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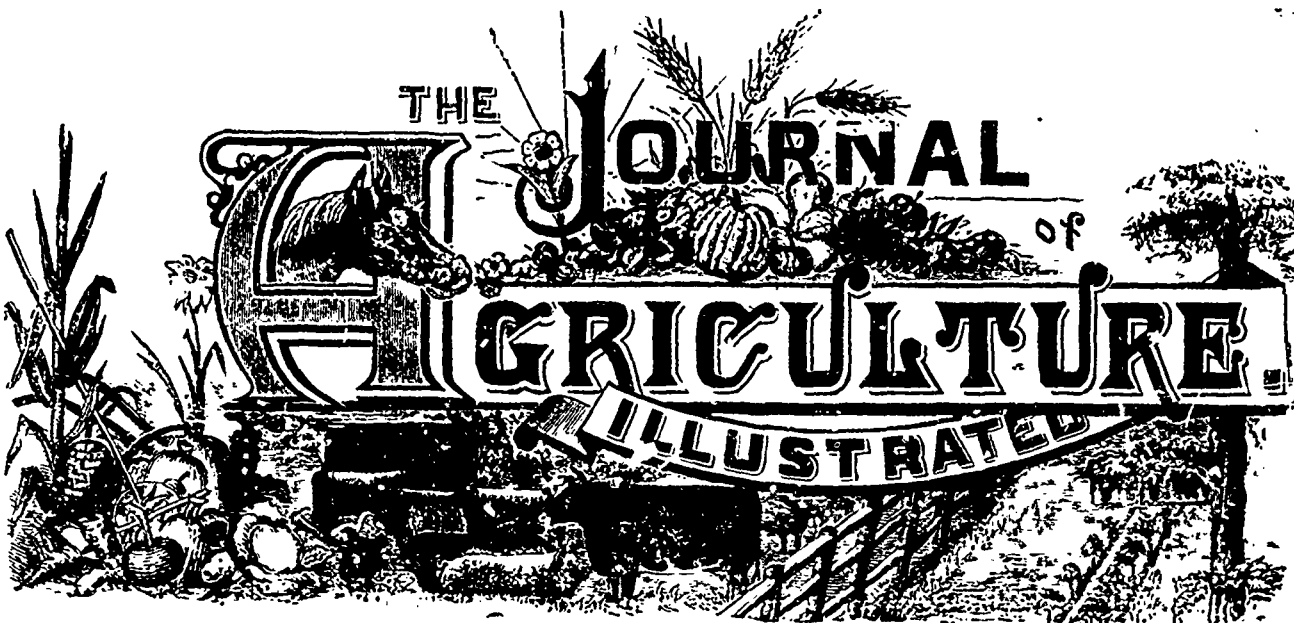
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**NOTICE.**—The subscription to the *Illustrated Journal of Agriculture*, for members of Agricultural and Horticultural Societies, as well as of Farmers Clubs, in the province of Quebec, is 30c annually, provided such subscription be forwarded through the secretaries of such societies.—**EDITORIAL MATTER.** All editorial matter should be addressed to A. R. Jenner Fust, Box 109, Lachine, Que.—or to Ed. A. Barnard, Director of the *Journals of Agriculture, &c.*, Quebec.

**OFFICIAL PART.**

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**PURE CANADIAN CATTLE.**

Parties wishing to buy or sell pure bred Canadian cattle will find it advantageous to apply to

J. A. COUTURE, V. S.,  
49 Garden St., Quebec.

**PROVINCIAL COMPETITION OF AGRICULTURAL MERIT.**

TO FARMERS.

Such are the conditions of this competition, that no industrious farmer need hesitate to compete for fear that his want of means should prevent him from contending with competitors more favoured in this respect than himself. The Judges

will have to distinguish, as their principal duty, those who make the best of their farms, without exhausting them, at the least outlay compared with the net profit they derive from them.

True merit and industry, not wealth, will insure success. A diploma and a silver medal will be awarded to those who obtain the degree of: *Very great Merit*, that is, 85 points out of 100 assigned to perfect cultivation.

A diploma and a bronze medal for the degree of: *Great Merit*, i. e. 75 points out of 100.

A diploma for the degree of: *Merit*, i. e. 65 points out of the 100.

For the purposes of this competition, the province has been divided into five agricultural regions, and the competition will be held this year in the region of Montreal, comprising the following counties:

Jacques-Cartier, Hochelaga, Laval, Deux-Montagnes, Soulanges, Vaudreuil, and that part of the counties of Argenteuil and Terrebonne containing the parishes and townships not included in the Laurentides.

**COMPETITORS.**

Shall be allowed to compete:

Those who have won prizes in the county or county divisions competition's for the best cultivated farms.

In all cases, the competitor must cultivate, whether as proprietor or as tenant, a farm of which at least *sixty arpents* in superficies shall be under cultivation, whether in hay, pasture, garden-crops, vegetables, orchard, small fruits, &c., &c.

ENTRIES.

The entries made on forms provided for that purpose must be in the hands of the secretaries of the agricultural societies of the counties in which the competitors reside before the 15th May next. These blanks will contain a certain number of questions, for the information of the Judges, to which the competitors are requested to reply.

The secretaries of the agricultural societies will forward the entries received by them to the secretary of the Council of agriculture on or before the 1st June next and no entry will be received after that date.

PROGRAMME.

DETAILS OF THE COMPETITION, AND BASIS FOR THE APPORTIONMENT OF POINTS.

<i>Points common to all competitors :</i>	Number of points.
1. System of cultivation best suited to the soil and circumstances.....	4.
2. Division of the farm into fields .....	2.
3. Fences .....	4.
4. Destruction of weeds.....	3.
5. House and buildings.....	9.
6. Agricultural tools and implements.....	5.
7. Manure .....	5.
8. The greatest degree of order of method and of carefulness, as exemplified by the working of the farm as a whole and in the condition of each part individually.....	5.
9. Accounts—expenditure and profit.....	3.

*Points, subject to modification according to the different (cases).*

10. <i>Permanent improvements</i> , in relation to the peculiar circumstances of each farm ( <i>the apportionment of these points is left to the discretion of the Judges</i> ), such as: the clearing off and utilisation of stones, levelling, straightening of water-courses, drainage and water-furrowing, ditches, cross-furrows, so..-improvements ( <i>amendements du sol</i> ), such as: clay on sand and sand on clay soils, turf, ashes, &c., ploughing-in green-crops, shelter for cattle, plantations of forest-trees, for shelter and other purposes, condition of and improvements in the sugary, where there are maple-groves, economical and handy watering places, siloes, state of the roads on the competitor's farm, and any other profitable improvement .....	15.
11. <i>Live Stock</i> , race, breed, quality, number, adaptation to the soil, climate, markets, and to other circumstances that should guide the intelligent farmer in his selection, (under this head are included horses, cattle, sheep, pigs, poultry, &c.) .....	15.
12. <i>State of cultivation of</i> : grain, meadows, pastures, green-crops, hoed-crops, orchards, gardens, small-fruits, &c. ( <i>apportionment of these points is left to the discretion of the Judges</i> ).....	30.
	100.

OBSERVATIONS ON THE PROGRAMME.

In their decisions, the Judges will be guided by the perfection of the cultivation, whatever may be the quality of the soil, the course of cropping, or the system of improvement pursued. They will endeavour to ascertain how far the com-

petitor may serve as a *model or example*, by the way in which he works his farm, without exhausting it, and at the least expense compared with the net profit he derives from it.

In judging the buildings, the Judges shall begin with the farm-house, its situation, the precautions taken to secure its healthiness, drainage, ventilation, water supply &c., &c.

Not only shall the barn, the stables and cow-stalls, the piggery, sheep-hed, &c., be carefully inspected, but special attention shall be paid to the dairy, the poultry-house, the ice-house, &c. In this inspection, as well as in that of the farm-implements and tools, the Judges shall take particular notice of any improvement or useful novelty they may find, and give such a description of it in their report, that any one who chooses may make a trial of it and apply it to his own benefit, at home. At their discretion, the Judges shall grant a number of points, in proportion to the importance of the said improvements and novelties, which points may be taken from the remainder of the points mentioned in the programme, not previously appropriated.

