the seasons are more gradual. The success of many crops depends upon whether they are planted early. If we neglect planting for a single day when the right season arrives we run a great risk because we do not know what the next day may bring forth, perhaps it may be the first of a series of

showers which would make the land unfit to receive the crop but would have been the very weather which would benefited it, had it been planted only one day earlier. The most profitable crop of early pease I ever grew I planted before the frost was quite out of the ground; I was laughed at by my neighbours, but the laugh was on my side when I had the first green pease in Boston market, and realized five times as much for them as they were worth the following week. This may appear a little egotistical, but I mention the fact to show that a gardener, in the spring, should "take time by the forelock," study well his work, lay out a plan of action, be sure he his right then go ahead, and promptness and order will carry him through. It is surprising how much more the methodical man can accomplish than he who does not arrange his work, and can not make up his mind what to do next.

A farmer or gardener must always be on the alert to guard against the numerous foes which attack his growing crops; rust, blight, mildew, insects, birds and small animals, all seem to have conspired to render his efforts abortive. Happily scientific research and experiments have placed it within our power to conquer most of these enemies, and one can scarcely pity those who allow their crops to be lost because they are too lazy or too indifferent to adopt the necessary precautions to save them.

Transplantation of trees and shrubs must also be attended to at this season; many are lost by allowing the best time to pass before this is done: they are merely laid in by the roots and left until the hot sun is upon them, and then, on some unsuitable warm and dry day, they are planted. In consequence of this tardy and improper treatment, they die, and then the unfortunate nurseryman who supplied them has to take the blame of their failure.

And the cultivator's efforts must not relax after his crops are planted but he must always drive his work and not let it drive him, attend well to the aeration of the soil by the use of the hoe or the cultivator and kill the weeds almost before they have come to life; neglect is the fore runner of failure and disappointment, promptness and perseverance are the parents of success and contentment.

GEO. MOORE,



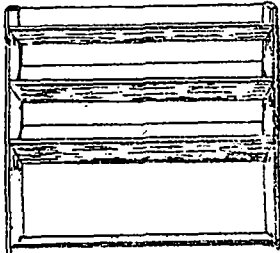
The Poultry-Yard.

(CONDUCTED BY S. J. ANDRES).

SPECIALLY FATTENED POULTRY.

(Continued).

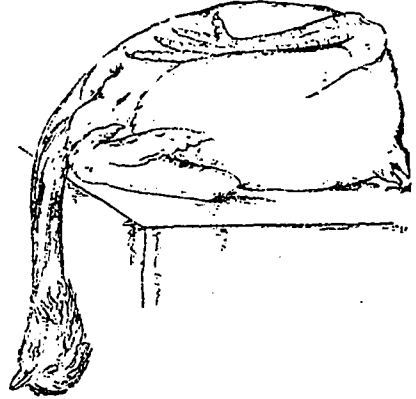
As soon as killed the birds are plucked, and in large establishments the plucking is done by one or two men, the pin feathering or "stubbing," as it is called, being done by girls or boys especially employed for that purpose; one "rough picker" being capable of keeping three or four "stubbers" busy. On one place which I visited there were twelve pickers and stubbers at work in the large killing house. The birds are picked and stubbed clean, and in many cases are "singed" to remove the hairs remaining after the picking, to give the carcass the cleanest possible appearance. Most of the specially fattened fowls, in fact, practically all that are seen in the London markets, have the breast bones broken down in order to give the birds a fuller breasted, plumper look, and after this breaking down the stern is flattened by pressing it against a wall, the "pope's nose" being upraised, and then the carcass is laid in the shaping trough, breast downwards, with the neck and head hanging over the front.



Shaping trough.

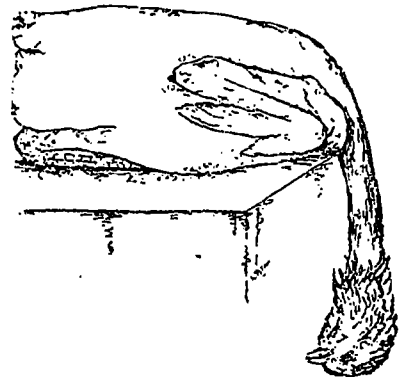
This trough is shaped like a shallow "V," as shown in the illustration, which with the illustrations of the shaped Sussex fowls, we have borrowed from Mr. Brown's book on poultry fattening. The birds are laid in these troughs, pressed closely together, a glazed brick or some other clean, heavy weight pressed up against each one as added, to hold them firmly in place until the trough is full, when a board, four or five inches wide, is laid on top of them, and twenty or thirty pounds of weights are put on the board.

