

## Technical and Bibliographic Notes / Notes techniques et bibliographiques

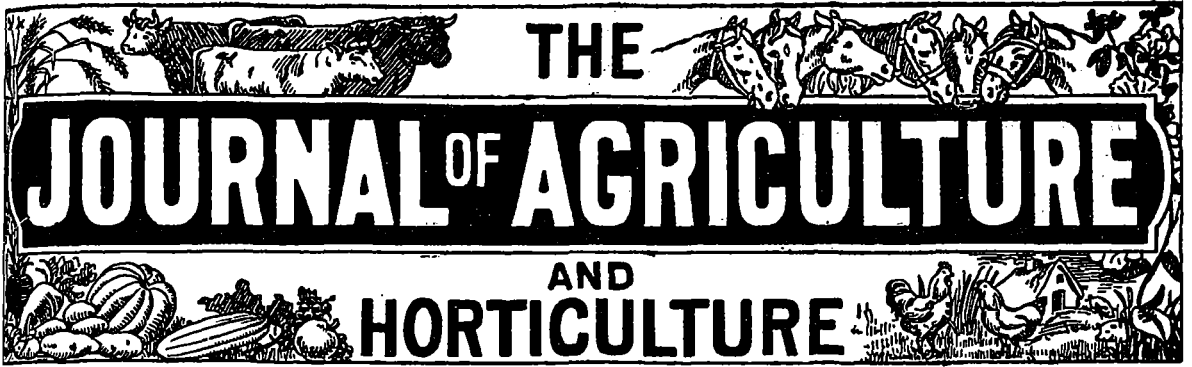
Canadiana.org has attempted to obtain the best copy available for scanning. Features of this copy which may be bibliographically unique, which may alter any of the images in the reproduction, or which may significantly change the usual method of scanning are checked below.

Canadiana.org a numérisé le meilleur exemplaire qu'il lui a été possible de se procurer. Les détails de cet exemplaire qui sont peut-être uniques du point de vue bibliographique, qui peuvent modifier une image reproduite, ou qui peuvent exiger une modification dans la méthode normale de numérisation sont indiqués ci-dessous.

- Coloured covers /  
Couverture de couleur
- Covers damaged /  
Couverture endommagée
- Covers restored and/or laminated /  
Couverture restaurée et/ou pelliculée
- Cover title missing /  
Le titre de couverture manque
- Coloured maps /  
Cartes géographiques en couleur
- Coloured ink (i.e. other than blue or black) /  
Encre de couleur (i.e. autre que bleue ou noire)
- Coloured plates and/or illustrations /  
Planches et/ou illustrations en couleur
- Bound with other material /  
Relié avec d'autres documents
- Only edition available /  
Seule édition disponible
- Tight binding may cause shadows or distortion  
along interior margin / La reliure serrée peut  
causer de l'ombre ou de la distorsion le long de la  
marge intérieure.
- Additional comments /  
Commentaires supplémentaires:

Continuous pagination.

- Coloured pages / Pages de couleur
- Pages damaged / Pages endommagées
- Pages restored and/or laminated /  
Pages restaurées et/ou pelliculées
- Pages discoloured, stained or foxed/  
Pages décolorées, tachetées ou piquées
- Pages detached / Pages détachées
- Showthrough / Transparence
- Quality of print varies /  
Qualité inégale de l'impression
- Includes supplementary materials /  
Comprend du matériel supplémentaire
- Blank leaves added during restorations may  
appear within the text. Whenever possible, these  
have been omitted from scanning / Il se peut que  
certaines pages blanches ajoutées lors d'une  
restauration apparaissent dans le texte, mais,  
lorsque cela était possible, ces pages n'ont pas  
été numérisées.



# THE JOURNAL OF AGRICULTURE AND HORTICULTURE

**VOL. 3. No. 18**

This Journal replaces the former "Journal of Agriculture," and is delivered free to all members of Farmers' Clubs.

**MARCH 15th, 1900**

- THE -  
**Journal of Agriculture and Horticulture**

THE JOURNAL OF AGRICULTURE AND HORTICULTURE is the official organ of the Council of Agriculture of the Province of Quebec. It is issued Bi-monthly and is designed to include not only in name, but in fact, anything concerned with Agriculture and Stock-Raising, Horticulture etc. All matters relating to the reading columns of the Journal must be addressed to Arthur R. Jenner Fust, Editor of the JOURNAL OF AGRICULTURE AND HORTICULTURE, 4 Lincoln Avenue, Montreal. For RATES of advertisements, etc., address the Publishers

LA PATRIE PUBLISHING CO.,

77, 79 & 81 St. James St., Montreal

Subscription: \$1.00 per Annum payable in advance

## Table of Contents

### NOTICES

Competition of Agricultural Merit .....	409
Catalogues .....	409
Farmers' Clubs.....	410

### THE FARM

Notes by the way.....	410
Rowens .....	410
Dairy-goods .....	410
Scarlet-runners .....	410
Riding .....	410
Pease.....	411
Basic-slag.....	411
"Foot and mouth".....	412
Potash.....	413
Absurdities.....	413
The old story .....	413
Brome-grass.....	413
Agricultural experiments.....	414

### HOUSEHOLD MATTERS

Fashions.....	415
Recipes.....	415
Mead .....	417

### THE DAIRY

City milk supply, W. Parry on.....	418
Cheddar-cheese (continued).....	420
Pointers for dairymen.....	421
Cows and milk-fever .....	422

### THE GARDEN AND ORCHARD

Weevils.....	422
Love of rural pursuits .....	424

### THE POULTRY-YARD

Goose-hints .....	426
Colour of "White" Plymouth-Rocks.....	426
Profits in poultry.....	427

### THE FLOCK

Sheep-racks.....	428
------------------	-----

### THE HORSE

Injuries to horses, W. R. Gilbert on.....	430
Managing brood-mares.....	431

## Notices.

### COMPETITION OF AGRICULTURAL MERIT.

The competition of Agricultural Merit for the present year, 1900, will take place in the first region of the province, comprising the counties of Jacques Cartier, Hochelaga, Laval, Deux Montagnes, Soulanges, Vaudreuil, and that part of the counties of Argenteuil and Terrebonne including the parishes and townships not comprised in the Laurentides.

Farmers desiring to take part in the competition should address their entries to the Department of Agriculture, on or before the 1st May, on the blank entry-forms that will be sent, on application, by the Department.

No application sent after the above date will be entertained by the Department.

The "Laureates" that won the silver-medal and the diploma of "Very great Merit," in 1895, must not forget that they have a right, this year, to compete again for the purpose of deciding to whom shall be awarded the gold-medal and the diploma of "Exceptionally great Merit." Those who, at the same time, only earned the number of points requisite to entitle them to the bronze-medal with the diploma of "Great Merit," or to diploma of "Merit" alone, may also enter the competition of this year.

### CATALOGUES.

Messrs. Evans Co., corner of McGill and Foundling streets, Montreal.—We have just received this catalogue, containing 86 pp. It is full of interesting descriptions of the various implements used by the gardener and the farmer, of insecticides, chem-

ical manures, etc., besides the usual list of flower- and vegetable-seeds and plants.

*Wm. Ewing and Co., P. O. Box 376, Montreal*—Messrs. Ewing's catalogue contains 121 pp., and is illustrated in a very superior manner. Like the preceding, it comprises a list of seeds, shrubs, etc., with practical instructions of great utility to farmers.

We have reason to thank the department for the help we receive to get good stock. Five years ago we only could get from eight to twelve dollars a pair for calves and now we get from eighteen to twenty-six.

(Signed) J. N. MURRAY,

*Sec.-Treas,*

Farmers' Club of Marston, Co. Compton.

This Farmers' Club, as many others, has devoted the greatest part of its receipts (subscription money and government grant) to the purchase of breeding stock, hence the results obtained.

### Notes by the Way.

*Rowen*, or aftergrass, is the fresh growth of meadow-land after the severance of the hay-crop. We observe, in an extract, printed in another part of this number of the JOURNAL, a statement that "you cannot perpetuate good meadows and let cows graze on the rowen." (1) Now, this seems a curious assertion to an Englishman, as, in his country the rowen is always grazed by cattle of some kind, horses, sheep, in fact by all kinds of stock, and does not seem to suffer by the practice. What the writer should have said is, that *timothy-meadows* should never be grazed at all, by any kind of stock, until they are at their latter end, i. e., after they have been mown for hay two or three years and have become pastures, and very poor pastures they are, as a general rule.

*Dairy-goods*.—The market reports in the Montreal papers threaten us with a dearth of butter! Now this is a good thing in disguise, for, if butter is so scarce, it will pay the farmer to devote his energies to the making of that product and not to the making of fodder-cheese against which our earnest contributor, Mr. Macfarlane, so eloquently thunders every spring.

(1) Why rowen, as in all American publications? The word comes from the O. E. *rowe*, i. e., roughage. Ed.

It is a great pity that every factory has not plant fitted to make both butter and cheese, as the markets show a preference for one or the other article. Cheese at 62s. a cwt. of 112 lbs. is tempting, of course, but it would pay far better, in the long run, if the supply of butter to the home-market was a little more studied. Our good friend Mr. Weston Parry, of the Compton Model-farm (we never saw Mr. Parry in our life), has completely spoilt the taste of our family, for, only the other day, being unexpectedly out of his make, we were obliged to "go to shop" for a couple of pounds of butter, and the faces of our progeny presented a study of disgust! Exaggeration apart, we do not know where to look for really good butter in Montreal at certain times of the year, and that is the opinion of all whom we have consulted on the subject.

*Scarlet-runners*.—Those who, last year, tasted the green pods of the "scarlet-runner" bran from our garden, were considerably surprised. They had no idea before that they were fit for food. In the neighbourhood of London, Eng., large sowings of this bean are made, and the owners of coverts in the adjoining counties derive considerable profit by the sale of "bean-sticks," slender poles about 7 feet long, set about a foot apart in rows at five feet intervals, up which the beans climb. A far better plan, one which we always practise, is to sow the beans in rows about three feet apart, and pinch back the runners as soon as they appear. This treatment forms a bushy, instead of a climbing, plant, and many more pods are formed than when the beans are poled, and, of course, the picking of the beans is easier.

In cooking, take care that the pods are young, and carefully deprive them of the *strings*; for, according to their treatment in the kitchen, French-beans, scarlet-runners, etc., are either the most delicious or the most hateful of vegetables.

*Riding*.—In an address by the Hon. Sydney Fisher, published in the *Farmer's Advocate*, the Minister of Agriculture complains that the art of riding is very little studied in Canada. Nothing struck us so forcibly, during our three years' sojourn in the Townships, as that, practically speaking, we saw nobody, man or woman, on

(1) Retail price of "best creamery" now is 33 cents a pound.