In their apportionment of the points, the Judges shall take into consideration, not only the more important operations of agriculture, but the details: butter, cheese, poultry-rearing, bees, domestic productions, &c.; and shall consider, as far as possible, if these specialties are well suited to the circumstances of the competitor, and are of such a nature as to assure him a genuine profit.

The Judges shall ascertain if every thing they are called upon to inspect on a farm, such as animals, implements, &c., really belongs to the farm in question, and forms part of its genuine stock.

**WEEDS.**—When the Judges shall note any instance of *serious negligence*, on the part of a competitor, in contending against the growth of weeds, not only shall they refuse to grant any of the points assigned in the programme to the item: "Destruction of Weeds"; but, furthermore, they shall deduct a certain number of points, not exceeding *five*, from the points given by them for other matters, and they shall make special mention of this in their report.

INSTRUCTIONS FOR COMPETITORS IN MAKING THEIR ENTRIES.

The competitor shall give:

- (a) his name and Christian names in full;
- (b) his place of residence, his parish (or township), range (or concession);
- (c) his post-office;
- (d) the size of the farm, for which he desires to compete, its acreage and situation;
- (e) its distance from the nearest railroad station or steam-boat wharf;
- (f) he shall also state whether he occupies the said farm as owner, tenant, or *farmer*, and shall give the amount of the municipal valuation of the farm;
- (g) he shall give a detailed list of his stock kept and supported on the said farm for which he competes, mentioning the number of horses, colts, milch-cows, butchers' beasts, bulls, young animals, sheep, pigs, &c., showing, as far as possible, the breeds to which they belong;
- (h) he shall state fully the system of cultivation he pursues;
- (i) he shall state if he buys manure, and if so, how many one-horse loads a year; or if he buys lime, plaster, or other commercial fertilisers, how much and at what price.
- (k) he shall give the quantities of the different grains, fodder, potatoes, vegetables, &c., he grew last year.

The form of entrance, which will be sent to the competitors by the secretary of the agricultural society to which they

belong, contains blanks in which replies to all these questions are to be entered. At first sight, they will appear too minute; among others, those about turkeys, ducks, geese, fowls, &c.; but every good farmer knows the importance of these details, and when people consider that, with a system of breeding so imperfect as ours now is, the exportation of eggs and poultry from Canada amounted in the year ending June 30th 1888 to two and a-half million of dollars, it will be acknowledged that this is a detail which deserves serious consideration. It is not, then, exacting too much from any intelligent farmer if to ask him to try and reply to those questions, as much for his own sake as to facilitate the task of the Judges.

Competitors are requested to add to their answers a small plan or outline of the farm for which they intend to compete, showing its divisions or fields, with the dimensions of each, the situation of the buildings, the water-courses, ditches, &c. It is not expected that this plan will be drawn with the nicety of a surveyor; all that is required is an outline that any intelligent farmer, either himself, or with the help of his neighbours, can make at home.

WM RHODES, *Comm. of Agricul.*

Quebec, March 24th, 1890.

ENTRIES TO BE MADE BY COMPETITORS IN THE COMPETITION FOR AGRICULTURAL MERIT.

(See explanatory notes annexed.)

- (a) Name and Christian names of competitor :
- (b) His abode :
- (c) Post-office :
- (f) To say if he be owner, tenant, or farmer (*fermier*).
- (\*) To state the distance, in miles, from a steam-boat wharf.

How far from a railroad station.

(h) My farm is valued at \$ \_\_\_\_\_. I value it, for farming purposes, at \$ \_\_\_\_\_.

The competitor will reply, to the best of his belief, to the following questions, to assist the Judges as much as possible in their work.

Of how many arpents (or acres) does the farm entered for competition consist ?

- Give the number of acres or arpents of arable land :
- “ of pasture not arable :
- “ in bush :
- “ in orchard :

Extent of garden : —feet x —feet.

(g) Please give the number of animals you keep on the farm in question : mentioning the breed, and if they are thoroughbred or crosses.

	Number.	Breed.	Thoro'-bred.	Crosses.
Stallions .....				
Brood-mares .....				
Other work-horses .....				
Colts and fillies 3 yr. old .....				
“ “ 2 “ .....				
“ “ 1 “ .....				
“ “ foals of the year .....				
Bulls .....				

Continued.

	Number.	Breed.	Thoro'-bred.	Crosses.
Milch-cows .....				
Butchers' beasts 2 yrs and upwards .....				
Breeding cattle 2 yrs and upwards .....				
Breeding cattle 1 yr and upwards .....				
Breeding cattle calves of the year .....				
Rams .....				
Ewes .....				
Breeding lambs .....				

Sort of animal.	Number.	Breed.	Thoro'-bred.	Crosses.	Remarks.
Boars .....					
Breeding sows .....					
Young pigs .....					
Turkey-cocks .....					
Breeding do. hens .....					
Young do .....					
Cocks .....					
Hens .....					
Chickens .....					
Ganders .....					
Geese .....					
Goslings .....					
Drares .....					
Ducks .....					
Ducklings .....					

Number of agricultural implements belonging to the competing farm : Pair-horse \_\_\_\_\_ one-horse \_\_\_\_\_ ploughs \_\_\_\_\_  
 Pair-horse \_\_\_\_\_ and one-horse harrows \_\_\_\_\_  
 Grabbers or scarifiers, one-horse \_\_\_\_\_ two-horse \_\_\_\_\_  
 Horse-hoe \_\_\_\_\_  
 Rollers, one-horse \_\_\_\_\_ and two-horse \_\_\_\_\_  
 Grain-sower one-horse \_\_\_\_\_ two-horse \_\_\_\_\_ hand-sower \_\_\_\_\_  
 Turnip, &c., drill : one-horse \_\_\_\_\_ two-horse \_\_\_\_\_  
 Other implements for working the land :  
 Name \_\_\_\_\_ two-horse \_\_\_\_\_ do. one-horse \_\_\_\_\_  
 do. hand \_\_\_\_\_  
 Two-horse mowers \_\_\_\_\_ one-horse do. \_\_\_\_\_  
 Hay-rake : \_\_\_\_\_ Hay-tedder \_\_\_\_\_  
 Hay-cart or waggon (summer) : one-horse \_\_\_\_\_ two-horse \_\_\_\_\_

Hay sleighs : one-horse ——— two horse ———  
 One horse reaper ——— two-horse do. ———  
 Reaper and binder ———  
 Other two-horse implements ———  
 Other one-horse implements ———  
 Dung carts ——— Other carts or waggons.  
 Dung sleighs ——— Other sleighs for farm-use.

HARVEST OF 1889.

(l k) Kind.	Number of acres or arpents.	Bushels harvested.
Wheat .....		
Barley .....		
Oats.....		
Pease .....		
Beans .....		
Maize .....		
Other grain.....		
Potatoes .....		
Turnips.....		
Mangels.....		
Carrots .....		
Other roots.....		
Green-crop—kinds of.....		
Silo-maize .....		
Clover-meadow.....		
Other meadow.....		
Pasture.....		

The competitor is requested to say ;  
 How many acres he breaks up annually : ——— meadows  
 ——— acres ——— pastures ———  
 How long have the oldest meadows been laid down ? ———  
 years.  
 How long have the oldest pastures been down ? ——— years  
 And during how many years had you ploughed and sown  
 these pieces before you laid them down to meadow or pasture ?  
 1) Please state if you buy any dung ——— one-horse loads.  
 do do plaster ——— barrels.  
 do do lime ——— bushels.  
 do do unleached ashes ——— bushels.  
 do do leached ashes ——— bushels.  
 do do superphosphate ——— tons : state  
 kind and cost.  
 do do other fertilisers : state kinds and  
 cost.  
 Also please say if you buy any extraneous food ; in order  
 to rear or fatten more stock on your farm :  
 Bran ? ——— tons. ——— price ———  
 Grain ——— state kinds ——— bushels. ———  
 Moulée do ——— lbs., price per cental. ———  
 Hay do ——— do 2,000 lbs. ———  
 Straw do ——— do 1,200 lbs. ———  
 Other kinds of food ——— give details, if you please. ———

ACCOUNTS.