In this position they are left several hours to cool thoroughly and become "set" then are removed, packed and shipped to market. It will be seen by the illustrations that the birds are put upon the market slab with an attractive appearance, which makes them very saleable.



Shaped Sussex fowl.
(Breast upwards).

Everyone who has studied our markets knows that appearance has a strong influence upon sales. An attractive appearance being the key which opens the pocket book, hence, anything which improves the appearance of our product increases its saleability.



Shaped Sussex fowl.
(Breast downwards).

This "shaping" of the choicely fattened poultry, seemingly of no (or of minor) importance and certainly costing comparatively nothing, makes a decided difference in the saleability of the product, and enhances the price, hence, all such aids to improvement should be studied by the market-poulterer. The shaping troughs might be considered a bother by a thoughtless individual, but

there must be a place in which the birds can be placed as fast as dressed, where they can be left to cool,—left until the animal heat is wholly gone out of them. The shaping troughs furnish that place, and being left in them until the flesh is cold, will “set” the carcass which will retain its plump, attractive appearance.

There are some minor tricks of the trade, such as slightly drawing the meat upon the under side of the body forward towards the breast, to increase the appearance of plumpness, which must be done carefully so as not to break the skin if done at all; and some fatteners in England strike the flesh a sharp blow upon the breast and back, while it is still warm, to make it puff up and give an appearance of greater plumpness. This last would be of no value whatever in America, where birds are sold by weight, and the practice cannot be recommended, since it savors of dishonesty. It cannot be too strongly urged upon poultrymen to be free from all such tricks, since the better reputation which their products gets upon the market the better and more staple the prices obtained.

THE DETECTION OF LAMENESS IN HORSES.

Among the many things which the intelligent horseman ought to know is, not only when a horse is in good health and condition or when it is sick or unfit for work, but also when it is lame and, if possible, where it is lame, as well as the cause of the lameness. This is indeed expecting a great deal from him, and in truth there are not many amateur horsemen who are privileged to possess this knowledge to such an extent as to meet every requirement; but the more he knows the more likely is he to keep his horses in health, to avoid being imposed upon or misleading others, and to be in a position to apply the stitch in time when anything is amiss and expert assistance not immediately available, say ‘The Rider and Driver.’ These remarks are more particularly applicable to cases of lameness, as the ability to distinguish unrhythmical from rhythmical movement of the limbs is often of great moment to those who employ horses, and, only in a less degree, is the faculty of being able to fix upon the ailing leg or legs, and to detect the seat and cause of imperfect movement.

It is more important for the rider to know when a horse is lame than to be absolutely certain as to the part affected or the cause, for an expert can generally be trusted to discover this; whereas, if an animal suddenly becomes crippled and continues to be worked without this being perceived, great, and sometimes even irreparable, mischief may be the result.

Lameness has been defined as the manifestation, in the act of progression, and by one or more of the limbs, of pain or weakness, inability or impediment in movement. Though pain is usually a cause of lameness, yet a horse may manifest irregular or halting movement of the limbs during a motion without experiencing pain. There may be stiffness of a joint or malformation of a limb, impeding movement, and yet no evidence present of any pain being suffered. For instance, the nervous affection of the limbs popularly known as “springhalt” is a kind of lameness, and yet there is no sign that it is in any way productive of pain. It is most important to remember this, as very often people who are not acquainted with horses or their diseases, imagine than an animal must be suffering if they see it limp or move unevenly, and very often unfortunate drivers or owners of horses are unjustly punished for cruelty to them because of this mistake—some deformity of a limb preventing its being used as freely as the other legs, but causing no more pain than a club-foot or a stiff knee does in a man.