*Phosphate of lime guaranteed.*

%	%	%	%	%
8 to 45	38 to 45	38 to 45	38 to 45	38 to 45
	%	%	%	
	38 to 45	37	38 to 45	

*Phosphate of lime found.*

29.95	34.22	36.42	36.42	36.07	27.52
		33.38	36.17		

*Fineness guaranteed.*

80 to 90	80 to 90	80 to 90	80 to 90	80 to 90
	80 to 90	80 to 90	90	

*Fineness found.*

75	66.5	72.2	76	72	74	77	75.2
----	------	------	----	----	----	----	------

Two other cases not included in the Consulting Chemist's statement appear to further indicate the importance of members giving their orders for fertilisers and feeding-stuffs on the forms or in the manner laid down in the printed suggestions issued by the Society. It is there recommended that members should give their orders on the condition that the vendor "guarantees the article to be in accordance with the conditions specified on the back of the order relating to such article, and subject to the analysis and report of the Consulting Chemist of the Royal Agricultural Society of England." The conditions as regards basic slag are that it must "be guaranteed to contain a certain percentage of phosphoric acid, or its equivalent in phosphate of lime [a good quality should contain about 17½ per cent of phosphoric acid, equal to about 38 per cent of phosphate of lime], and to be sufficiently finely ground that 80 to 90 per cent passes through a sieve having 10,000 meshes to the square inch."

A member of the Society sent a sample of basic slag for analysis by the District Agricultural Analyst appointed by the local County Council: and the analysis showed a lower percentage of phosphate than was guaranteed in the invoice. The vendor's attention was called to this, and he offered an allowance, which allowance was not, in the opinion of the District Analyst, sufficient. But it does not appear that, under the Fertilisers and Feeding Stuffs Act of 1893, the buyer is entitled to receive from the District Analyst more than "a certificate of the result of his analysis" (Section 5), or to ask the District Analyst his opinion respecting the money value of the article. Nor is the vendor at all bound by any such opinion

expressed by the District Analyst. In the case in question, the seller of the basic slag declined to increase the amount of allowance he offered, It was at this stage that the member sought the assistance of the Royal Agricultural Society. But the analysis not having been made by the Society's officials, and the Society's form of order not having been used, all that could be done was to refer the inquirer to the powers of Sections 5 and 6 of the Act of 1893, in case the vendor should take proceeding for the recovery of the debt due to him.

In the second case, the buyer accepted an invoice which guaranteed only a certain percentage of phosphoric acid, but said nothing as to any guarantee of fineness of grinding. The sample, on analysis by Dr. Voelcker, was found to contain a slight deficiency of phosphoric acid below the minimum guaranteed, but to be very coarsely ground. The buyer was, therefore, unable to enforce the claim which he desired to make on receiving Dr. Voelcker's report that the material was ground much less finely than was desirable to enable the fertiliser to have a prompt action on the soil, because he had not stipulated in advance for any minimum degree of fineness, as suggested in the Society's recommendations.

Had these members given their orders for basic slag on the form prepared by the Society (copies of which are at all times at the service of members), they would have been in a much better position, since the fee charged by the Society (10s.) for an analysis of basic slag or other fertiliser includes "an opinion as to whether it be worth the price charged," and the order makes it clear that it is given, and that the fertiliser is accepted by the buyer, "subject to the analysis and report of the Consulting Chemist of the Royal Agricultural Society of England."

E. W. STANYFORTH, *Chairman.*

February 6th, 1900.

*Foot and mouth.*—We regret to say that three outbreaks of this terrible complaint has taken place in the neighbourhood of Yarmouth, in the county of Norfolk, England. The Board of Agriculture is, of course, taking every possible pains to confine the disease to its original locality; the Irish authorities have suspended the importation of cattle into Ireland for the time being; and if farmers generally will support the measures

government is taking, there is every prospect of the disease being prevented from becoming epidemic throughout the country.

We have every reason to remember the outbreak of this disastrous epidemic in 1852. We were then just stocking a new farm we had taken in the Eastern counties, and having gone to Peterborough fair to buy bullocks for fattening, we brought home 37 as nice shorthorn steers as any man would wish to see. Two days after their arrival at our place, one began to hang his head; another, and again another followed, until the whole lot were affected. By the aid of a first-rate veterinary-surgeon, we succeeded in pulling them all through, but the loss, exclusive of the cost of attendance, was at least \$10.00 a head, as the fine, healthy beasts were fearfully reduced in flesh, and did not begin to thrive for some weeks after they were cured of lameness, etc.

*Potash.*—Mr. Wrightson, one of the best and most practical heads of the agricultural colleges of England, confirms our advice as to the use of potash as a manure; advice given, goodness knows how often, in this periodical.

Speaking of "Field Experiments," the Professor says: "Many of the minor manures, such as sulphate of lime (plaster), sulphate of magnesia, common salt, and silicate of soda have dropped out of the running, and attention is now concentrated upon phosphates and nitrogen. Potash is still in it, but there are ominous growls as to its doing harm. *Potash is generally fairly abundant in soils, and the amount returned in the straw is a safeguard against its exhaustion. Where a large head of stock is kept, there seems to be little need of applying it directly as a manure.*" Just exactly what we hold; and the opinion of 90 farmers out of a 100 in England agrees with our views.

*Absurdities.*—Nice to know that there is an oat that, "wherever it has been grown, has yielded from 20 to 45 per cent more per acre, and often double as much per acre, as other varieties yielded under the same conditions. Eight hundred and sixteen bushels 21 lbs., from 7 bushels of seed, i. e. an average of 116 bushels from 1 bushel sown, has been the reported yield from the ——— oats."

We do not really think a respectable paper should admit such flagrant nonsense, to say the

least of it, into its columns even as an ordinary advertisement; still less should it be allowed to appear under the heading "Concerning our Advertisers."

*The old story.*—It is extraordinary how difficult it is to make people believe that if the clover-crop is too frequently repeated on the same land, it will ultimately refused to grow at all.

Many farmers having stated, at agricultural meetings when Mr. Terry has given his well-known address on "Clover and Tillage," that they were no longer able to grow good crops of clover, Mr. Terry, in reply to questions, said that wheat was the best crop to seed-down with, but if oats were chosen, they should be sown thin, not more than  $1\frac{1}{2}$  bush. to the acre.

"One reason why clover sometimes fails to grow well is, the soil is acid and needs lime or ashes to correct this. Again, the soil may lack potash, or there may be free water in the soil that causes it to heave and throw out the clover roots in the spring. There is no reason why you cannot grow clover, if the conditions are all right, and these can, to a large extent, be controlled."

Lawes and Gilbert, of Rothamsted, tried all these cures for what is, perhaps erroneously, called "clover-sickness, most carefully some 16 or 17 years ago, and utterly failed to discover any remedy for the failure of the plant, except the placing of greater intervals of time between the seeding of clover on the same land.

Sow clover, by all means; sow lots of it; but do not repeat it more than once in 7 years.

#### GROWING BROME GRASS.

*By Wm. Langrish, Valley Farm, Oxbow, Assa.*

I have seen many inquiries in The Farmer lately are the sowing and growing of Brome grass, and it has occurred to me that perhaps my experience may be of some assistance to my brother farmers who contemplate trying this valuable grass the coming spring. Two years ago I purchased 50 lbs. of seed in Toronto, and with that amount seeded six acres of land, at the rate of little more than 8 lbs. to the acre—the Experimental Farms advise 12 or 14 lbs. to the acre. In my case the 8 lbs. proved sufficient, as the resulting crop was quite thick enough. As the

land was very rich and had previously been summer fallowed, I sowed 2 bus. to the acre of oats with the grass. Now, as the oat crop was exceptionally heavy, more than half lodged and what was standing was fully six feet high, I expected that such a growth or straw would kill out or smother the grass, but was agreeably surprised, after cutting the oats, to see the grass strong and healthy looking, and last year the spots where the oats were lodged the worst had the heaviest and best grass. From this I am satisfied that those who have good land, well prepared, will not do wrong in sowing their grass with a nurse crop.

Now a few words as to the sowing of the grass. I suppose in ninety-nine cases out of a hundred the seed is sown broadcast, and I believe there are special seeders sold for this purpose. Now I think the broadcast of surface sowing a big mistake, as the seed being light, much of it does not get covered and does not germinate, or perhaps germinates after a shower of rain and the surface of the land drying up, it dies before more moisture falls. This accounts for the 12 or 14 lbs. of seed being required to the acre. My plan is to put it in two inches deep with a drill on well prepared soil, when every seed will produce a plant, and 8 lbs. to the acre will be sufficient.

I met with a lot of trouble at first, the drills were continually choking and stopping, and I almost despaired of sowing it that way, but I afterwards hit upon a plan which worked admirably. I will try and explain it, as I think this will be useful to many others. I first took a narrow strip of board, about  $1\frac{1}{2}$  inches in width, and in length 6 inches less than the inside of the seed box, through this at every 6 inches I drove a 3 in. nail, from near the centre of the strip I attached loosely with a small bolt an upright piece 1 in. thick, 2 in. wide and about 2 ft. long. This upright was again loosely bolted to the side of the box near the top edge and coming about a foot above the box served as a handle to move the strip below, and so kept the seed constantly stirred. I had to cut a hole in the seeder lid, but on a calm day this could be removed. A boy worked the handle while I drove, and though I watched carefully not another drill stopped running. A piece of lath should be tacked across the inside of the box about one foot from each end, to keep the ends of the long strip down in place and the box should not be more than half

full of seed. My grass last year was nearly six feet high and very heavy. Professor Fletcher remarked at his "weed" lecture at Oxbow that it was the finest he had seen last year.

*N.-W. Farmer.*

### AGRICULTURAL EXPERIMENTS.

The general plan of all agricultural experiments includes nitrate of soda, sulphate of ammonia, superphosphate, and basic cinder in varying proportions, or alone. The results are not very satisfactory reading, as they generally answer one another somewhat discordantly, and the effects seem to be dependent upon the natural composition of the soil. The usefulness of these experiments is for the most part confined to the occupier of the particular field on which they are conducted, and no one at a distance is particularly interested in the effect. Observation as to the more general results obtained over wide areas under ordinary management seems quite as useful as definite experimental plots. Experiments upon fertilisers are generally too cramped in their conception, and their results are too much controlled by previous treatment of the land and accidental variations in the soil. Errors, too, are multiplied in converting the results obtained on plots into yields per acre. Experiments, to be of value, should be carried out on a large scale. It also often happens that the crops obtained on plots are not so satisfactory as the crops grown around upon the non-experimental field where a freer system is pursued. Having conducted a great number of experiments in the field, I have often been struck with the poor yield of the plots in comparison with the field. This is due to the interruptions inseparably connected with experimental work. The land is specially treated, the manures are applied so as to secure an exact distribution over a small area, and this is very difficult. If drilled, it is difficult to control the flow, and if broadcasted by hand the crop suffers. Even wind disturbs the balance, and the margins of contiguous plots poach on each other. A little blank makes a great deal of difference in the result, and a seam of good soil, an old hedgerow, a tree, or ash-heap site of a year ago, each affects the crop. The Rothamsted experiments will never be beaten in this country, because all irregularities have been eliminated by uniform management for fifty years. To institute

experiments on ordinary land is treading on treacherous ground. In selecting a site for the purpose, worn-out land is the best, because the manures tell more distinctly upon it, and the unmanured plot may be trusted to be poor. Wherever land is in high condition there is some danger of the unmanured plot being the best or second best of the lot, which is very unsatisfactory to the experimenter. I always found the best comparative results when the unmanured plot produced a wretched yield, and this was always the opinion of M. Ville. The object is not a heavy crop but a comparative result. The general outcome of experiments seems to be that manures tell most where they are most wanted. The corollary from this very simple dictum is, that if we want artificial manures to pay, we must not use them on land which is in high condition. On such land experiments show that the difference between unmanured and manured plots is very small and sometimes *nil*; occasionally the unmanured plot is the best. What does this teach us? The lesson appears to be, that the profit from using any artificial manures is in inverse ratio to the richness of the land. Hence many farmers whose land is in high condition use no artificials. It is also deducible from the above, that the quality and condition of the land to which a fertiliser is applied is a more important consideration than the description of fertiliser used. It is noteworthy that agricultural experimenters are so in love with their own results that they never refer to the trials made by others in the same line years ago. The whole thing is worked over and over again, the results published and the conclusions drawn, just as if the idea was a novelty. The results of this year are forgotten in those of next year, and there appears little hope for a true science of manuring.