The competitor would greatly assist the Judges if he would give an estimate of what he sold in 1889, and the prices received for animals (*en animaux*), stating the kinds and the sum total received for them.

Grain ——— do ——— number of bushels ——— total price.  
 Hay ——— quantity " "  
 Straw ——— do " "  
 Butter do " "  
 Cheese do " "  
 Milk sent to the creamery ——— quantity " "  
 do do factory ——— do " "

Other sales of farm-produce during the yr. " "  
 Also, an estimate of what he has spent, beyond the family expenses, for divers purchases connected with his farm.

These details will show the style of accounts required from the competitors.

PLAN OF THE FARM AND BUILDINGS.

If it would not cost the competitor too much time and trouble, it would be useful to add to the plan of the farm another plan showing the position of the house and of each of the farm-buildings, and, if possible, the way in which the cow-stalls stables, piggery, &c., are divided, in order that the Judges may more easily point out the improvements, that may serve for models, as much as regards the economy of space, as the saving of time in feeding the cattle.

DE OMNIBUS REBUS.

March 4th, 1890.

Farmyard dung.—This manure contains, on an average, per ton :

Ammonia = to 60 lbs. sulphate of ammonia = 15 lbs.  
 Potash 12 lbs.  
 Phosphate of lime 15 lbs. = 6.87 phosphoric acid.

What, then is this dung worth ?

15 lbs. ammonia at 13 cents a pound = \$1.95  
 12 lbs. potash at 4½ cent " = .54  
 6.90 lbs. phosphoric acid at 7 cts " = .49

\$2.98 per 2,240 lbs. =

\$2.65 per 2,000 lbs. But this is on the supposition that the three constituents above named are in a perfect state of readiness to do their duty, that there be no waste by washing or evaporation, and that the application of the dung to the land be conducted in the most economically practical manner.

As a matter of fact, the potash, ammonia or rather the nitrogen, and the phosphoric acid in farmyard dung as generally carried out of the cowstalls and stables, are all in a most unprepared state, and until the manure and the soil have been thoroughly mixed together and the fertilising constituents of the former set free and liquified by the rain, the plants may search for food during many a day of the growing season without finding any.

Therefore, taking a fairer mode of calculating the value of the ammonia, potash, and phosphoric acid, contained in ordinary farmyard dung, I should be inclined to proceed as follows ; the ammonia, as nitrogen, in ' tankage ' is valued by the agricultural chemists of the United States at 8½ cents, the phosphoric acid at 4 cents, and the potash at 4½ cents a pound, so our account will stand thus :

Nitrogen, 12½ lbs. at 8½ cents = \$1.06  
 Phosphoric acid, 6.90 lbs. at 4 " = 28  
 Potash, 12 lbs. at 4½ " = .51

\$1.85 per gross ton = \$1.65

per 2,000 lbs., and I cannot say that I should like to pay much more for it. Upon what does Mr. Parmlly, in the succeeding paragraph, grounds his calculation! In which of Sir John Lawes' writings does he find the advice to "apply fertilizers and plow in certain leguminous crops?" Lawes allows the practice in places far removed from markets, but he, as well as nine-tenths of both the scientists and farmers of England, would never dream of burying such valuable food for cattle as leguminous plants.

Mr. Brown, of the College at Guelph, had to value his dung at \$2.40 a ton, to make both ends meet. I saw \$10.00 a ton set forth as its true practical value only the other day. I add, for the benefit of those who may wish to calculate its worth for themselves the following from the transactions of the Agricultural Department at Washington, dated 1889 :

Potassium oxide..... 4½ cts. a pound.  
 Phosphoric acid..... 6 cts. " "  
 Nitrogen..... 16½ cts. " "

16½ cts. for nitrogen equals, as nearly as possible, 13½ cts. for ammonia. Mr. Vasey's price, for sulphate of ammonia—25%—at his works at Hochelaga, is \$3 25 a hundred in small quantities: see Journal for June 1888: "At present, I ask for 25% sulphate, 3½ cents per pound per barrel of 360 lbs. and \$3.25 per 100 lbs. for two tons lots; cash, f. o. b. Montreal. For larger quantities I could say rather less. I supply all the requirements of the Standard Fertiliser Co.

Yours faithfully,

(Signed)

J. C. VASEY.

To which passage, I see, I added a note: "Perhaps, if I keep on hammering at it, I shall get the price of phosphoric acid equally reasonable." And I did, too, for available phosphoric acid is now 6½ to 7 cts a pound, whereas, when I wrote, it was 10 cents!

**Barnyard Manure and Humus.**

EDS. COUNTRY GENTLEMAN—On page 104 of your paper a very valuable article, by Mr. U. H. Hillman, is presented. His statements are clear and practical. I once gave the advice that one should not farm more land than he could dress with barnyard manure once in at least seven years. It may be said, "What is to be done when animals are not kept?" The advice needs little modifying, for the benefits to be derived from the organic elements contained in yard manure can be gotten by plowing under some growing crop.

So the important truth is discernable that successful treatment of the soil demands something more than what we constantly hear of in "commercial fertilizers," viz., nitrogen, phosphoric acid and potash. What is this something so important—contained in both yard manure and growing crops? It is "humus," a result of the decay of vegetable matter. Among the pieces of good advice Sir John B. Lawes gives, is "apply fertilizers and plow in certain leguminous crops." He knows that it is not possible for all to have free access to manure heaps; but he tells us that plowing in crops answers the same purpose as the application of yard manure.

Let us inquire whether well kept barnyard manure is not worth more than it is usually bought for. Prof. S. W. Johnson values a ton of it at \$5.77, viz.:

9 lbs. phosphoric acid, at 16c ..... \$1.44  
 9.8 lbs. potash, at 7c..... 0.68  
 14 lbs. ammonia, at 25c..... 3.65  
 -----  
 \$5.77

*Deep ploughing.*—My good friend, Dr Hoskins, has, in the Vermont Watchman, a very sensible remark on the danger of "unpractically trained men" being influenced by "theoretical talk." He quotes an instance (see below) of the injudicious application of deep ploughing on a clay-farm in Rhode Island, and adds: "Since that, most of the theorists have stopped talking of deep ploughing."

Might I, certainly not an unpractically trained man, be allowed to say that the failure of deep ploughing, many instances of which have come under my observation, may generally be traced to two sources: either the crop sown immediately after the deep furrow has been a grain-crop, or the deep ploughing has been given in spring.

In the South-east of England, where I farmed for 15 years, the best men observed, in connection with this subject, three rules: never to bring too much of the raw subsoil up at once; never to plough deeply for any crop except a manured root crop; and the deep furrow was invariably given before Christmas. The land, in Kent, was farmed on the 4-course plan—roots, barley, ½ seeds ½ pulse, wheat; and the wheat-stubble, after having been cleaned in the fall with the broad-share-plough, harrows, roller, and horse-rake, was broken up, from 10 to 12 inches deep, with the old *turn-rice* plough, drawn by four heavy horses, about November. This depth was considered sufficient, and as an acre a day was the usual *stint*, it was not an expensive job. About the year 1834, when I was a mere boy, a sudden irruption of Scotch *bailiffs*—foremen, grieves, farmers—took place; they introduced pair-horse ploughs and shallow ploughing—six and seven inches—throwing aside the old plough with its wooden beam and galloways, and, though otherwise they were good farmers, in a very few years the land refused to bear anything like the crops it had been accustomed to yield under the old system. I should not be afraid, after 30 years experience of the Canadian climate, of ploughing any soil deeply—but, I should not go more than two inches below the old furrow the first time.