Lameness may be only temporary, and be due to local causes, without disease being present. A wound, or bruise of the leg or foot, or even a stone lodged between the shoe and sole or about the frog, may induce limping: or lameness may be permanent from chronic disease, or the effect of such disease. Even weakness of muscle may cause lameness in one or more limbs, and the opposite of this condition, such as cramp of the muscles, will produce the same result, as will also partial or complete dislocation of a joint—that of the stifle, for example—in which there is complete inability to draw the hind leg forward.

An examination of the limb by eye and hand after movement will in all probability confirm and complete the information acquired by observing the horse during progression. It must be stated, however, that a knowledge of the anatomy of the limbs is of great value in the diagnosis of lameness. It is always advisable to have slight

cases of lameness, about which there is any doubt, tested at a trot upon hard ground; a horse which will then show inequality in movement may go apparently sound on a soft surface.

A lame horse in walking or trotting always endeavors to avoid increasing the pain by throwing as little weight as possible on the affected limb. Therefore, if a fore leg is the one amiss, when the foot comes to the ground the head is thrown upwards; if it be a hind leg the quarter of that side is raised when the weight falls on it. It is wrong to say that a horse "drops" on the lame leg. Lamenesses are best detected when standing behind or before the animals in motion; in front of them if the fore limbs are to be observed, behind them if the hind ones are to be scrutinized. Then, having ascertained the lame leg, careful observation of the manner in which the leg is moved, the observer standing on that side, will give an idea as to the region where the cause of lameness is located, and a manual examination will generally complete the diagnosis.

Ex.

The Flock

BREEDING AND GENERAL CARE OF MY SHEEP FOR THE WINTER FAIR.

(BY JOHN RAWLINGS, RAVENSWOOD).

The breeding and feeding of the three ewe lambs that won 1st prize, and the five lambs that won second place for the "Prince of Wales" prize at the Provincial Winter Fair is as follows:

Our flock of registered *Costwolds* was founded in 1886, when we purchased four imported ewes from Mr. James Snell, Clinton. On these ewes we used such sires as Grey Face, 7865 (bred by Charles Gillett, England, and imported by J. C. Ross, Jarvis, Ont.), Ross 7866 (also bred by Charles Gillett, and imported by J. C. Ross), a prize winner at Toronto and London, and also in the States, and Standon, 4117 (bred by John Snell & Son, Edmonton, out of imported stock). In 1892, we added to our flock four shearling ewes from John Snell & Sons' flock and out of imported ewes. After this we used Charity, 4794, bred by J. G. Snell & Bro., an excellent stock sheep and the sire of some of the best ewes we have. Royal

Topin, 8974; Commander, 8875; and Blucher, 8376, especially, was an all-round mutton sheep, carrying the best fleece of wool we ever saw on a Cotswold sheep. In 1896 we purchased from Mr. S. Coxworth, Whitby, Ont., Brilliant, 4491, imported by Joseph Ward, Marsh Hill. He is the sire of a great many prize-winners, and has left stock of good points in our flock. Our present stock ram, Lord Walton, 8771, the sire of the lambs exhibited at London, was imported by J. G. Snell and bred by T. Gillett, England. He was never beaten in the show ring as a lamb, and is a wonderfully good getter. As regards the feeding and care of our lambs, we always aim to have our ewes in a good, healthy condition when the lambing season arrives, by giving them all out-door exercise necessary, with plenty of good nourishing food and pure water. As soon as the lambs arrive we build a creep in the sunniest part of the sheep barn, where the lambs soon learn to lie. As soon as they are old enough to eat, a trough is placed in the creep with oats, bran, and a little oil-cake, a second trough with pulped roots, and a crib with the very best clover hay, lucerne, or alfalfa, preferred. As soon as warm weather comes, we supply them with good, clean water, which they relish very much. When the sheep are turned on the pasture in the spring, we build a creep in the field and feed the lambs once a day with oats, bran and oil cake. We wean our lambs about the 1st of July, after which we feed grain twice a day. The ewe lambs we had at London were turned out in a good clover meadow and *rape* about the 1st of August, and received no grain till the 10th of November, when they were placed in an acre plot of lucerne and *rape* mixed and fed four quarts of bran, oats and oil cake mixed, equal parts of each, twice a day, with all the lucerne hay they could eat.