JOHN WRIGHTSON.

NOTE.—A most sensible article. ED.

## Household Matters.

(CONDUCTED BY MRS. JENNER FUST).

### FASHIONS.

The world of fashion just now seems to be in a state of stagnation. Shopkeepers are complaining; they say trade is dull, and with good reason. The fashionable world is just now engaged in a

loving work of charity, so gigantic a work that there is no time for the frivolities of life.

From the throne to the settle all are in unison. In this grand scheme for alleviating the sufferings and hardship the brave fellows are now undergoing in fighting our battles.

Tenderly nurtured women are devoting themselves to thinking and planning every possible comfort for these glorious fellows. It is a loving work of consolation to many of these brave women to know they are working for husbands, friends, and brothers. The snubbings they used to get in the games of childhood are forgotten; how glad would they be to hear the dear voice shout out, "Muff"; "Butter-fingers"; or any other little endearing, brotherly epithet; how they would fag for and wait upon every wish, if they only had that dear boy with them once more.

They call to mind one happy day, when by good fortune they caught a ball on the fly, and heard a voice shout out: "Well caught, old girl. The sting of that ball was felt, the compliment is vivid.

It is to these brotherly out-of-door sports that many a sister is now able to bring out a clear mind and a healthy body to act in this great emergency.

Men will have to acknowledge that women can work, as well as weep.

A mighty power is growing every day, and will make itself felt as it has to-day.

Women do not want to usurp one bit of power from man. She only wishes to be taken into partnership with him a little more, and not to be treated so like a puppet. She does not want to make laws, but would like to know a little, how and why they are made: She is quite ready to help to keep them. At the present time, she has shown how she can act and do when called upon by the voice of want. And when her assistance is no longer needed, the true woman will gladly retire into her own sphere of domestic life.

### ABOUT NICE THINGS.

At this season of the year, when good meat is a rarity, any nice way of making up little dishes to tempt the flagging appetite after the trying winter, will be very welcome to many. They are simple, if people will only give them a trial, it is no use saying: I have not half the necessary things; have the courage to give a trial



with what there is in the house, and remember the sauce will always make up for many things lacking. Use judgment, and be sure to taste as you proceed. The tiniest bit of pepper, salt, or sugar, and it may be in some cases, spice, will entirely alter the dish, and remember the great point in cooking is tasting as the dish is made. If the maker is not a good taster, it is better to follow out the given quantities for a dish minutely.

#### CHICKEN PATTIES.

$\frac{1}{4}$  lb. cold chicken,  $\frac{1}{4}$  lb. ham, 1 oz. butter, 3 Teaspoonful of cream,  $\frac{1}{2}$  doz. minced lemon rind, 1 doz. of lemon juice, 2 doz. of white stock,  $\frac{1}{4}$  oz. of flour, a little salt and pepper. Mince chicken and ham very finely, butter and flour to be mixed into a stiff paste. Put all the ingredients into a saucepan stir over the fire till boiling point is reached, then remove, and use for the patties, when cold. Should the mixture be too stiff a little more cream can be added. The patty-cases can be bought at small cost at the confectioners, by those who are not clever at making puff paste.

#### ANOTHER DAINTY DISH.

Three hard boiled eggs, a little cold chicken, all cut up fine, a small crisp lettuce, chopped parsley, and betroot. A little anchovy a few capers or gherkins, according to taste. This with a little of the mayonnaise sauce makes a nice little dish.

#### MAYONNAISE SAUCE.

Put the yolk of an egg into a basin with a salt spoonful of mustard and a pinch of pepper and salt. Now stir in drop by drop salad oil until the mixture becomes creamy and very stiff. Stir with a wooden spoon, always stirring the same way round. As soon as it becomes thick, like butter, add a teaspoonful each of lemon juice and vinegar, with 3 drops of chili-vinegar. Keep in a cool place or on ice till wanted.

NOTE.—Mrs. Sarah Lun was an old woman who kept a store in Bath-market (England), some time in the middle of the *last* century, i. e., the eighteenth. Ed.

#### SALLY LUN TEA CAKES.

$\frac{3}{4}$  lb. of flour  $1\frac{1}{2}$  oz. butter,  $\frac{1}{2}$  pint of milk, one egg,  $\frac{1}{2}$  oz. of yeast, 1 large tablespoonful of sugar. Put flour in a basin, with the sugar and a tiny

pinch of salt. Mix the yeast with a dust more sugar, a little flour, then add half the milk luke warm. Melt the butter in the rest of the milk, let it cool a little, beat up the egg to a froth. As soon as the yeast in the basin begins to bubble, which it should do in ten minutes, stir in the egg and butter with the milk. Mix the liquid with the flour into a smooth soft dough beating it with a spoon as it will be too moist to knead.

Divide the mixture between 3 round greased tins. Cover and let rise for an hour in a warm place. Bake in a quick oven about fifteen minutes.

#### HOW TO CLEAN RIBBONS.

Fill a glass fruit jar about half-full of gasolene—more or less, according to the amount of ribbon to be cleaned. Place the soiled ribbons in it—all colors, lengths and kinds may go in at once—and screw the cover on tightly. Shake the bottle occasionally and leave it closed for from two to six hours, or over night. Then take out the ribbons, shake each one well, and hang it to dry in the open air. The ribbons will be clean, and the dirt will be found in the bottom of the jar. Of course, the ribbons need a thorough airing and sun bath to remove the odor of the gasolene, but that is all. No pressing is required, as the gasolene does not effect them as water would. The clear gasolene should be poured off without disturbing that at the bottom, then the dirt which has settled at the bottom should be emptied out and the clear gasolene put back, ready for another time. Keep it tightly covered, and, of course, never use it near a fire, because of the danger of its igniting.

The gasolene will turn white ribbons yellow, so this method is not advisable for them. It also leaves the ribbons in the same condition that it found them as regards their being crumpled, so that those which are badly creased should be given the treatment that is accorded the white ribbons. Prepare a suds of soft water and any pure soap, wash the ribbon in this, just as you would wash a fine handkerchief; rinse and let it partly dry. Take it down while still damp in all parts and roll it smoothly over a wide card or piece of pasteboard, rolling a piece of clean white muslin with it. Wrap the muslin around last, so that the ribbon shall be covered, and place the whole under a heavy weight. A letter press is an

excellent place in which to press it. Leave it until it shall have had time to dry. The muslin will absorb the moisture. The ribbon will come out looking fresh and clean, and will have lost none of its "life" as is the case with ribbons which are pressed with an iron. If a good soap is used the colors will not run, and this process takes out the creases as well as removes the dirt.

#### HINTS FROM A DYER.

Some hints from a dyer are surprising. One of these is that as a rule the poorest silk dyes better than a richer quality; also that any silk takes light colors more successfully. The best satisfaction is given in all-wool fabrics, which dye beautifully. Silk plushes cannot be dyed, while woollen ones dye handsomely. Another bit of information on the same line is that the silk and chiffon lamp shades can be cleaned. As some of these are very elaborate and expensive, their restoration is a desirable thing. A new department in some of the dyeing and cleaning houses is that of sulphur cleaning. This is intended for all kinds of household hangings that become soiled. As the process not only restores to the articles their freshness and purity, but also is guaranteed to destroy moths, it is useful for blankets, for rugs and other wool materials liable to be moth-infested.

A very interesting tale is told of the origin of the famous guipure lace. A certain Venetian sailor lad returned from a voyage in Eastern waters, and brought to his betrothed, a worker in needlepoint, a bunch of the delicate and beautiful coraline, which he told her was the lace made by mermaids living in the coral caves of the Indian seas. "Pretty as it is," said the girl, "I will make something far prettier with my needle, and my bridal-veil shall be of mermaid's lace." The sailor lad went off on another long voyage, and during the months of his absence she carried out her beautiful idea love lending an impetus to the work, she made, and wore the veil.

And thus was started the making of the beautiful guipure lace.

#### MEAD.

I incline to the opinion that the best samples of mead are made almost wholly of honey, so as to preserve as much as possible distinct evidence of

the source of the beverage. Tastes differ, and therefore I give recipes to suit both those who like the taste of the honey and those who do not.

One of the oldest recipes given in the *British Bee Journal* in 1883 is by Mr. Symington, who, with the delicious beverage he made, took silver medals at Edinburgh, Dumfries, Glasgow, and South Kensington. These are the directions:—

Take 6 gallons of water, 24 lb. of honey, that which is the thickest and darkest is the best for this purpose; boil for half an hour, removing all scum as it rises, add 3 oz. best hops; boil again for fifteen minutes, strain into a cooling vessel, and when lukewarm add six tablespoonfuls of brewer's yeast well stirred in. Allow it to work for twenty-four hours, remove the head, and put the liquor into a five gallon barrell, into which has been first put half a bottle of the best pale brandy and two lemons sliced. Leave the bung out, and allow it to work over, filling up as it decreases with the spare liquor.

When the working has ceased, bung it down tightly, and bottle it in two years. Formerly it was the practice to put the brandy into the mead when bottling the latter, but it has been found that adding it in the barrel gives a much better result.

According to Mr. T. W. Cowan, in his account of his "Rambles in Savoy," M. de Layens made an excellent sample of hydromel in the following manner:—

Disolve 250 to 300 grammes (1) of honey to every litre of water, and pour into a cask, which must be thoroughly clean. Do not fill the cask, but leave room for fermentation, which generally commences in a few days. On the bung-hole simply place a tile. Reserve some of the sweetened water in bottles to fill up the cask as the liquid inside wastes away during fermentation. The larger the quantity made at one time the more regular becomes the fermentation. M. de Layens prefers June for making hydromel, as then the temperature is right, and the fermentation is completed during the summer months, whereas, if made in the autumn, the cold weather retards fermentation and has a prejudicial effect on the hydromel. The liquid ferments very well at 60 deg. to 73 deg. Fahr.