*Editorial Notings. DEEP PLOWING.*—The influence of theoretical talk upon unpractically trained men, even of great intelligence, was strongly shown in a notable failure on a clay farm in Rhode Island, where wonders were to be wrought by deep-ploughing and underdraining. The occupant was all right as to the latter, but bitterly disappointed in the results of the former. "He might have known better," we have heard it remarked many times. Possibly; but he never could know so well as after trial of it, and since that most of the theorists have stopped talking of the plowing. The truth is, the nature of crops most raised in America, and the character of most of our arable soils, require only moderate depth of tillage—one that will keep the roots of the crop in the warm upper stratum of earth, within reach of the manure, the air, the sun, and the light and fleeting rains of our American summers.

*Rape.*—Ha, ha! at last the value of this crop is beginning to be recognised. I have been trying to vulgarise it here for many years, but with very trifling results. The subjoined paragraph is from an exchange:

RAPE (OR COLE).—"Rape, Broad Leaved Dwarf Essex."—Extensively cultivated for soiling purposes; as a feeding plant the yield is abundant, and is very nutritious—nearly all animals are fond of it. "The Ontario School of Agriculture,

Guelph," recommend the use of Rape very strongly, especially as food for sheep, and it contend that the farmers of the Dominion do not sow it to the extent they should do. Sown in May, either broadcast or in drills; 4 to 6 lb, broadcast per lb, 11c., or 15c. postpaid. Special quotations for large quantities.

Sown broadcast, rape requires no hoeing.

*Mangels in the States.*—I really begin to believe that there is a future for the root-crop in the Northern States. A year or so ago, I published an extract from the Vermont Watchman, containing a speech of Mr. Aitken's, in which he spoke of the feasibility of growing mangels with a profit in the State of Vermont. This year, Dr. Hoskins publishes the following in the same paper:

"Beets at four cents a bushel.—Mr. Aitken, manager of the Billings farm at Woodstock, gives the following account of his last year's crop of stock beets (Norbiton Giant). Those who were interested in his paper read at the dairymen's meeting a year ago will be glad to read the following: "This year we raised 124 tons from a fraction over two acres, at a little more than fifty tons per acre, the largest crop I ever raised; and as the expense of growing them, with the exception of harvesting, is practically the same as would be required for a crop of twenty-six tons, it is very evident that they would cost much less than the smaller crop. As this was an unusual crop, we will take an average one of thirty-four tons and call the cost of raising them four cents per bushel. We raised a year ago on 2.18 acres seventy-five tons—thirty-four tons, 282 pounds, or 1,138 bushels per acre, which at \$1.48 per ton, the food value given them by chemists, gives us \$63.13 per acre for the roots alone. The leaves, according to chemical analysis, are worth \$2.07 per ton, and would weigh 10.5 tons, which at the value just given would amount to \$22.55, making the whole crop, roots and tops, \$85.68, deduct \$45.52, the cost of raising them, and we have a net profit of \$40.16."

I do not quite understand the figures; for instance: the mangel leaves are said to be worth \$2.07 a ton, and the roots \$1.48, a ton: 59 cents less! This must be a mistake, as, practically, the leaves are very poor food, and theoretically, according to Wolff, the roots are worth \$2.80, a ton, and the leaves, \$2.00. In England, the leaves are rarely harvested; the sheep—generally the ewe-flock—are run over the field after the roots are carried off, and they tread in more than they eat.

This crop of mangels is almost equal to Mr. Séraphin Guévremonts great crop of swedes—grown in 1887—which I laid at 1,600 bushels to the acre.

I have no doubt that, in time, Mr. Aitken—a Scotchman I presume—will persuade his neighbours that singling roots is not such a terribly expensive job as some people think.

*Analysis.*—Professor Henry "finds oats a very fine feed for milch-cows," "They have been esteemed so to be in England for some hundreds of years. But, then, the professor adds with perfect honesty: 'They have a value beyond that shown by any analysis.' "So, I may say, have swedes and other roots.

*Prices of nitrogenous manures.*—In England, to-day, nitrogenous manures are reasonable enough in price. In sulphate, ammonia is worth there, 11 cents a pound, in nitrate of soda, 10 cents. As we can get ammonia here, in sulphate, for 13 cents, there is no temptation to import it, an end at which I have been striving for the last 9 years.

*Testing fertilisers.*—As, from all I can gather, there seems every prospect of a good trade being done in artificial manures

in the province, and as there may be some purchasers who would like to be certain that the lots they are dealing with come up to the analysis as marked on the bags, it would not be amiss to lay down certain rules as a guide to the taking of samples intended to be submitted to the government analytical chemist for his inspection. I think the following, always under submission, would answer the purpose:

Immediately on arrival, one bag out of every three, for small lots, four of every ten, for large lots, should be opened—before one or more witnesses—the contents thoroughly mixed, and from  $\frac{1}{2}$  a pound to a pound taken. This should be packed in a perfectly dry box, and forwarded to the government laboratory without delay, another equal weight being sealed up in another dry box and retained by the purchaser for fear of accidents.

*Hunting and barb-wire fences.*—It is a very curious fact, but a fact that most observant minds must have noticed, that when anything has been brought by art and skill to perfection, the knell of its doom may be soon expected to toll! Towards the year 1840, the coaches on most of the English high-roads were under such consummate management, and the horses were so carefully selected and so equally matched, that although they carried from 14 to 16 passengers, with their luggage, besides the guard and the coachman, the contractors had no difficulty in keeping the time, which was in general, 10 $\frac{1}{2}$  miles an hour, including stoppages—equal to 12 miles an hour all through. In five years from the above date, the railroads had driven every coach off the road, except those running in the North of Scotland and in Cornwall.

And so, now that hunting whether of the fox, the stag, or the hare, has arrived at a pitch of perfection entirely unknown to Beckford or any of his contemporaries (circa 1760); when hounds run faster, carry a better head, and, in spite of their increased speed, are as patient over a cold scent as the coarser bred hounds of my younger days; when the horses are better bred and the servants (huntsmen and whips) are more sober and equally skilled in judging of the line of the fox; now, when all things in the hunting field are as near perfection as they can be, I see by the English papers that many Masters, are talking of giving up their respective countries on account of the injury done to both horses and hounds by the horrid barb-wire fences.

*Use of artificials and dung.*—A question has been asked me as to the benefits derived from the addition of a moderate dressing of artificial manure to a half-dressing of dung. The answer is simply this: for some weeks after the application of farmyard manure to the land, it exerts no influence on the growth of the crop sown. The fertilising constituents of the droppings of animals must first be converted into a liquid state before they are fitted for plant food, and this, together with the previous nitrification of the ammoniacal matters takes some time. But the artificials have been converted by the chemical action induced in their preparation into a readily accessible form, and the tiny radicles of the young turnips or mangels can feed upon them almost immediately after they protrude themselves from the seed, the natural moisture of the land liquefying them in 24 hours. Thus the young plants find themselves supplied at once with food suited to their infantine powers of imbibition; they start at once into rapid growth; and continuing to feed upon their carefully prepared sustenance for the first month or so, at the expiration of that time their now robust roots find themselves in contact with the dung which by that time will have become perfectly cooked—so to speak—and thoroughly adapted to carry on their growth to maturity.

It is this pushing forward of the young plant by artificials that



enables the farmer to grow swedes and turnips in places where the fly would, otherwise, devour these crops as fast as they came up. In the best farmed districts of the Eastern counties of England, no one would dream of sowing swedes or turnips without a partial dressing of artificials—generally superphosphate—; and this is not a novel practice, but one that has obtained, to my knowledge, for more than forty years. A large crop of turnips or rape is raised by a combination of dung and superphosphate, and this crop is either wholly or partially eaten on the ground by sheep, with the effect of leaving the soil well stocked with both nitrogenous and phosphatic matters. This, of course, on the lighter land. On the heavy soils, too heavy to bear the treading of the sheep in winter, the roots are, as with us, given to cattle in the sheds, with the addition of cake and meal, and by this means the residual effect of the artificials is perpetuated.