BREEDING, CARE AND FEEDING OF MY PRIZE-WINNING SHEEP.

(BY JOHN CAMPBELL, WOODVILLE).

Six *pure-bred Shropshire* and nine grades, sired by registered Shropshire rams were entered by me. Starting with the shearling registered wether, Blue Bell, 112222, winner of the second prize in class 16, section 2, and also the second in the Shropshire Special Competition, whose breeder

was Mr. James Bole, Woodville, Ont. The dam was Canadian bred, tracing several generations back to imported ancestry. His sire, bred at Fairview, was Tantalizer, 59972, a son of Royal Doncaster, 30989, winner of the second prize at the Royal Show in England, and fourth at the World's Fair, Chicago.

The Model, 133210, a wether lamb, bred at Fairview, winner of first premium in class 16, section 3, first in the Shropshire Special Competition, and first in pen of five lambs, winning the Prince of Wales' prize, was sired by The Best Type, 88775, a son of Newton Lord, 30983. The latter won at the World's Fair, Chicago, five first premiums, including the championship for the best Shropshire ram of any age in the show. The Best Type at Toronto in 1897. won first place with one of England's most noted Royal Champion's in the ring, viz., Darlington.

The Model's dam, Campbell's 776-99634, was bred by Mr. S. Nevett, England, and won 1st in pen of five at the Shropshire Show in 1897. My registered ewe lambs, which won 1st in pen of three, class 16, sec. 5, were bred at Fairview. Their sire was Newton Lord, and the dams were Campbell's 664,98582, sired by Fair Star (5177) ; Campbell's 666,98584, by Fair Star, and Campbell's 582,77180 by Settler 58985.

The two dams by Fair Star, one of England's most noted sires, were bred by Mr. A. E. Mansell, Shifnal, England. The third dam was bred at Fairview. Her sire, Settler, was bred by Mr. Daniel Eardley, of Market Drayton, England. Settler sired Campbell's 540, 68735, winner as a lamb of the grand sweepstakes at Guelph Fat Stock Show in 1894. My fourth ewe lamb, sired by Newton Lord, had Campbell's 667,98585, for dam ; she was bred by Mr. A. E. Mansell. Her sire was Montford Dreamer, another of the noted stock rams which so largely helped to make Mr. Mansell's flock famous, in that he sired for him two rams which won the championship at the Royal, besides other winners of less renown. The last mentioned ewe lamb, with my winning pen of three ewe lambs, and first prize wether lamb—The Model—formed the pen of five which won the "Prince of Wales'" prize offered for the best five lambs of any breed. The awarding committee of four who were unanimous in making the award were : a breeder of Oxfords and South-downs, one of Oxfords, another of Cotswolds, and one of Leicesters. All were bred by neighbors

who used well-bred Shropshire rams in their flocks. My first prize yearling wether in class 29, section 2, was sired by Fairview Sort, 99 519, a son of Newton Lord and Campbell's 508,56994, a first premium ewe at Madison Square Garden Show, New York City. The dam of the wether was a good common Leicester grade ewe. Besides winning in his section, this wether won first in the Shropshire Special Class.

The grade yearling ewe, winner of first place in class 29, section 1, was sired by Newton Lord. Her dam was a high grade Shropshire ewe, bred up from a common grade of some twelve years ago by the continual use of high-class Shropshire sires. This winning ewe later on was declared the best grade sheep in the show.

The wether lamb, winner of the second prize in class 29, section 4, and first in the Shropshire specials, was also sired by Fairview Sort. His dam was a Shropshire grade, bred from a common grade ewe and by a Shropshire ram.

The pen of three grade wether lambs, class 29, section 3, winners of second honors, were sired, two by Fairview Sort, and one by Harrison's 235,61700. Their dams were ordinary grade ewes, except as stated in the description of the single lamb in class 29, section 4, which was one of the pen of three.

My second premium ewe lamb in class 29, section 5, was sired by Fairview Sort, her dam being a good common grade ewe of no particular breeding. I have given the breeding in detail in order to show conclusively how important the use of first-class sires is in the flock, and how they will transmit their good qualities, even where used on grade ewes of mixed blood and varied type.