Sack-mead is made in the following manner:— To every gallon of water put 4 lb. of honey, and boil it three-quarters of an hour, taking care pro-

(1) One gramme equals 15.43 grains. Ep.

perly to skim it. To each gallon add half an ounce of hops, and then boil it half an hour, and let it stand till next day. Then put it into the cask and to 13 gallons of liquor add a quart of brandy or sack. Let it be tightly closed until fermentation is over, and then stop it up very close.

SARAGOSSA WINE OR ENGLISH SACK.

To every quart of water put a sprig of rue, and to every gallon a handful of fennel roots. Boil these half an hour, then strain, and to every gallon of liquor put 3 lb. of honey. Boil it two hours and skim it well. When it is cold, pour it off, and turn it into a cask or vessel that will just hold it. Keep it twelve months and then bottle off.

EXPERT.

## The Dairy.

### CITY MILK SUPPLY

Leaving the water supply out of the question, perhaps no other city food supply is subject to such a variety of contaminating influences, between its production and consumption, as its milk supply. Nor is the effect of these influences at all to be regarded in the same light as those conditions which make other articles of consumption unfit for human food and a menace to the public health. With scarcely an exception, any unfitness of other food which is used to any great extent in the raw state for human consumption, is apparent on the face of it. It is not difficult to detect decay in fruit etc., whilst other foods are invariably subjected in their preparation for use, to such conditions as, more or less, effectually destroy any germs of disease or any decay which may have gained a foothold in such and such an article of diet. Boiling and baking, mostly, effect this.

Moreover, there are but few cities that are not provided with adequate laws for the inspection and control of the sources of various food supplies, and thus afford all possible protection to the community. In the majority of cases such laws have attained the object of their enactment, whilst their practical operation has been simplified more on account of the source of supply being either established or carried within the city itself, than by any especially intelligent application of scientific principles. Laws which prohibit the offering for sale of any diseased or impure food, are not

so framed as to strike very effectually at any possible cause of diseased infection being transmitted through a source of supply without the city limits.

To meet such cases, it is necessary to establish a system of inspection from the producer, wherever he may be, to the consumer. It is evident, then, that the proper inspection of a city's milk supply is a far greater undertaking than that of any of its other food supplies.

Milk which contains the standard amount of fat and solids not fat, and which to all appearances, in taste and smell, is sweet and wholesome, may yet be infected with germs of disease. Scarcely could a more favourable breeding ground for germ-life be provided than milk under the conditions in which it is frequently to be found on the farm. What constitutes a favourable breeding ground for germ-life? Moisture and darkness at a temperature between 80° F. and 95° F. This condition is not infrequently to be found in many a dairyman's milk room. Taken separately, the two former conditions, moisture and darkness, being more or less beyond control, may be left out of the question, beyond the suggestion of having a little out-house built specially to keep the milk in, well lighted and ventilated in a pure atmosphere. The latter condition, the temperature, is the key to the situation, and if milk be kept at the proper (low) temperature, the condition favourable for germ development is avoided.

In milk which has not become contaminated with the germs of any infectious disease, the development of germs will result in little more than a change in its properties and will impair its usefulness as a food, and although it may be the cause of much mortality amongst infants, it will have no appreciable effect on the average adult. However, in this connection, I feel confident that a large percentage of deaths among infants which are caused on account of the use of improper milk is attributable in the large majority of cases to ignorance on the part of customers, not realizing what fastidious care milk requires, rather than to any neglect or fault of the dairyman. Milk that is left on the doorstep in the sun for half an hour, cannot but have commenced to develop to a marked degree whatever germs may be most in evidence in it. Such gross negligence, which is common enough in any city, certainly does not suggest much intelligent care of the milk after it is taken indoors.

It is by no means uncommon to hear of diseases of different kinds being traced to a certain milkman, and through him to some remote milk supply outside the city, where the disease in question has broken out. Such cases can always be traced to some family or district in which such disease is prevalent, and has gained access into the milk either from a person attending the cows or milk, from the person washing the cans and pails, or from the water in which the milk is cooled and the cans washed.

Communities dependent on an uninspected milk supply are not slow in realizing that they need protection.

An important factor in the bacterial content of the milk supply of cities and towns, is the time between milking and delivery to customers. In large cities this often amounts to twenty-four or thirty-six hours, which is too long altogether; but when this is the case, it is absolutely necessary to keep the milk on ice, by so doing the milk is kept fairly fresh and sweet.

It is not sufficient, however, to establish only inspection of the milk supply on its arrival in the city and during its distribution. For although during this time, there are plenty of chances for it to undergo injurious conditions and be subject to contaminating influences, yet these are as nothing when compared with the ever present dangers lurking at the source of production (the farm) when the surroundings are unfavourable.

Undoubtedly, the great source of bacterial contamination of the milk is the cow herself. I do not imply merely the bacteria from the mammary gland, but those connected with the exterior of the cow. It is true that there are other sources of importance. The food that the cow eats (indirectly), the cow stall itself, the water with which the cans are washed or with which the milk is adulterated, the hands of the milker as well as his clothes, are all occasionally the sources of bacterial contamination. But after all we must look upon the cow herself as the cause of the most trouble. From the cow the bacteria get into the milk during the milking, partly from the milk ducts, partly from the dirt that is attached to the cow, and in no small measure from her dung. It is clear that the important point in this connection, toward which to direct the cleanliness is the cow herself. The average farmer never appears to feel that it is necessary for him to keep his cow as clean as he does his horse. But there is much

more real need for cleanliness in the case of the cow. Upon such cleanliness will depend his ability to obtain a pure, wholesome milk, while so sure as he allows his cow to become covered with dirt and manure so sure will he be liable to have trouble with the milk. So, at the outset, the great secret of obtaining a proper supply of milk is to have a healthy cow and to keep that cow clean. Now, here, is where the inspection should begin.

Another fact of importance which I wish to emphasize, is the value of cooling the milk as thoroughly as possible as soon as milked. When drawn from the cow, milk is at a high temperature, and, indeed, at just the temperature at which the majority of bacteria will grow the most rapidly. Under the influence of the atmospheric temperature, especially in the summer, the milk will become cool very slowly but never becomes cooler than the air. The bacteria which have got into the milk will therefore have the very best opportunity for rapid multiplication and the milk will sour very rapidly. If, however, the milk be cooled to a low temperature (54° F) immediately after it is drawn, the bacteria growth is checked at once and will not begin again with much rapidity until the milk has become warmed once more. This warming will take place slowly, and therefore the cooled milk will remain sweet many hours longer than that which is not cooled. Early cooling to as low a temperature as is practicable is the best remedy for too rapid souring of milk. Here again may inspection come in, and to every thinking man or woman, there is no question as to the desirability of an inspection of the dairies and herds furnishing milk for cities and towns.

Our (Montreal) laws have furnished us with a milk inspection which protects our pocket books, but one can readily understand that the adulteration of milk by water is really of far less importance to the public in general than the contamination of the milk by improper types of microorganisms. We have learned, as I have already pointed out, that milk is occasionally contaminated with disease germs, (such as tuberculosis, typhoid fever, diphtheria, scarlet fever, etc.), but that such organisms come only from cases of disease, either diseased cattle, which directly contaminate the milk, or diseased persons, who indirectly are a source of such contamination. There is no need of milk becoming contaminated by any of these disease germs, with a possible exception

of tuberculosis, if care and scrutiny are used by the milk producer to prevent the milk from diseased cattle being distributed, and to prevent its being placed under conditions for secondary contamination from diseased persons. But with a systematic inspection, danger from such sources, is surely greatly reduced if not rendered altogether impossible.

Failing the protection of such a system of dairy inspection under the control of the City Health Committee, undoubtedly the best way to secure a good milk supply is to deal with a dairyman or milkman who is thoroughly honest and scrupulously clean. He should be required to show from the dairymen who furnish him with milk, quarterly certificates from veterinarians of good standing, stating that after a careful examination of their cows they were found to be healthy, that if the health of any was doubtful, such animal had been removed from the herd, that the quality of feed and water, the sanitary conditions of the stables and surroundings, and the health of the employe's were approved, in every case. His own honesty and experience should be sufficient guarantee as to good measure and quality and that his milk has been properly cared for and guarded against exposure. The certificate of the veterinarian should be sufficient guarantee as to the good health of the various herds and the correct sanitary conditions of the several dairies. It seems to me a mistake to consider that milkmen are naturally a lot of tricksters. Honest men are in this business as well as in any other, and one of the most important steps toward securing honest milk is to encourage the honest man by giving him deserved trade.

H. WESTON PARRY.

Feb. 23th. 1900.

---

### CHEDDAR CHEESE.

---

(Continued).

*On Soils said to be Unsuited for  
Cheese-making.*

---

There are certain soils or farms in England, especially in Somerset, upon which, if tradition can be believed, there are spectre sign-boards bearing the words, "Good cheese cannot be made here." Unfortunately, no one is able to see these signs except the tenant for the time being. But

the belief in the inability to make good cheese on certain soils is so wide spread, and the conviction that it is founded upon fact is so strong, that the subject received careful attention and inquiry. Some people said that the Society always selected a site for its Cheese School where it was possible to make not only good, but the best cheese, but that if a site were selected where good cheese had not been made before they would find out that it was impossible to make good cheese on such soil.

In 1892 a site was selected, where the milk was produced off alluvial land overlaying peat, and where it was difficult to make the best cheese.

In 1893, the Committee again determined to select a difficult site, and the school was fixed at Butleigh. Yet the prices fetched by the cheeses averaged from June to October, 68s. per cwt. and 66s. per cwt. for the season. It might be inferred that no difficulty was found in making cheese upon this site. Such supposition would be far from correct. The difficulties were great, and such as had not been met with during the two preceding years. Although these difficulties fluctuated from day to day, being at times very great, at others only slight, and this even when the cows were on the same pasture, yet as a matter of fact they were nearly always present. All the skill and experience, which Miss Cannon possesses in an exceptional degree, were needed to cope with them, and I can quite believe that an ordinary cheese-maker would find such difficulties insurmountable.

A site was selected in 1894, where, according to local tradition, it was not possible to make good cheese. To use the words of a local man who spoke to me on the subject, the common opinion was "that no good cheese had been made in Mark for thirty years." Nothing is more striking to an observer of local beliefs than the strong hold which they obtain upon the general inhabitants of a district. It would be difficult to account for them even were they founded on facts over which the inhabitants had no control, but when, as is generally discovered upon investigation, they are mainly founded upon superstition, one feels that no language can be too strong in which to denounce such folly.