**Cheese**—I see by my Gloucestershire Chronicle that at Berkeley cheese-fair, held on February 4th, single Gloucester cheese fetched from 58c. to 63c. the cwt. (112lbs). On the same day Messrs. Hodgson's quotations for best Canadian Cheddars were from 50s to 50s 6d. for the same weight! As all our family tenants sell their cheese at Berkeley fair, this rather gratified my feelings, as I was beginning to fear that our people were falling into evil ways.

**Spring lambs.**—On March 2nd, last Brown Bros., of St Catherine Street, Montreal, are reported to have given \$8. 00 for a spring lamb! Two Dorset-horns, photographed and engraved, appear on pp. 56 of this number of the Journal. These are the sheep expressly used for breeding early lamb in England. Nothing pays better on a farm than a good crop of lambs dropped about New-Year's-tide. At ten weeks old, if properly fed, they should average 32lbs. to 36lbs. of carcase. Food: cake and clover-chaff for both lamb and dam, with roots, if any; and a few pease for the lambs out of the ewe's reach. A hurdle with a hole large enough to allow the lambs to run through, but ewe-proof, is all that is needed.

As I have said before; a farmer who would devote his farm to the production of early lamb, Down-mutton, dairy-fed small pork, and Dorking capons, could not help making money even in these times, and SOREL is the place to do it in. Lots of wealthy private customers in Montreal.

**Sowing Spring-grain.**—Towards the end of this month, I suppose all the farmers in the Western side of the province will have begin their sowing. The frost cannot have penetrated very deeply this season, and there is hardly any snow on the ground, so there is, I think, every prospect of a fairly early spring, and as the fall was an open one, a great deal of, if not all, the necessary ploughing was got through before the frost set the ploughs fast.

Pease, wheat, barley and oats, all to go in as soon as possible. Black Tartar oats will stand any April frost, and so will wheat and pease, particularly if they are drilled or ploughed in pretty deep; barley is a little more susceptible of cold, but the early sown barley is always preferred by the maltster, and the grass-seeds can be sown after the barley is up and harrowed in with light harrows, the roller finishing the job.

If you cannot use a drill on account of stones, put your seed in with a grubber, after having well pulverised the land with the harrows; finish with a double tine along the ridges, and roll after the grain is up. Harrow till the land treads equally under foot. Should a heavy rain fall and encrust the ground after the grain, or pease, are above ground, do not be afraid of passing the harrows over it. More scalded barley (*échaillée*) is caused by the encrustation of heavy land by rain followed by hot sunny weather, than by any other cause. When you

think you have harrowed the seed in enough, give the land a couple more tines. It won't cost 5 cents an acre and you will be repaid ten-fold at threshing time.

**Water-cress**—A beautiful little stream of spring-water flows from the lime stone rock not very far from my house., and I am about to prepare some plants of water-cress to set out on its borders in May. I am not going to point out the exact situation of the future plantation at present, as I should like to keep some of the cress for my own eating. It is a simple job enough: the level of the stream will be lowered, to allow the water to spread in shallow basins; the plants—they are already sprouting, March 5th—when about 4 inches high, will have their roots enveloped in clay, and be placed on the earth over which the water trickles. No floods to be feared to wash the cress-plants away, and the lime-stone water will just suit them; we have all our great plantations of water-cress for the London market by the sides of streams flowing out of the Chalk-hills.

Water-cress, besides being very wholesome, is about as pleasant an addition to bread and butter, cheese, and ale, as any body can desire. It is very little trouble to grow, and where there is no stream suited to the purpose, a shallow trench watered from a hose twice a day—regularly soaked—will grow it very well. Any body could get plenty of it in the back yard of his house, provided it be kept wet. The market gardener's water cress, sold in Montreal, is poor stuff, generally speaking: no amount of manure will perfect cress: what it wants is humidity.

**Onions.**—Although I am very fond of growing big swedes and mangels for exhibition, I am well aware that 9 inches apart in the rows will give a heavier crop than roots set out 12 or more inches apart, and I feel sure that the same thing is true of swedes and turnips with 20 inches, between the rows, and sown on the flat, rather than 24 inches, though I confess to have a lurking regard for drills at wide distances for mangels of the long red kind, though I know some of our best English growers differ in opinion from me.

Now, as to onion growing, I have not had more experience than that I have gained by growing them in my garden every year. Still, I have always felt sure that most English gardeners in the country set the young plants out at too great distances, and I am confirmed in my opinion by some experiments that were carried on at the Ohio Agricultural Experiment Station in 1888. The season, in that state, was a very dry one, and the crop was, in consequence, very poor; enough, however, were grown to show that onions at an inch apart in the row gave 63% more weight than those left 4 inches apart.

One unfortunate thing happened. Our cousins do not seem to have found out that to conduct agricultural experiments to any useful end, the land must be previously thoroughly, exhausted—*practically exhausted*, of course, I mean. Consequently, "no effect was apparent where fertilisers were used except with well-rotted horse-dung. The yield of unfertilised plots was fully equal in all other cases to the yield of those that were, fertilised, and even the horse-dung made very little difference." If were it not for the last sentence, the failure of the fertilisers to exert any beneficial effect might be attributed to the drought, but taking the yield as given below into consideration, to my mind it seem very probable that the whole of the plots were in too good condition to afford a fair test of the relative value of the different fertilisers used.

Of the preparation of the land nothing is said, though this is more important for onions than for any other vegetable. The best preparation is this.

Take a piece of light, black soil; trench it two spades deep,



burying, in the autumn, a heavy dressing of dung at the bottom of the first *spit*. In spring, when the land is thoroughly dry, dig in lightly as much *rotten* dung as you can completely bury, rake fine—as fine as possible—and then tramp down the soil as hard as a board. Land cannot be too finely pulverised or too firmly pressed for this crop. Sow thickly in lines a foot apart, on inch deep, and after covering in with the rake, tramp over the lines again. On great Hertfordshire onion growers double plough their land,—one plough following another in the same furrow—and roll with Crosskill's clod-crusher, weighing about 3000 lbs.

A series of plots on the experiment ground was devoted to thick and thin seeding. The seed was sown quite thickly, and as soon as fairly up the plants were thinned to one, two, three, and four inches apart. Duplicate trials were made, and the results were the same in all cases.

Thick seeding gave the largest yield, in weight, but the onions were much smaller. The plots contained six rows, each six feet in length—the same size as all the other plots. Yellow Danvers was the variety used.

Distance apart in the row.	Yield.
One inch .....	lbs. oz. 13 2
Two inches.....	11 7
Three inches.....	9
Four inches.....	8

The result, in spite of the unsatisfactory season, would seem to show that the onions yielded, in proportion to the less distance left between the plants in singling them.

I should be inclined to try a good mineral superphosphate,

at the rate of 200 lbs. to the acre, with 150 lbs of sulphate of ammonia, and a few bushels of hard-wood ashes, in addition to the dung, for this crop. Onions yield so largely, when they give their minds to it and the soil suits them, that any reasonable outlay is sure to be repaid two years out of three at least. Hoe frequently, but shallow, and not too near the bulbs—the Dutch- or *push-hoe* is the best for this purpose. Last of all, *sow early*.



YOUNG DORSET HORNED RAMS.

**Fertilisers.**—I have received the list of prices of the "Standard Fertiliser and Chemical Company." The prices seem, about the same as they were last year, except that, whereas in 1889, the price of superphosphate—averaging 13% of available phosphoric acid—was \$26 00 a ton, the price this year is from "\$12 00 to \$32 00 per ton according to analysis": no percentage being mentioned.