How they were fed.—During the first three weeks of the young lambs existence the growth and development were maintained by feeding the mothers liberally with milk-producing food. Clover hay cut when in full blossom, with a sufficient supply of pulped turnips, bran and crushed oats, all mixed together a few hours before using, kept up a flow of milk such as is essential to the rapid growth of the lambkins. Later, the use of the creep and the regularly cleaned out trough, in which finely pulped turnips, with whole oats and bran spread over the turnips, were placed fresh twice daily caused a steady growth of plump form which is much easier maintained than regained if once lost. I found a roomy, sunny yard for lambs to take exercise in very helpful in late

winter and early spring weather. When they were turned on grass the roots fed were gradually lessened in quantity, and a few peas were added to the oats and bran, to which they had access every night when the flock was yarded to save it from dogs. After weaning in July, aftermath and rape were ready for their use. Every morning and evening they had a run on rape with a few hours on the aftermath between. Tares were ready to cut for feeding inside at noon about the middle of July. A small feed of the mixed grain and bran, to which about five per cent of ground flax seed was added, was given night and morning. No more than half a pound was allowed each lamb at first, and when the cool fall season set in, a third feed of the same quantity was given at noon. When rape and pasture depreciated in succulence, turnips were ready for use instead at the rate of some eight pounds to each sheep and lamb, divided in three feeds daily. A very small amount of milk, not more than a pint to each lamb daily, was fed during the two months preceding the show, but I cannot say that it resulted in any noticeable improvement, comparing them with the grade lambs which did not come into my possession until August, and had no milk after weaning at that date. The latter appeared to fatten more rapidly than the former when fed altogether in the same pen. Before I purchased the grade lambs they had been pastured throughout the spring and summer on the roadside, and had no feeding except what they helped themselves to.

The yearlings in my exhibit were, last year, fed similarly to the lambs, as stated above, and were carried through the winter on unthreshed peas for the morning feed, about four pounds each of cut turnips at noon, a full feed of clover hay at 5 p. m., and four pounds of cut turnips to each 7.30 p. m. In April mangels, in about half the quantity, replaced the turnips. The spring feeding was one pound of grain (the same mixture as lambs had at 5 a. m.) then to grass till 11 a. m., and when let into the barn at that hour, three pounds of cut mangels and clover hay were placed before them. One pound of grain at 5 p. m., and a run out to grass till bed time completed the day's attention.

When rape was ready for use they were turned on it morning and evening, fed grain as formerly and green tares given as a noon feed in the barn. During harvest and fall, they and the lambs were

penned together and had the same feeding as previously described. Fresh water was always within reach, and the salt boxes were kept well supplied. No condiments were used.

Cost of feed consumed.—Here I halt, as it is not possible for me to give even an approximate estimate of cost. That is not considered in fitting animals for the show ring. While it is wise to count the cost as closely as possible in nearly every line of operations on the farm, in my humble opinion, the person who will pay much attention to the cost of feeding or value of the constant labor required to successfully prepare show animals for such a contest as that of our Provincial Fat Stock Show, is one who will find it a very difficult matter ever to win in close competition.

Farming.

Rape in all three cases! ED. J. OF AG.

The Grazier and Breeder.

PROVIDING GREEN FODDER FOR SUMMER.

To the Editor of THE JOURNAL OF AGRICULTURE:

Dear Sir,—We must take time by the fore lock—as the saying is—and not wait until it is too late, and then try and seek a remedy for our thoughtlessness. For those who are keeping cows, there comes a time between seasons that the poor dumb animals have a tough time of it; what with foraging for something to eat and pestered with flies, and bad water, they are to be pitied.

No wonder many cry out dairying does not pay, when a cow has to sustain life, and make milk, out of a ration that would be hard work for a goat or lamb to exist upon, how could she be expected to make money, what has she to make money out of? next to nothing.

I have written before, giving a way whereby all these difficulties could be avoided, but people are so apt to forget that we have to give them line upon line, and precept upon precept.