What, then, is the cause of this tradition? So far as can be judged from hearsay, the people in certain parts of Somerset have to a certain extent lost the art of making good Cheddar Cheese. There may have been some special causes tending

towards this end, included among them being, perhaps, certain difficulties intimately associated with the district, such as a bad water supply, or the dying out of those inhabitants who possessed special skill in the manufacture of cheese, and who were looked upon as guides in all cases of difficulty. From these, and perhaps other causes the quality of cheese may materially decline in a particular district. After a few years the inhabitants begin to consider it a matter of course that the cheese which they produce will be of poor quality, and they do not seem to attempt to improve it, or to seek for the cause of its inferiority. If they do, then, with that perversity characteristic of human nature, they seek for a cause outside themselves, and, as a rule, partly, perhaps, from their inability to think of any cause, they put the blame upon the land. Such a tradition had become firmly rooted in the parish of Mark. The land was universally declared to be unsuitable for making cheese, and it was held that no good cheese could be made there.

Thus, for three consecutive years the Cheese School had been located in a district where it was said good cheese could not be made, and always because of the nature of the land. On each of these occasions the soils were analysed by Dr. Voelcker, and in no single instance was he able to detect the presence of any chemical constituent which would be injurious to the milk or to the cheese made therefrom, or would in any way prevent good cheese being made off such land. The pastures were carefully examined by the Society's botanist, Mr. Carruthers, and he too in all cases reported that in these pastures he was unable to find any weed or plant which would cause the slightest taint in the milk, or which could in any way be considered as even remotely likely to injure the milk, or cause the pasture to be the source of any taint in the cheese. I shall hope to prove that, great as the difficulties undoubtedly are on some farms, the real cause of these difficulties is not the land. Thus, in 1892, I found that "taints appeared more frequent when the wind was in one quarter, than when in another," and this led me subsequently to discover that the earthenware drain-pipe which carried the whey to a receptacle in the farmyard and opened into the dairy, was a veritable bed of organisms, which were carried into the atmosphere of the dairy and so caused trouble. This same source of trouble I have known destroy a whole year's make of

cheese in other dairies. It was remedied at Axbridge, and since then Miss Tilley has produced excellent cheese.

The trouble found at Butleigh, in 1893, was undoubtedly due to the water supply, and that at Mark, in 1894, was, to certain extent due to the same cause. As at Butleigh so at Mark, there was one field noted for producing tainted milk, and Mr. Peters was most anxious I should discover the cause. But I was unable to do so then. My subsequent work, however, on the organisms of spongy curd at Haselbury, led Mr. Peters to try the remedy suggested, and I subsequently received from him a letter containing the following: "The field which always produced the taint was the 12 acres (No. 11). I did not fence off the water, but dipped water from another pit and placed it in tubs for the cattle, which they drank, and we found the curd much better, with little or no taint. My opinion is that it would pay to dip water for cows at all times."

In view of this accumulated evidence, it is devoutly to be hoped that we shall hear less in the future of lands upon which, according to tradition, it is not possible to make good cheese. The sooner this superstition of the West is as dead and buried as is the belief in witches, once so prevalent in the same districts, the better. The belief that the cause of bad cheese lies in the soil is as pernicious as a belief in the evil influence of some supernatural presence; it is a veritable demon destroying all hope of improvement, and preventing all attempts to overcome the difficulties which undoubtedly exist, and it has already been the ruin of far too many people, and of the peace of far too many households.

*(To be continued).*

#### POINTERS FOR DAIRYMEN.

*By Geo. E. Newell, an American Dairy Authority.*

A good dairy region exists where there are good dairymen.

Well-fed cows do not have to show up pedigree to establish a milk record.

There is more money for the average dairyman in keeping his pasture fences in repair than in looking after political fences.

Talking about farm wages, how much does the average dairyman's wife usually receive?

"A practical dairyman" is one who makes a profit out of his cows.

If your cows shrink in milk yield during stormy weather, it shows that you have not given them sufficient protection from the elements.

A cow, like a man, is known by the company she keeps. Don't let her get poor by allowing sheep to eat the grass from under her nose.

You can perpetuate good meadows and let cows graze on the rowen. (1)

The maker who uses his or her finger for a thermometer was never yet known to produce regular supplies of good butter or cheese.

There are other and better ways of encouraging a cow to give down her milk besides kicking her in the ribs.

The most nutritious grass grows on the best-prepared soil.

The man with a well-defined silo usually takes precedence when it comes to a profitable farm and neat, substantial buildings.

The hardest cow to milk is usually left to the hired man.

Carelessness and sour milk go hand in hand.

Greasy, soiled clothing marks a poor butter-maker.

Every year is a good dairy season for some. Why is it not so for all.

The dairyman with the longest head is apt to carry the longest pocket-book.

I never yet saw a profitable cow that was not docile and gentle, and in order to be such she had to have a docile and gentle owner.

A man does not necessarily have to become gray in acquiring the right sort of dairy experience. Some of the best dairymen I have even seen were vigorous, alert, progressive young men.

#### COWS AND MILK FEVER

*Ed. Hoard's Dairyman*:—In reading the *Dairyman* of Feb. 9th, I notice an article from a smart dairyman, of Monmouth, Ill., who calls himself Buff Jersey, in which he wants some reader of the *Dairyman* to give him a recipe to produce a case of milk fever, claiming that he handled from 40 to 100 cows, and never had a case of milk fever.

It is good gambling that Buff Jersey never owned a first-class cow, in his life, one that would give at flush 40 lbs. of 5 or 5½ per cent milk per day,

(1) But not with only timothy and clover. *Ed. J. of A.*

as from experience any Jersey cow that is worth, from a dairy standpoint of view, \$300 or upward is liable to have milk fever with 3d to 3th calf, even if the best precautions are observed—I would not own a cow, that is not rich enough to give a large enough flow of milk, to convince me that she was free from possibly taking milk fever.

I usually milk about 20 high class Jersey cows and I watch every one close, give them preventives, half starve them for a couple of weeks before calving, and with all that precaution I have 2 to 4 or 5 down every year, but, thank God, not to lose them, but I save 4 out of 5 cases anyway. Harry's Fair Lady, test 25 lbs. 10½ ounces, was down: I saved her last spring. Miss Eyre 2d, test, 21 lbs. 4½ ounces was down 46 hours, after taking all precautions possible, but I saved her all right, and she is as good as ever.

I have three up now, due to calf Feb. 13, 15th and 18th, and I consider either of them subject to milk fever. One has a test of 14 lbs. 2½ ounces, able to make 20 or over; one 18 lbs 6 ounces, and one 23 lbs. 7 ounces, and if Buff Jersey handles once that class of cows, he will be asking for recipes to prevent and cure milk fever instead of advertising for one to procure it. When I go to buy any Jerseys and I get in a herd where the breeder tells me this cow's dam or that heifer's dam died with milk fever, I never ask for any better recommendation, because no poor cow dies with milk fever, but all first-class cows are subject to same. (A queer fish Mr. Hilgert *Ed. J. of A.*)

MICHEL HILGERT.

St. Joseph, Mo.

#### The Garden and Orchard.

(CONDUCTED BY MR. GEO. MOORE).

#### WEEVILS.

(*Insects continued*).

Weevils not only injure trees but also many crops, as mangel-wurzel, peas, beans, turnips, strawberries, ferns and flowers grown in pots and in the open border. Hops are very liable to their attacks, and the juicy shoots of vines and raspberry canes are frequently cut in two by them. Not only does the full grown insect do this mischief, but the larvæ or grubs burrow into the

ground and feed on the roots and crowns of strawberries and other plants, during the autumn and winter months, and in the spring upon the young succulent shoots as soon as they are produced; they also prey upon the young shoots of fruit trees, biting them off so that the sap escapes just at the time when it is required to form the fruit buds

THE BLACK, OR VINE, WEEVIL.  
(*Otiorrhynchus sulcatus*, Fab.) (1)

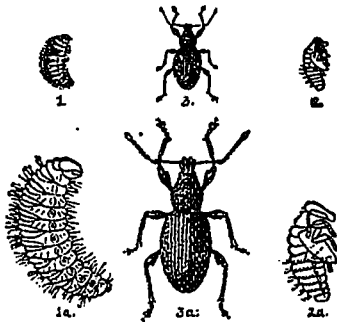


FIG. 1.

Larva 1, 1a; pupa 2, 2a; weevil 3, 3a; natural size and magnified.

Eggs are laid in the summer, and the grub is found in the early autumn and until the month of March, in the ground among and near to the roots of plants. It turns into a pupa, as shown in the engraving, and then into the perfect weevil.

THE CLAY-COLOURED, OR RASPBERRY, WEEVIL.  
(*Otiorrhynchus piciceps*, Fab.) (2)

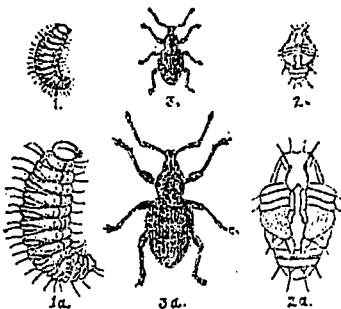


FIG. 2.

Larva, 1, 1a; pupa, 2, 2a; weevil 3, 3a; natural size and magnified.

It is usually found at from 2½ to 4 inches under the surface, is most tenacious of life, disregarding heat and cold, and the most pungent odours.

(1) *Sulcus* is a furrow; here along the back. Ed.

(2) *Pix*, gen. *picis*, is the latin for pitch; *pes* is a foot. Ed.

When disturbed, it feigns death, and remains immovable for a long time; it feeds only at night.

As weevils cannot fly, their progress is slow and they may be prevented from advancing much into growing crops by active preventive measures, such as :

A constant moving of the soil which will tend to check them ;

Hoeing in ashes, lime, gaslime or earth, sand or sawdust, saturated with carbolic acid, or coal-oil at the rate of 2 quarts to the bushel ;

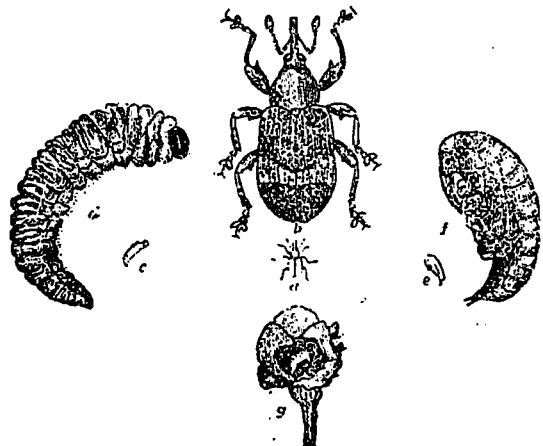
In houses and borders, where weevils are doing mischief, they may be trapped at night with tarred boards or pieces of cloth placed among the plants ;

Strawberry plants in gardens should be examined closely in the autumn, and the weevils picked off by hand ;

The roots of flowers in pots should be frequently examined for the detection of weevils, and if there is any sign of their attack in the flower border, the soil near the plants should be carefully searched and the weevils, in which ever state they are found, picked out.