**Trifolium incarnatum**, or crimson-clover, is represented at p.—It is rather peculiar in its habit of growth. Prepare the land well, pulverise it completely, and the trifolium will refuse to grow: sow it on a wheat- or oat-stubble, har-

row two or three times, and pass the roller over it, and it will do its best to content you. I had some seed over from England last summer, but the season was too late to risk sowing it. It ought to be in the ground by August 15th.

The Lucerne plant, at p.—, will give some idea of the depth this plant will reach if it meets with no obstacle in the shape of rock or water.

**Pease.**—I saw four inches recommended the other day, by a greatly renowned English gardener, as the proper depth for sowing pease! Rather different from our farm-practice of sowing on the top of the land and harrowing them once or twice!

**Hortense Dudley**, one of the regular contributors to the Country Gentleman, observes, in a late issue of that paper,

that "in Kentucky, her father keeps a small flock of sheep for the purpose of eating down the sassafraz and other weeds" And this with mutton in England fetching 20 cts a pound, *sinking the scale!*

**Cabbages.**  
— For a small lot of winter cabbages, I should try burning a heap of rubbish on the ground on which I intended to sow the seed. One main reason why amateurs rarely succeed in growing cabbages is, that they only put the plant down up to a few inches, leaving the major part of the stem out of ground. For winter cabbages, take seed of St. Denis, or Savoy—some of both—sow very thinly on finely pulverised soil, as early as the ground is fit, and transplant up to the lowest leaf any time after June 1st—earlier they will very likely burst. A good quickly grown Savoy is about the most *narrow* of the brassica tribe, and turned topsy-turvy, when the snow comes, will stand any frost, though not such alternations of

frost, thaw, rain and snow as we have had during the past hateful season. I fear the young grasses will look blue enough—or rather yellow enough—next month.

*Wild ducks.* I saw on Feb. 12th. It rained all day on *Old Candlemas day* (Feb. 14th), to which the proverbs refer: "The hind would as soon see his wife on her bier, As that Candlemas day should be fur and clear,"

"If Candlemas day be clear and fair."

Half the winters to come and mair.

Therefore, I hope for an early spring.

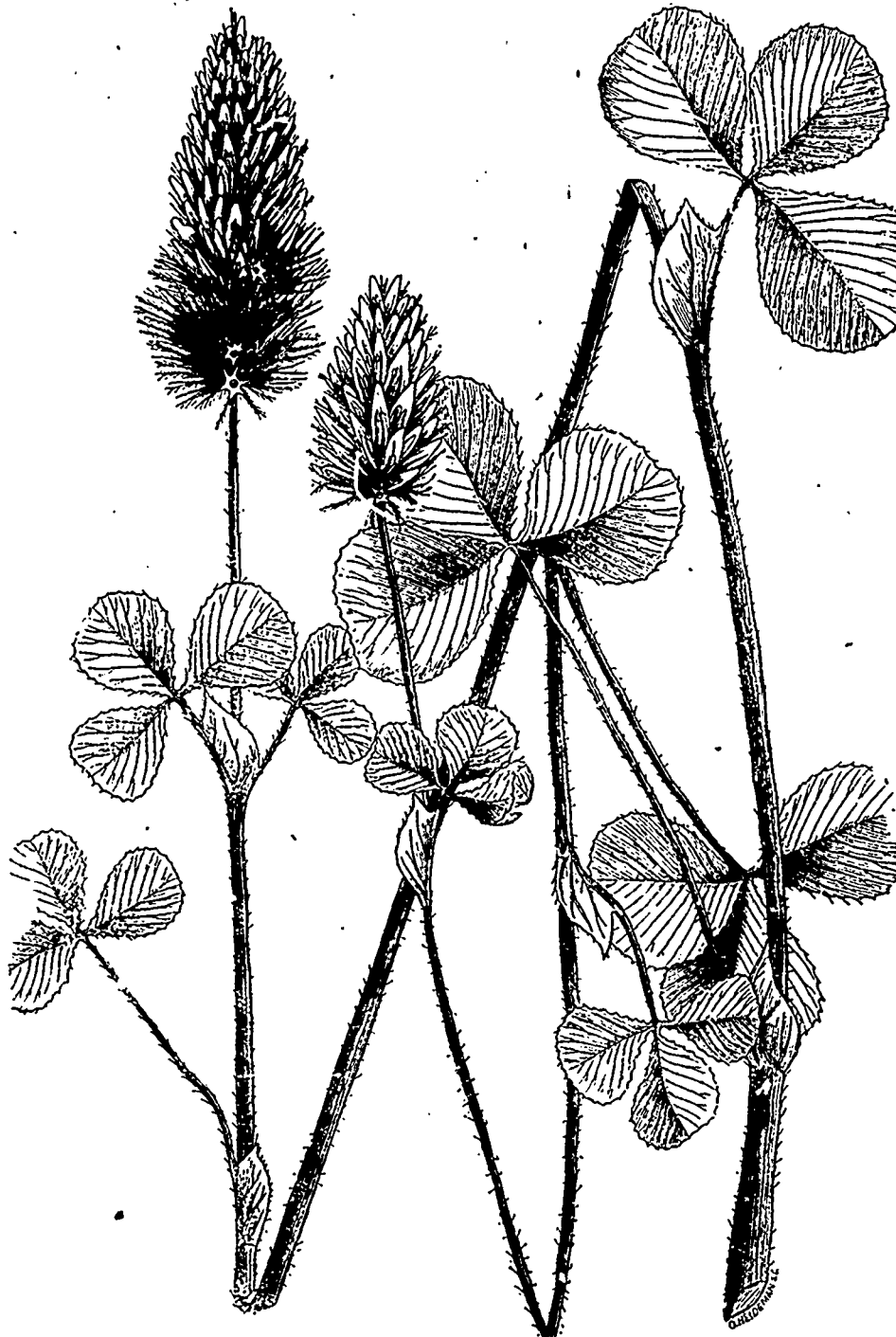
**Pigs.**— As a general rule, young pigs are taken from the sow much too soon: seven or eight weeks is not too long, if they are intended to do well, for them to suck, by which time they will have learned to eat freely and will make rapid growth of bone and flesh, provided they have proper food after weaning.

A. R. J. F.

On the Breeding of Turkeys.

In conformity with the desire of one of our correspondents whose letter will be found in another part of the present number, we have prepared the present article on the breeding of turkeys.

The great size and the delicate flesh of this fowl make it one of the most sought after of all the poultry-kind; only in our rigorous climate, it requires certain special attentions which demand greater care than the rearing of geese or ducks, and which deter some people from attempting to breed turkeys.



TRIFOLIUM INCARNATUM. (Crimson clover.)

We are now going to describe, in a few words, the principles that preside over the breeding of this fowl, in order to bring them before the people, and we trust by this means to induce more farmers' wives to undertake the task of rearing turkeys.

*Choice of varieties.*—There are, generally speaking, three varieties of turkeys, the black, the white, and the bronze. The commonest is the black, a very hardy kind. The white is less hardy than the black, and is only kept because the colour of its feathers conduces to its easier sale. By far the best sort, in every respect, is the bronze, the color of which, as its name imports, is bronze with glittering reflexions (*like shol-silk—Trans*). It is larger than the others, and as hardy as the black.

*Choice of the male*—A turkey-cock for service should be two years old. He is hardly fit for his business until he has attained that age. The following are the characteristics of a good turkey-cock for breeding: Breast wide; legs short and clean; frame large, eye brilliant, wings wide, tail-feathers well developed and the plumage uniform in colour. The caruncles should be prominently displayed, and show the dilatation and the change of colour from red to blue in an unmistakable manner. He should be discarded at five years old.

*Choice of the hen.*—Like in colour to the male, and with the same short legs. Frame large and regular, and actions lively and animated. Best at two years old, and useless after five.