My remedy is this: for each 10 cows provide an acre—a piece of clover is just the thing. Cut early before your cows begin to shrink in the milk-flow, feed them night and morning with this, and if your clover patch should begin to show signs of getting ripe before you have it all cut once, it must be cut immediately, for as soon as a clover plant has seeded, it has accomplished

its mission, and dies. If you have not got a piece of clover, try something else, the best substitute that I know of, is: oats and vetches, a patch the same size as the clover one, an acre for 10 cows, if the plot you select is not very fertile, use a little manure, and put it into good heart. If you have a large dairy, I should recommend you to divide it into 3 portions, sow one third as soon as possible in the spring, using plenty of seed about half oats and the other half vetches (the dark kind preferred) say at the rate of 3 bushels *per arpent*. After about two weeks time the second plot can be sown, and a fortnight later the last plot. Should you have only a small dairy, you could make only 2 sowings suffice, say at an interval of 3 weeks apart.

During June, there is usually an abundance of grass, during which months your early sown patch is getting under way, by the time it is a foot high it is ready to cut. It is preferable to cut your green fodder 12 hours before you want to use it, that is the evening meal you cut it in the morning, and the morning meal you cut the evening previous, some think this is a lot of trouble, but it is no more trouble than cutting it when you want it, and the cows eat it with a greater relish than when cut fresh. (1) Why this is so, I cannot say, but this I do know if you should cut an ordinary Canada thistle, a cow would almost starve before she would eat a fresh cut one, while after it is wilted with the sun for a short time they eat it with a relish.

Some few people, not many, provide a large quantity of pasture for their cows, and say: My cows are in pasture up to their eyes, I do this in preference to your plan. I admit the fact, but they make a great mistake. In June, the cattle do not eat half of the pasture, and the consequence is parts of it will go to seed, very shortly the cattle will not eat it as it is ripe. I have seen pastures that you could cut almost a ton per acre of hay from them. I would advise cutting early and saving it, and have fresh after growth for the cows, they like it better.

We will suppose, for the sake of argument, that you may not need all your green fodder that you have provided. Should you have some over, cut it for hay before it gets ripe, and those portions you commenced cutting early in the season will be ready to cut a second time. If you will put this plan into operation every year, you

(1) To say nothing as to the danger of *blaat*. Ed.

will be surprised at the good results from your cows. You cannot hope to get high prices all the time for your butter and cheese. So by a large flow of milk you will reduce the cost of production at home, this you will be able to control, much easier than you can control the other end of the business, the price your produce sells for. Give your cows a chance to see what they can do, and by kindness and good treatment they will not prove false to you. Some farmers object to call the cow a machine, well we call her a factory. If you give her enough to sustain life she lives, if you give her a trifle more she turns the balance into milk, and the more you give her the better she pays as she is turning raw material into something, which you again by sending it to the creamery or cheese-factory, turn into butter or cheese, as the case may be, and thereby make money.

But she, the cow, must depend on your liberality, before she deals with you liberally; so, treat your cows fairly well, and they, if they are the right sort, will not disappoint you at the end of the season.

Some farmers do provide their cows with green food during the summer, and feed grain the greater part of the season, too, and find it pays and pays handsomely. But the great majority never take any trouble about how the cow gets her living when she is on the pasture. I would say that when grain is at a moderate price say not over a cent a pound, and either cheese or butter at a fair price, it will pay to feed a moderate amount of grain.

Farmers, give your cows a chance, feed them liberally, and they will pay you; on the other hand, put them on poor pasture and I can assure you, you never said anything truer than that "dairying don't pay."

Yours truly,

PETER MACFARLANE.

March 24th, 1900.

NOTE.—We prefer a mixture of oats, 2 parts, pease, 1 part, and vetches, 1 part. If cut too green, cows sometimes suffer from diarrhoea, particularly in a dripping time, so we always found it best to let the blossoms of the pulse appear before cutting. Ed.

INFLUENCES OF WIND UPON THE FARM.

It can hardly be gainsaid that much has been done for agriculture by irrigation, much by drainage; or that the limits within which water is beneficial, and the lives beyond which it becomes

a nuisance, are pretty c'early defined and generally recognised. But no one has yet ever attempted to map out, with equal distinctness, the influences of wind upon the fortunes of the farmer, yet as an agency upon the well being of his stock and crop, its influences are hardly the less potent of the two.