The injury they do is frequently attributed to wire worms by those who do not take the trouble to carefully observe.

THE APPLE BLOSSOM WEEVIL.  
(*Anthonomus pomorum*).



a, Weevil, nat. size; b, magnified. c, Larva, nat. size; d, magnified. e, Pupa, nat. size; f, magnified. g, Larva in blossom bud.

This weevil causes much harm to the apple and pear crop, by feeding upon the leaves and blossoms, and thus destroying fructification. The injury it does is sometimes mistaken for the action



of frost, but if the blossoms are very closely inspected, either the yellow pupa of the weevil will be found in them or in a little round hole in the withered flower from which it has cut his way out.

In some parts of France so great has been the damage done by this little insect that societies of growers have been formed to defend themselves against it. If we copied their example, and would adopted some united actions of cultivators, a good many injurious weeds and insects might be stamped out.

These weevils can fly, although not very freely. They are generally of a reddish brown, but sometimes *pitchy* in colour.

The snout is very curious, being half as long as the body, slightly curved. When the weevil falls, he tucks in his legs and snout, and remains motionless, feigning death until the danger is passed.

The habits of the female are very curious. She lays from 15 to 20 eggs, but bores a hole in each flower-bud and deposits only one egg in it. This takes her about a fortnight, and the eggs are hatched in from five to nine days. The maggot is without feet, it lies in the bud in a curved form, it soon cause the petals to wither, and the flower bud changes to a rusty hue, and decays.

This larva or maggot turns into a pupa in about 8 to 10 days, is of a yellow colour with a long beak, and feet folded on the underside of its body. In ten days this again changes into the perfect weevil and escapes by a hole which it bores through the petals. After this the weevils live among the leaves of the trees, hiding in chinks of the bark or moss which may grow upon the branches; they also probably pass the winter under the bark of other trees.

According to natural instinct, the weevils do not appear until the weather is mild; if the season continues warm and growing, the attack is not so serious, but in cold changeable seasons, when the buds develop slowly, the weevils lay their full complement of eggs.

Prevention and remedies: Spray the trees, between October and February, with a solution of sulphate of iron; 1 lb. of sulphate to 1 gallon of water; and dust the trees with freshly slaked lime.

Place bands of tarred paper round the trunks of the trees to prevent the weevils from crawling up. Tar must not be put upon young tender trees but

upon grease-proof paper so that it cannot penetrate to the bark.

Lime-wash, mixed with coal oil, may be applied with good effect, if the rough bark has been well scraped off and the wash thoroughly worked into every crack.

Coal oil emulsion, made weak and thin and sprayed over the trees in a fine mist, will tend to prevent the weevils from laying their eggs. Another method is to shake the trees, thereby causing the insects to fall on cloths spread below. The cloths are then swept with brooms and the rubbish and insects shovelled into sacks and burnt.

This process must be repeated, as all will not fall the first time. Some will say "this is a costly and troublesome task," but it is not so much so as might be supposed; in an experiment with an orchard of 8 acres 450,000 weevils were destroyed at a cost of less than \$5 and good crop of apples was obtained.

The operation must be performed immediately the apple trees show their blossoms and before the weevils have had time to lay their eggs. It requires care and energy to wage war with them but it will pay.

(To be continued.)

---

#### MORAL ADVANTAGES OF A LOVE OF RURAL PURSUITS.

---

A love of agriculture and horticulture should be encouraged in the young, whether these are to be the professions by which their living is to be made or as a source of amusement for those who may be otherwise engaged. Such a taste will lead to a spirit of enquiry on other subjects, and thus the mind will be expanded and other studies will be more interesting. If, for instance, we are impressed with the beauty of some peculiar flower, or pleased with the exquisite flavor of some delicious fruit, we shall be curious to know what country produced them, and thus the study of "geography" will be made to claim the attention.

When we learn of the wheat which was found in the Ancient Egyptian mummy case, and which germinated after being thus preserved for thousands of years, or read of the parsley or the laurel wreaths of Greeks and Romans; of the sacred oak of the Druids, the rose, the emblem of England; the thistle of Scotland, the shamrock of Ireland, the lily of France, and the maple of Canada, it is

natural to suppose that the students' desire for a knowledge of the history of these, and other countries should be stimulated.

Art and science are amenable to natural laws; therefore, a knowledge of the operations of Nature as regards growth and development will aid the student in scientific research and pursuits.

Architecture and design are the children of Nature, every curve and line are copies of those which go to form the tree, the leaf or the flower. Figure is an essential property of matter, and beauty of design is that which most closely resembles Nature. Poetry and imagination are intimately allied with a love of natural objects. Trees, flowers and fruit are held up to the imagination as emblems of many virtues, and lessons of the deepest import are imparted by their growth.

Habits of industry are inculcated and enforced; no man can be a good farmer or gardener who is not industrious. Inherent indolence is, or at least should be, cured by the necessity of doing everything at the right season if success is to be attained; good and bad habits grow like flowers and weeds. Therefore, any pursuit which tends to uproot the bad so that the good may thrive, become settled and permanent, cannot be too much encouraged.

Love of home is increased and intensified and the domestic affections cemented, and rendered more sacred and lasting by a love of natural objects; there is a sort of freemasonry among the students and admirers of nature, a mystic bond of union which strengthens the ties of friendship and adds to the pleasure of life.

Labor is dignified by agriculture and horticulture: the farmer and gardener are in a certain sense co-operators with the Creator. Although the earth brings forth all that is required for our use, the merciful sentence. "By the sweat of thy brow shalt thou eat bread" is still in force and is not really so much a punishment as a benign command to cultivate the soil, so that it shall bring forth more abundantly. The lot of many a millionaire is less to be envied than that of the faithful and diligent cultivator of the soil.

A neighbourly instinct is evoked, for a good farmer or gardener cannot be a bad neighbour; the diligence with which he cultivates his own land, as regard draining, fencing, keeping good roads, destroying noxious weeds, vermin and insects, has a reflex influence upon the whole neighbour-

hood for good; beside which, is the moral effect of his good example.

Patriotism is fostered in the heart of a good and successful farmer, for he learns to love the soil for the returns it gives him for his directed energies; he loves the country where he is permitted to practice the pursuit of life, liberty and happiness unmolested by oppressive legislation, and only charged with such taxes as are necessary to defray the expenses of the education of the rising generation and to insure the proper and just administration of public affairs.

---

## The Poultry-Yard.

(CONDUCTED BY S. J. ANDRES).

---

### HOW TO BEGIN WITH POULTRY.

The amateur must learn to walk before he can run, and my advice to him is: Try a sitting or two, or purchase a trio, and then if you have had bad luck you will not be out very much money. If the amateur were not too ambitious and would start with a few chickens and give them every attention he would be better satisfied in the long run and his chickens would make better birds than if he had an immense flock and only gave them half the attention they require. Take one dozen chicks just hatched and give them good attention and feed them well all they will eat from the shell until the show time and they will be worth more than two poorly raised broods.

S. J. ANDRES.

---

### ONLY ONE ACRE.

A letter just received tells me of a farmer in Great Barrington, Mass., U.S.A., who is doing a big work and profitable one, too, on a small territory. He has but one acre of ground, on which he keeps three horses, one cow, rabbits, guinea pigs, ferrets, foxes, raccoons, and pet stock, and finds enough land to spare to do an extensive poultry business. He keeps a flock of pheasants and also a good garden.

He started his incubators January 1st 1899, and up to May 21st he hatched 4,503 chickens. After that date, he filled his incubators with duck

eggs. He raises each year between 500 and 600 ducks on the same acre of land.

Mr. Dearing writes to "A Few Hens" as follows: We have also a large house, barn, and wagon house. I lost some chickens; I doubt it was over 15 or 20 per cent. I had more trouble with brooder lamps than anything else. I have one house 75 feet long, heated with hot water pipes. I have six other brooder houses. I also winter 200 hens. When my chicks can live without artificial heat, I sell off the hens and use their quarters for chicks. My chicks are always plump and healthy. But let me say, I don't pretend that I have enough room, but it is all I have.

I should think he would be kept pretty busy if he makes it pay; his loss in chicks is very small.

S. J. ANDRES.

### GOOSE HINTS.

A small partially open shed 6 x 8 feet or larger, is desirable as a shelter. This can be provided with dry litter (planer shavings answer very well) which will furnish the geese with a comfortable place in case of severe or inclement weather. In any ordinary weather, geese will prefer to stay out of doors, and even on a snow bank, to remaining in a building; but if accustomed to it, they will utilize it when the weather becomes severe, and it may save them from having their feet frost bitten, which usually results in lameness.

\*\*\*

Food given, with attention to a proper supply of shells and grit, will largely influence egg-production.

\*\*\*

Boxes or large barrels make good nests and should be supplied this month, as geese are quite apt to continue laying in the place which they select for depositing their first eggs.

\*\*\*

Where more than one colony is kept they may be located a little distance apart, and each colony should be fed on its own grounds and taught to recognize that spot as its home.

\*\*\*

After February 1st some beef scraps two or three times a week may be mixed with the morning feed and a little gluten meal and ground oats will also improve the quality of the mash.

A piece of rotten wood, or an old stump, gives geese a great deal of pleasure and amusement. They will bite off and eat every portion that is sufficiently decayed to be separated from the rest.

S. J. ANDRES.

### COLOR OF WHITE ROCK CHICKS.

The color of White Plymouth chicks when hatched has caused many amateur breeders much dismay and ugly feelings towards the parties from whom they have purchased eggs. Eagerly I watched for the appearance of my first White Plymouth Rock chicks and words fail me to express my annoyance when they were excluded from the shell a dirty bluish, monsey white. I supposed they would be "white as snow". Acting as I was I in an editorial capacity at that time, I was very much surprised to find them coming out in that dirty color, and was loath to have them seen. At the same time, I received a letter from a lady telling me of the same result she had from some eggs she bought at a high figure, asking if it was the correct thing. My answer was rather a severe one on the dealer. I received a letter taking me to task for being so harsh, therefore I wrote her counselling her to wait and see if they would not come to the right color and let me hear from her again. Shortly after the question solved itself, to my great satisfaction, as they grew they were healthy and strong and began putting out white feathers and some birds that came so were exhibited and won prizes and I expect they are to be shown this year and win more prizes. A friend who has bred them for several years says that the "bluer the chicks the bluer the blood."

He knows it from experience. So I tell the readers of the JOURNAL that try the White Plymouth Rocks this: to watch and wait to see the new feathers begin to come out before they condemn the party they buy eggs from. Keep them growing, give them good care and if they are from blue blood you will be satisfied with the result. I am very fond of them because there are no black pin feathers to mar the appearance of the carcass when dressed for market, which is often the case with the barred fowl. The Plymouth Rock of good vigorous stock and well bred is essentially the fowl for the farmer, whether barred or white in color.

S. J. ANDRES.

### PROFITS IN POULTRY.

To the Editor of the JOURNAL OF AGRICULTURE.