*Fecundation of the eggs.*—It is generally admitted that one well selected cock-turkey, of two years of age, is sufficient to accompany six hens. If there are more hens than six, and two cocks must be kept, the bands should be separated, or else the cocks will always be fighting. (1)

*Laying.*—The turkey begins to lay very early in the spring. She shows by a change of manner when she is about to lay; she becomes restless, wanders into dark corners, into quiet spots, evidently seeking a tranquil retreat where she may make her nest, and then is the time to get one ready for her, in a shed where no noise can disturb her. The nest should be made of a little straw and placed on perfectly dry earth. (2)

Every night the turkey should be shut up in this shed, and as a turkey hen lays generally every other day and in the morning, when once she has begun to lay, she should not be let out on her laying days until she has performed that duty. A nest-egg should always be left, and it is no use trying to dodge a turkey with a porcelain-egg, for she is much too sharp to be deluded in that way. When she has laid five or six eggs, the hen will resort willingly and regularly to her nest. The cock-bird must be kept away from the nest, otherwise he will abuse his concubine and break the eggs. A turkey generally lays, about fifteen eggs, all of which, except one, should be taken away as fast as they are laid. (3)

*Incubation*—As soon as the hen is observed to stay all day on her nest she is ready to set and her eggs should be restored to her placed on a flat nest of straw. Perfect silence should be observed round the nesting place. So assiduously does the turkey set, that she has to be taken from the nest to

(1) As one service fecundates a whole laying of turkey's eggs, the poor classes of Irish, in whose country myriads of turkeys are bred, are accustomed to hire the services of a turkey-cock, as we hire those of a stallion. A. R. J. F.

(2) A flour-barrel half-filled with straw chaff placed in a retired corner of a shed, the opening at the inner side of the shed with just room enough to admit the turkey easily, appears to us to be the best kind of nest for turkeys, geese and ducks. E. A. B.

(3) The best and strongest turkeys I have ever seen were hatched in a quickset-hedge and brought home by their mother, who had "stolen her nest," when about ten days old. Where were the foxes that summer? A. R. J. F.

feed, at which time it were well to remove the shells of broken eggs, if there are any. Thirty to thirty-two days is the usual period of incubation, during all which time the cock must be kept away from the shed.

*Hatching.*—About the thirtieth day, the young ones begin to hatch. Pray do not meddle with this operation: nothing is gained by it, for a chicken that needs assistance to get out of its shell is so weak that it is sure to die. The broken shells and the infertile egg, should be removed, and the poults left with the hen for 24 hours without an attempt being made to feed them. (1)

*House for the turkey and her poult.*—The day after hatching, the poults should be taken from the hen and placed in a basket lined with flannel and covered up warm with a piece of the same material. The hen should then be carefully lifted from the nest, the hands of the operator being placed at her sides, just where the wings spring, and transferred to a coop, which should be set on a dry spot, completely exposed to the sun. This coop should be very much larger than the common hen-coop, to prevent the turkey, for want of space, from trampling on her poults. We cannot do better here than give a description of a turkey-house planned by a poultry breeder well known in the United States and even in Canada: Fanny Field:

"My turkey house is 20 feet long by 8 wide; 7 feet high in front, and 4 behind; it is made of rough wood, the obinks well closed with laths; the roof is shingled, for I never have found any thing for roofing equal to good shingles, able to keep out the rain for 20 years. There is a large window at each end of the house, and a door in front on rollers, with a window in it. No flooring inside, but in its place, a foot deep of sand and gravel. Along the back part of the house inside, is a row of movable compartments or cages, made of narrow bars (*tringles*), to confine the hens. For ten or fifteen days after hatching, I keep the hens shut up all the time. At the end of that time, the poults are strung and the hens have become used to their homes. Then, when the dew is off, the rolling door and the cages are opened, and the hens and poults are allowed their freedom till the evening. During fine weather, in the first 15 days, before the mothers are allowed to go out of their cages, the front door is opened, and the chicks can run in the open air without much danger of their travelling too far. If it rains, the door is kept shut, and there is no danger of the place getting damp. The cages are washed daily, the filth removed from the surface of the ground, dry sand is scattered over it, and the cages are replaced. This thorough cleanliness is most important and secures the health of the poults. (2)

Under the window at one end of the house is a box holding about three barrels. This is filled with sand for the above purpose; it can be thrown in through the open window from the cart with a shovel. At the other end, is a similar box to hold the filth removed from the cages.

It is clear that this turkey-house is intended to last for several years. It can be built of any desired size, due care being taken to observe the principles here laid down in its construction. The general place is an excellent one.

*First food for turkey-poults.*—For the first eight days, we cannot do better than recommend the food we used to give

(1) Old poultry women used, in my younger days, to insist upon forcing such a mass of indigestibility as a whole peppercorn down the gullet of every chick and turkey-poult as soon as it was hatched. Almost as bad as the superstition that they survived among a class of people that ought to have known better, that a baby never thrived properly until it had eaten a piece of roasted sucking-pig! Could this latter absurdity have been a survival of the *Jew-chase* of the middle age? A. R. J. F.

(2) I doubt the wisdom of washing. Damp is a great enemy of turkey-poults, A. R. J. F.

the poults when we were at Varennes; Mr. Barnard thus describes it: Make a paste of hard boiled eggs, herbs, particularly *herbe à dinde*, wheat-bran and skim-milk-curd. Eggs should be stored up on purpose for this, and if they are a little stale, they will answer just as well, provided that they be boiled quite hard—(*ten minutes-Trans.*) After the eighth day, the eggs may be left out. (1) Then give paste composed of soaked crusts of bread, chopped onion- and eschalo-top, onions, barley—and oat-meal. An important point is to give the paste thick enough, rather crumbly than otherwise, and to *cook* the meal, not *scald* it only. Food should be given often, and never allowed to become sour. Moreover, fresh water must be always within reach of the poults, in flat, shallow vessels, for the young ones, being very awkward, are apt to wet and sometimes drown themselves. Now nothing is so injurious to young turkeys as moisture. The food should be varied, but the vegetables such as lettuce, onions, cabbages, &c., must never be left out. When they are shut up at night or in rainy weather, take care to give them plenty of space, as they develop a good deal of heat and might get smothered.

**Subsequent feeding.**—At the end of the month, a little grain may be given, continuing always the paste, and especially the onion, or if you have none, adding a little pepper to the paste. The grand thing is to keep the poults growing, and to strengthen them sufficiently up to the time when the caruncles begin to develop themselves. Of the danger of too much humidity we spoke above. The flock should never be allowed to go out until the morning dew has disappeared and should be brought home before the evening dew has fallen, and, at all events, before sunset, from the day they are hatched till the caruncles appear. Never let them out in rain; bring them in, if a storm is imminent; keep them out of wet, marshy places; keep them invariably on a dry sandy, hilly spot. Lastly, if, unfortunately, a sudden storm should wet them, put them at once in some warm place, near a good fire; if this is done at once, they may be saved.

**Appearance of the caruncles.**—At about two months old, the young cooks will begin to develop that peculiar lumpy skin—(called the *caruncle* in English, and *le rouge* in French on the neck and throat, and a sort of comb, like a small horn on the front of the head. If they are in good health—and they ought to be, if our instructions have been followed, they will pass this critical period without danger. If on the contrary, they are weak, puny, ailing, when this stage of their growth is attained, the greater number of them will die in spite of all the care that may be lavished upon them. But, when once this period is passed, nothing in the shape of poultry is harder than young turkeys.

**Food for young turkeys.**—When once the poults have developed their caruncles, they may safely be allowed to pick up their food in the fields. A little grain should be given them every evening, to entice them to return every night to the yard. This is important, for at their age, they are very tempting to the thief, and it often happens, that a flock of turkeys accustomed to roost in a solitary tree in the midst of a field, is walked off with, and never seen or heard of again. Make a good roosting place in a sheltered corner of the yard, with all the perches of the same height from the ground, for if they are of different heights, one above the other, the turkey will all try to get on the highest, and when once the strongest have occupied the upper rows, those on the lower perches will catch the droppings of those on the higher ones. The best roost is a cart-wheel placed on a post, six or seven feet

(1) I prefer continuing the eggs for a fortnight, and giving nothing but hard eggs. I should fear soaked crust of bread would cause looseness, the great enemy of young turkeys. Chopped onions are indispensable.