We admit that plants cannot grow, or animals live, without a constant supply of water. Is it too much to say that neither could ever get to the stage of productiveness without the influence of wind—air in motion? The popular conception is that there is no wind unless it is blowing what sailors call a "capfull." Yet, sportmen can tell us of the action of wind carrying scent for hundreds of yards when they are hardly conscious of any stir. Just as water makes itself felt when it is invisible in the dew upon the plants, and in the action of a moist atmosphere upon the skin of the animal, so wind, when we are not aware, stirs the leaf to its invigoration and quickens the pulses of the animals by its freshness. Wind and water are at work for us when we reckon not of them. It is odd that whilst the modern farmer holds the same set of ideas about the action of water that this forefathers held, he seems to act upon almost opposite lines in all that he does with respect to wind.

One of the very earliest tendencies of those who commenced village life in the country was to surround their homesteads with trees, for the purpose of breaking the force of the wind. A belt or at least a high hedge to keep the stacks sheltered was regarded as a necessity. Small inclosures, with high banks and thorns, were deemed to add value to a farm, partly no doubt, because the animals occupying them got shelter from wind in winter and sun in summer, but also because it was honestly thought that some at least of the crops did better too, when sheltered from the wind. In the period, when the late Mr. Mechi was the high priest of farming in England, these high banks were cleared away by miles and dozens of small fields were thrown into one large one. (1)

Nobody questions that thereby the acts of cultivation were more easily and therefore more cheaply performed; but as regards plant and animal life, the verdict was of quite opposite characters. As a rule the crops have thriven the better for giving free course to the wind; but the animals have done the worse. It is now evident enough that as regards the stud, the herd, and

the flock, our forefather's methods—of allowing plenty of out door exercise all the year round, whilst being careful "to break the force of the wind"—were based upon sounder notions of animal life than our own. When the fields were small and sheltered, the mildew and the grown cereals were to be noticed; where the crops were grown in large "breaks" divided only by a slip of grass or low-clipped hedge, the cereals came through the trial almost unhurt. It was the action of the wind that saved a 1000 kernels from being spoiled for every one that it shook out. It is very rarely that wheat "sheds" except under the combination of a hot sun and a fresh breeze.

We need hardly insist on the good work done by the wind in pulverising the surface soil, when it is necessary to make a seed bed; or in drying the mown grass with less deterioration of scent and savour than is caused by the unrestrained direct sun-beams. The wind makes the best of hay, and when it is not too ruffling, is the cheeriest of comrades to the haymakers.

Wind may be bad for cattle and sheep; but what is it in comparison with imprisonment in a foul atmosphere? And this to emaculated creatures whose last source of happiness was the inhaling, leisurely the sweet, soft air, the milder breezes playing round the while.

And the more our farm animals are bred upon the modern system (of close breeding to induce a tendency to fatten and an early ability to become ripe), the more important it becomes that they do have, with plenty of fresh air, some shelter from strong winds. The wind is a farmer's friend, at least more often than not. But then the cases (in which it is not a friend) viz: in its effect upon cattle, are becoming of more consequence. It is odd that domesticated poultry suffer more from wind than do any quadrupeds. When the slower falls they are

"Glad, as birds are,

Which get sweet rain in June,"

and when it downright pelts, they, not being water-fowl, take care to get under cover. But, in wind, they are—except an old market woman with a basket on one arm and an umbrella on the other,—the most ludicrous of objects, and seem conscious that they are so. When people advocate putting movable poultry houses in each field, and post them in the very middle of the field, and suppose they have done all that is necessary for the bird's comfort, they forget birds sensibility to the effects of wind. No fowl, not even the water-fowl, care to encounter wind; and if a fowl is to make itself at home, it must be provided with shelter from it, where it moves and feeds. With this very small "tap-pickle" to the stem of these observations, I will conclude the article with words which are wise in regard to the wind, that it "bloweth where it listeth; and thou canst not tell whence it cometh or whither it goeth."

(1) In Devon there were plenty of 3-acre fields, with the roots of crop and elm in the middle! Ed.