DEAR SIR,—Knowing the money that can be made out of a small number of hens if properly attended to I pen this article. Our friend Mr. Andres, who conducts your poultry department, gives some very good articles from time to time. There is only one opinion of his in which I differ from him. He always speaks highly of the Plymouth Rock breed, and says his preference is for the white breed in preference to the barred. I, on my part, think there is no comparison in the two breeds, as far as the fattening is concerned. In the same care and feed, cockerels of the barred type will give at, say, 5 or 6 months, an average of 2 or 2½ lbs more weight than the white, while as winter-layers, they are equally as good if not better than the white. At the experiments made so far at the Government illustrating stations, the barred Plymouth Rocks had had no equals, some of the other breeds, such as Brahmas, Leghorns, making fair seconds, but in no case was the White Plymouth Rock variety in the race at all. I should be the last one to make such a statement against such an eminent authority as Mr. Andres, but I have noticed this same thing occurred two or three times quite recently by his able pen. I might state that in all other respects I quite agree with him, in the profits that can be made with a few well kept hens, properly managed and cared for.

If any farmer wishes to go into egg production as a principal thing, he ought not to have his eggs fertile, as he can certainly get a better price for them; while a fertile egg, in warm days may be greatly injured, although laid in the morning and not gathered until evening, by some broody hen, sitting on it for say 12 or 14 hours. The flavor of that egg is certainly greatly injured, while with an infertile one, no great harm has been done. Some maintain that they cannot very well have the eggs infertile and at the same time have chicks to renew the flock yearly. But it is much easier than some imagine. Pick out a few of your purest bred hens, good layers, well marked of the particular style you like best, and mate them with your pure bred male bird, and keep these eggs altogether for hatching purposes. They must be kept separate from your other laying hens, and in this way, I am sure you should

make an arrangement with some first-class grocer who will always be able to get an average of 5 cents a doz. more for your eggs than the ordinary store eggs will fetch at any season of the year. Take, for instance, when eggs are selling at say 8 or 9 cents a doz. as they very often do in May and June and sometimes in July, and a boarding house wishes to buy say 2 doz. of eggs; the keeper of the house pays 8 cts a doz., the chances are that two-thirds of them will be bad and the balance of the lot only fair flavor. Would the majority of customers not rather pay 5 cents a doz. more for real choice eggs, and be sure they were real fresh good eggs. In winter, it would not matter so much, as hens are not usually so broody and the weather keeps them fresh, but in hot weather they should certainly be kept separate. I have heard some people ask the question will hens lay without a male bird, of course the question is a very ridiculous one, but nevertheless it is a fact that hens will lay equally as well without male as with one.

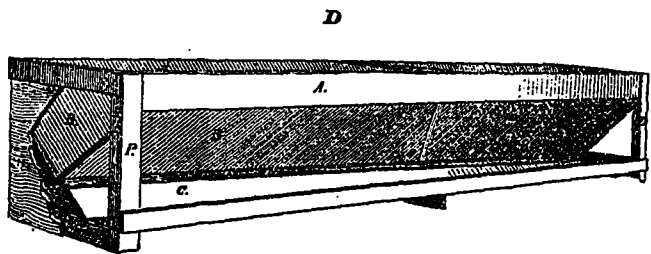
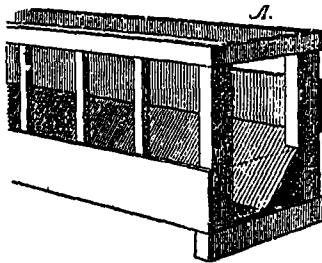
I wish to give the results of a friend of mine in the Civil service at Ottawa who kept 2 hens and 10 pullets, Barred Plymouth Rocks. The pullets were hatched in April 1898, and began to lay in January 1899. There was no record kept until the first of February, and the results for the next 12 months are as follows: February, 138 eggs; March, 231; April, 312; May, 303; June, 227; July, 215; August, 250; September, 200; October, 153; November, 70; December, 55; January 1900, 40 eggs, a total of 2194, it just lacked two eggs of an average of 183 eggs for each hen and pullet for the 12 months; and my friend remarks that his fowls are doing about the same as they did this month last year or perhaps better. I consider this is a record to be proud of! If every hen in Canada would only do half as well, what an income we should have from the hen! I cannot say what my friend got for his eggs, but had he lived near Montreal, he could have averaged between 20 and 25 cts a doz for his eggs; at this lower estimate his eggs would have fetched \$37.00 for the year. Prof. Gilbert says that 50 hens can be fed on 4 cents worth of grain during the summer season, and about double that for the winter months. This would make a total cost for feed \$5.25, leaving a net profit on the 12 hens \$32.25, a net profit on each hen of \$2.68, a very big average; and, as I said before, if all the hens in Canada did half as well, how many millions of

dollars, annually, should we have to spend. I feel certain the day is coming when the hen will hold her own recognised place, and that very soon. I have stated before, and I shall do so again, that the cow, the pig, and the hen, make a triple alliance, that is hard to beat. If our Canadian farmers will just study these three branches and do it thoroughly, a brighter dawn will soon be here for them, and such an era of general prosperity that will be appreciated by every well wisher of our broad domain.

Yours truly,

PETER MACFARLANE.

February 19th, 1900.



## The Flock

### SHEEP RACKS.

By J. S. Woodward, New York. (1)

The best kind will depend upon what is to be done with the sheep. If for fattening sheep, or those being wintered as stores, I have never found a better rack than the one shown at A for a side rack or to stand so that the back side of it will form an alley fence, or if to stand out in the pen, so sheep can go all around it. It can be made double as at B. In either case the posts should be 30 inches high. The flat part of each side or bottom should be 10 inches wide. The slanting pieces of double rack should each be 10 inches and put together as shown. In the single rack, the slanting board should be 14 inches. The bottom strip on both racks should be eight and the top strip four inches wide, respectively. This will make the uprights between sheep 14 inches in the clear and they should lap on both bottom and top strip far enough to be nailed firmly with clinch nails. These uprights should be three inches wide and

planed so as to be smooth, and the distance apart will depend upon size of sheep. Lambs will do well with them one foot from centres, but larger sheep should have them far enough apart so there will be room for sheep to come up and eat without crowding. These strips allow the sheep to come straight up to rack and eat, but prevent one sheep from crowding all others out of rack, which a stout sheep is sure to do without these cross pieces. The slanting boards on bottom have their lower edges slanted off so as to fit tightly upon the bottom board and be well nailed. As will be seen there is a four-inch piece nailed across the rack under the bottom and at top to make rack strong.

Another board should also be put across the end<sup>s</sup> as shown by dotted line to form end. On the back or alley side of single rack should also be nailed a board 10 inches wide, being necessary to hold in the hay. These racks may be of any convenient length, but if no more than 18 feet long will need only three sets of posts or legs. In these racks can be fed hay, silage, roots, and grain by being cleaned of soiled or dirty food, which is very easily done with a wooden shovel made on purpose or by a stiff broom.

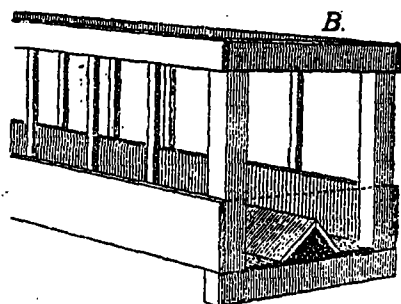
But while these racks are very satisfactory for feeding old sheep or for fattening yearling lambs, nothing could be more unsatisfactory for raising winter lambs or for ewes and lambs at any time. The little fellows would want no better fun and would certainly make the most of it. While the mothers never move about for exercise, the lambs will never be still and they would run and romp back and forth and through these racks and so foul the food that the ewes would never touch it.

For lamb raising, the rack shown at D, a side view, just fills the bill. It holds ample food, is suitable for feeding hay, grain, roots, or silage, and no lamb can get into it.

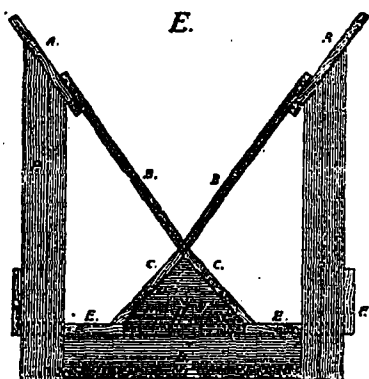
The end view at E will show the construction very clearly. The posts P are 2 x 4 and 36 inches

(1) Woodward is an old Saxon name; from *vudu veard*; the wood-warden's duty was to see that the swine in the *dens* (deep ravines) were duly kept *ringed* and within bounds. Howard—Duke of Norfolk's family name—is really *Hogward*.—En. J. of Ag.

long, with the top slanting as shown. Across these posts at the lower end is nailed a piece of plank (D) four inches wide, upon the middle of which is spiked another piece (D) to support the bottom as shown.



The bottom is made of two boards E, E, each 10 inches wide and the corner notched to fit around the post. Upon these are nailed two other boards, C, C, each 11 inches wide and with its lower edge chamfered off so as to fit upon the bottom board and with the tops coming together so as to form a crease to receive the lower end of slats. On each side is nailed a board F, F, seven inches wide, which boards should be firmly nailed to the posts and to the edge of the bottom board E on each side. The boards C, C, should be firmly nailed to the cross pieces D and D and should also have the bottom boards E firmly nailed to their lower edge. To the top end of the posts should be nailed a board A, A, twelve inches wide, about equal distances above and below top



of posts. From these board A, A, down to crease made by nailing boards C, C, together should run and be firmly nailed at each end, using clinch nails for the upper end, strips one inch thick, two and one-half inches wide and twenty-two inches long, being put on alternately so as to form

a rack down through which the hay might be pulled by the sheep. Instead of having posts under the centre of the rack a piece of plank can be fitted same as at the ends and a brace run up on each side and have a piece put across the top. This will stiffen the rack and still not be in the way of cleaning it out.

To finish the rack, nail boards across the ends so as to close it all up.

All leaves and fine parts of hay will fall into the side troughs and be eaten by the sheep. When grain, roots, or silage is to be fed, the troughs on each side are readily cleaned with a small paddle of the right shape made on purpose.—*Farming.*

## The Horse.

### INJURIES TO HORSES.

#### Over-reach and brushing.

Among the injuries to the structures forming the foot of the horse and the parts closely connected therewith, it will be convenient to consider the two common accidents—over-reach and brushing or cutting.

Over-reach is an injury—a contused wound in fact—to the heel of the fore-foot, inflicted by the toes of the hind shoe. Brushing or cutting is the act of striking the inside of the coronet at the point of junction of the skin with the hoof, or striking any part above that, chiefly the fetlock and near the knee, with the shoe or hoof of the opposite foot. When the blow is inflicted upon any part of the leg above the fetlock, it is described as speedy-cut, because the accident is most common among horses which are fast trotters with high action. The distinction is not however very well defined, as all forms of cutting or brushing take place during the trot.

Over-reach can really only occur in deepground, one essential condition being that one fore foot be held back long enough for the hind foot to reach it and strike the blow. To cause an over-reach it is necessary for the fore foot to take such a position that the advancing hind foot of the same side strikes the heel of the fore foot, and inflicts a wound more or less severe, according to the force of the blow.

Very rarely does it happen that the blow which injures the heel of the fore foot is so severe, that the horse is lame immediately after the accident.

In such cases it may be found necessary to get the animal to the nearest stable for rest and treatment. But in the majority of instances a horse will continue on and complete his journey without much inconvenience. The effects of the injury are however apparent after a few hours' rest in the stable.

Treatment of an over-reach will vary according to the extent of the injury. In some cases a small wound, which hardly seems to be worth any attention, is the centre of a considerable area of damaged tissue, which is likely to undergo septic changes, causing the wound to assume an unhealthy character: while on other cases the wound is simply an incision which will heal rapidly.

The first step is to cleanse the wound from dirt; and this is best done by a stream of cold water. Soaking the foot in hot water is the general practice; but unless the injured heel is hot, swollen, and painful, this is not to be recommended. To secure the healing of the part by first intention is the great thing, and cold water is more likely to assist the process than hot fomentation followed by the usual poultices. Indeed, the use of the ordinary bran or linseed meal poultices which are generally kept on the wound for many hours, is calculated to favour the septic process; and there is good reason to believe that many trifling cases of over-reach, which would heal rapidly if left alone, become unhealthy sloughing wounds under frequent soakings of the foot in hot water and the frequent application of poultices.

An over-reach of an ordinary kind, when there is no serious damage done by the surrounding tissues, may be successfully treated by the application of an antiseptic; but some drying powder is better than ointments or lotion. After thorough washing with a stream of cold water from syringe or hose, the loose portions of horn should be trimmed off by a pair of sharp scissors, and the wound then be sprinkled with a powder composed of one part red oxide of mercury to twenty parts of sugar. The sprinkling should be repeated as often as may be necessary to keep the wound dry. As soon as a scab forms, no further treatment is necessary.

Brushing or cutting sometimes causes a contused wound on the inner surface of the fetlock joint, or near the knee in cases of speedy-cut, attended with a certain amount of swelling, which has the effect of rendering the part more liable to a repetition of the injury.

The slight wounds inflicted in the accident of cutting are chiefly important as indicating the fact that the horse is addicted to the habit and the treatment is naturally directed rather to the prevention than to the cure of the injury.

Cutting or brushing occurs under certain fixed conditions. Either the animal is feeble, and therefore unable to control the movement of its limbs, or there is some malformation in the limbs themselves, or the shoeing is at fault. The first of these causes is readily detected by an examination of the animal, and no special attention need be given to the prevention of cutting—at any rate, until the horse's condition has been improved.

The same may be said of bad shoeing as a cause of cutting. If the shoes are seen to be clumsy and badly fitted, with the inside edge projecting beyond the walls of the foot, there will be no difficulty in rectifying these defects. But in the case of cutting from malformation, it is often very difficult to discover the error in the position of the limbs in relation to each other. A very slight distortion of one or more of the joints of one limb, will give a trifling turn upwards to the foot, quite sufficient to cause the inside edge of the shoe, or the wall of the foot to come in contact with the fetlock of the opposite leg in trotting. To be able to decide as to the proper system of shoeing for the prevention of cutting, it is necessary to see the animal walk and trot, and to note the exact position of the feet during these movements; after which it will be a comparatively easy matter to determine what kind of shoe is most likely to rectify the malposition of the feet.

It is obvious that the position of the inside quarter of the foot may be altered by varying the relative thickness of the inside and outside quarters of the shoe; viz. a thick inside and a thin outside will turn the inside edge slightly upwards, and remove the inner sides of the coronet and fetlock outwards, or away from the opposite leg. Reversing the arrangement of the shoe will bring the fetlock nearer, and turn the inside edge of the shoe further away from the opposite foot. A considerable number of changes in the position of the foot may be effected by arranging the thick quarter of the shoe alternately on the inside and outside of each foot, and in the course of these trials the right method may be discovered for the prevention of the habit of cutting, still in some cases no system of shoeing will be successful in entirely preventing the habit.

W. R. GILBERT.

### MANAGING BROOD MARES.\*

This can hardly be called a veterinary subject in every sense of the term, but as many of the large horse-breeding establishments employ veterinarians as superintendents, it may not be out of place to present a paper on the above subject. On the stock farm where the only revenue derived from a mare consists in the production of a foal, it is necessary for the owner to use his best effort toward getting every one of his mares in foal each year. Then, after getting them in foal, the risk of accidents tending to produce abortion should be carefully considered and all the seemingly minor details of everyday management and feeding should be attended to with the utmost care and attention. As regards the ordinary causes of abortion (exclusive of contagious abortion and those that are a sequel to debilitating diseases, such as influenza, pneumonia, etc.) I have noticed cases that I am sure were produced by the following causes, as the abortion took place in a few hours after the apparent mishap had occurred :

1. Slipping on icy spots and either falling or producing a strain.

2. Fighting with other horses and getting kicked in the abdomen.

3. Getting pinched in box stall doors while entering stall (this is where the doors swing out).

4. Getting into deep snowdrifts or muck holes, thereby producing strains.

5. Mares in searching for a place to rub, or as it seems to be with some of them from pure curiosity, will get into all kinds of traps, such as between windmill towers, or try to get through some opening that is about half wide enough, and I have seen them get into a feeding pen for sucking colts where they had to get on their knees to crawl under ; of course when they come to get out they usually get excited and try to jump over the top, get hung up, and abortion follows.!

6. Another cause is abuse from attendants. Some mares are very stubborn and aggravating about going into the barn at night and have to be driven in from the yard by force ; then, after getting them into the barn it is still harder to run them into their stall ; finally, when they do go into the right stall it is a very natural thing to strike them over the rump with a halter, board, or anything that comes handy just as they jump

through the door. I saw this done once, causing the mare to fall ; this took place while letting them in from the yards at evening and the mare lost her foal that night. Of course there are many other causes that produce abortion, and the foregoing are simply examples of a few of the minor accidents that have come under my notice and might happen at almost any time.

The remedy for this class of accidents is *prevention* ; if there is ice in the yard and there is too much of it to be chopped up, ashes or manure may be spread over it and then wet down so that it will adhere and freeze to the ice underneath. Mares that are mean should not be allowed to run with others, and it may be necessary to let them have a small yard by themselves. Box stall doors should always be fastened open, before the mares are let in for the night and it is wonderful how soon each one will learn her place and seldom make a mistake, or get into the wrong stall. In regard to deep snow-drifts in yards, I remember seeing, during the severe winter of 1896-97, snow fences in the yards of the largest horse farm in Iowa. They were built on the plan of snow fences in use on the railways, and were placed around deep drifts to keep the brood mares from getting into the deep snow.

I prefer earth floors in the stalls and alleyways, as the danger of slipping is less than on a plank floor, especially in winter, when their feet on very cold days become balled up with snow and ice ; sometimes elevating them from the ground three or four inches, and it often seems advisable to knock the balls out of their feet before they are let into the stable. The approaches to the stable door should be arranged so there will be no still to step over, as a mare will sometimes get just a slight toe-hold with one hind foot in going over a sill and slip off just when the most weight comes on the foot, thereby causing her to either knuckle over at the fetlock, or causing abnormal extension of the hock and general concussion. As regards diet we should be careful to see that the food is of the best, and that no smutty corn or rusty oats are fed. It is also rather dangerous to allow pregnant mares free access to straw stacks, as is done in the West. Flax straw is particularly harmful, as is any food that acts as a purgative.

It will pay the brood mare owner to try his mares often in the breeding season, and the plan adopted by most breeding farms of any size is to try all of the mares twice a week, for example,

\* Paper read by Mr. J. P. Foster, at meeting of Veterinary Society, Ontario Veterinary College, Toronto.



say Wednesday and Saturday, which would be known as "trial days," and on these days each mare is caught and tried. This is kept up until it would be too late in the season to breed them again, even if they did come in heat. Most farms keep a "teaser" for this work. (1) This method of trying mare obviates the necessity of figuring out trial days ahead for each individual, as they are all gone over every three days, and if one comes in heat she is sure to be noticed. I have seen mares that were bred in April refuse twice a week from May to July and then come in season. In cases of this kind it is probable that abortion takes place, but owing to the early stage of impregnation the external signs of abortion, such as soiled condition of vulva and tail and tucked up appearance of the abdomen, are not noticed. Sometimes a mare is noticed that it is almost impossible to determine whether she is in heat or not and will allow a horse to tease her and will stand perfectly quiet. The only way to tell is, that if she is not in heat she will object if the horse attempts to cover her; these kind of mares are a source of continual annoyance to all concerned.

In warm weather the best place for a mare to foal is out of doors on a good grass plot, but in the early spring arrangements must be made for foaling inside in a good sized box stall in which there should be plenty of bedding. Mares that foal inside should be watched both night and day, so that in case of non-rupture of the foetal membranes during labor they can be opened by the attendant before the foal suffocates—(this also applies to mares foaling out of doors). Another reason for requiring an attendant is to prevent the mare from lying down with her hind parts against the sides of the stall, thus interfering with the delivery of the foal; also to catch the foal from those mares that persist in foaling in the standing position and in so doing preventing the foal from falling and forcibly striking the floor. These are the principal difficulties met with by the attendant, exclusive of course of the many different phases of difficult parturition. Immediately after foaling, the foal should be carefully placed in one corner of the stall where the bedding is usually comparatively dry, the stall should then be thoroughly cleaned out, removing the after-birth and all the wet straw and drying off the floor beneath as well as possible. The stall should be rebedded

with dry straw at once, before the foal attempts to stand, as it is bad policy to allow a young foal to slip and sprawl about on a slippery floor. This should be done regardless of the time of night, or how sleepy the attendant may be, and it will be found that small attentions of this kind will go a long way toward making the business a success.

---

### CHESTNUT COLOR IN HORSES.

---

This question is receiving some attention from the English horse breeders. With the exception of the Cleveland Bay, the Yorkshire coach horse and the Suffolk, breeders in that country have never devoted themselves seriously to regulate the color of their horses. The theory that color is largely determined by the amount of pigment in the blood during certain stages of germ growth is said to find favor with many breeders, but there does not appear to have been any serious attempt by believers in this theory to make any practical use of it. This pigment theory may account for the growth of the chestnut color in that the absence of coloring matter in the pigment may produce this shade.—*Farming.*

---

At the last County Court of Perth the grand jury made the following recommendation: "We would recommend that the rules governing the rights of persons travelling or driving on the public roads should be posted up for the information of the public. It would be a great benefit to the winter roads if sleighs were made to track as wide as wagons. We have examined the statistics you gave us about statute labor, and approve of your suggestion that the labor should be abolished and the value of that labor expended on the roads, under the direction of a practical engineer."—*Farming.*



(1) Poor deluded beast! Ed.