A. R. J. F.

from the ground. Turkeys can stand a good deal of cold; but, when once frosty nights are experienced, they must be shut up at night. At that season if they roost out of doors, they are very likely to have their feet frozen. (Besides, the *owls* are fond of turkeys, *Trans.*)

**Fattening.**—Turkeys do not like confinement, and suffer from it. The best plan of fattening them, then, is to begin early, when they are still able to frequent the fields. Begin, then, for the first fortnight of fattening them to give them a full feed of grain on their return home at night. Any grain suits them, but maize and barley are the best. During the second fortnight, give them grain morning and night. Next, put them into an enclosure, in which there is room for them to move about, and give them, morning and noon, a dryish paste made of cracked grain, and barley- or Indian-meal, and, at night, a feed of whole grain. When once a certain degree of fat has been obtained, it should be as well to kill them, as they will do no more good. Turkeys, like geese, are sometimes crammed; that is, small rolls of prepared paste is thrust down their throats. This is not practised in our province either with turkeys or geese. (1)

We think that these few notes on the rearing of turkeys will serve to render practice more common in this country than it is.

J. C. CHAPAIS.

(From the French.)

## TURKEY REARING.

A very distinguished *agronome* write to us thus:

*Dear Sir.*—You have probably observed in the recent issues of the papers the departure of a train loaded with turkeys, to the value of \$45,000, from Smith's Falls to Boston.

My attention has been attracted to the service to be rendered to farmers by instructing them how to rear turkeys, and showing them the profits depending thereon.

In our country-parts, turkey-rearing, though considered very profitable, is thought to be too difficult to be worth trying.

This is, clearly, from want of experience, and a good article on the subject, entering minutely into all necessary details, would render great service to the readers of the *Journal of Agriculture*.

To those who understand how to rear them properly, turkeys are doubtless very profitable. Not only do they always sell well, but they are the best of all agents in the destruction of crickets, grass-hoppers, and other injurious insects.

Our editor, M. Chapais, presents an article in this number, which, in addition to a few notes from our hand, treats the subject in the most elaborate fashion.

For us, it is enough to say, that we have always perfectly succeeded, thanks, especially, to two rules: 1. To feed the

(1) Pease, I regret to say, are often given to turkeys in this province; in fact, I have not had a tender turkey this winter, and pease were the cause, as some were always to be found in their crops. The proper paste for cramming turkeys or fowls is prepared thus:

Barley-meal.....	one pound
Oatmeal.....	half a pound
Suet or dripping.....	quarter of a pound
Sugar.....	two ounces.

Made up into rolls about as thick as the first finger for turkeys, as the little finger for fowls, with milk; thrust the rolls down the throat with a few drops of milk from a tea-pot spout between each *gobble*. I used to have my 20 to 30 turkeys treated thus every winter, and they were fat and delicate: young cocks about 16 lbs., young hens about 13 lbs.

The great turkey-breeder, I forget his name, at Duxford, Cambridgeshire, who used to rear from 800 to 1,000 every year, told me that he never let the young ones out of the yard until the dew was off. They were herded, like a flock of sheep, by a boy, and driven out and home along the lanes of that fertile though hideous county every day.

A. R. J. F.

young ones for the first week on hard boiled eggs, and a paste made of chopped herbs, particularly, *l'herbe à dinde*, wheat-bran and skim-milk-curd. After a week, the eggs may be left off. Choose the least fresh eggs for this paste. Even the worst will do, if they be boiled hard. A good *henwife* will provide eggs for the season of hatching. 2. Keep the poults in from nightfall till the dew has disappeared in the morning, from the day of their birth till the caruncles appear. After that there is no further danger. (1)

To bring the poults home every night, is a good plan, and so is the proposal to make them a roosting place out of the reach of the *rôdeurs de grand chemin*, who are ready enough to catch up good poultry to be had for nothing but the stealing of them. E. A. B.

(From the French.)

### DOMINION OF CANADA.

CENTRAL EXPERIMENTAL FARM, DEPARTMENT OF AGRICULTURE.

Ottawa, March 5th, 1890.

The Government of Canada, on the recommendation of the Minister of Agriculture, has agreed to place in the estimates a sum to provide for the purchase and distribution of two rowed barley for seed, to be supplied to the farmers of the Dominion at cost.

In furtherance of this object the Minister of Agriculture has purchased 10,000 bushels of "Carter's Prize Prolific" barley from the well-known seed establishment of James Carter and Co., of London, England. This variety of two-rowed barley—a recently improved strain of the Chevalier type—ranks high in Great Britain for malting purposes, and has been pronounced by experts as one of the best sorts obtainable. It has been awarded many prizes and was given the first prize at the Windsor Royal Agricultural Show last year. It is very prolific, has stout, bright straw and long, heavy heads, usually averaging under good cultivation, about forty grains per head. It may be sown thinner than less vigorous growing sorts, one and a half bushels per acre is considered sufficient. This variety was grown from samples distributed from the Central Experimental Farm, in the barley districts of Ontario, and in other parts of the Dominion, during the past somewhat unfavourable season, weighing from 54 to 56 lbs. per bushel; samples of which have been submitted to experts in England, who have pronounced them to be good, marketable specimens of malting barley, which would command at present from 38s. to 40s. per quarter of 448 lbs., in the English market, equal to 99 cts. to \$1.04 respectively for the Canadian bushel of 48 lbs.

This "Prize Prolific" barley—for which Carter's catalogue price is 10s. 6d. stg. per bushel, of 56 lbs.—will be offered to the farmers of Canada in bags of two English bushels (112 lbs.), one bag to each individual, at four dollars per bag. At this price the barley will be delivered to the nearest railway station so that farmers in every province may obtain it at a uniform rate.

Those who desire to participate in this distribution should send their applications at once, with four dollars enclosed, to the undersigned, giving the name and Post Office address plainly, and the name of the nearest railway station. The names of those who remit will be entered in the order in which they are received, and the distribution made in the same order as far as possible, having regard to the requirements of the several provinces. Should the applications ex-

ceed the supply those who apply last will have their money refunded, but if the quantity imported should be greater than the demand, on the basis of a two bushel distribution, then the applications of those who may have asked for larger quantities will be considered, and the remaining stock apportioned among such applicants. Wm. SAUNDERS,

Director Experimental Farms, Ottawa.

Portneuf, County Portneuf—Feb. 14th 1890.

ARTHUR R. JENNER FUST, Esq., LAOCHINE.

Dear Sir,—Would it be too much—knowing the interest you take in all questions appertaining to the growing of root crops—to ask your advice on the following:

We have a field of about an acre square on which we wish to grow a crop of yellow turnips. The land is good clay loam—flat—and after one year in oats we ploughed in about fifty Scotch-cart loads of manure—one year old.—We now want to sow phosphate in the spring, after working the land, drill up and sow our turnips. The question we are in doubt about is what kind of phosphate to get, and quantity to sow, as also which is the best place to get it.

We always grow large crops of roots, both for Montreal and Quebec markets, and also for our stock; but have always put the manure in the drills, about sixty loads to the acre for roots, and eighty for cabbage.

By answering the above you will very much oblige.

Yours truly,

R. & C. SEWELL.

Replied to by letter in full. Recommend for market purposes sowing on the FLAT at 20 inches with 200 lbs. of plain superphosphate of Mr. Nichols' Special High-grade brand.

A. R. J. F.

Mr. A. R. JENNER FUST.

Dear Sir,—In the county of Soulanges there is no Clyde stallion, and the horses are small. Why does not some owner of a pure Clyde stallion come and pass the season here? I think it would pay him.

The Society of Agriculture does not seem to be alive to the interest of the county. The farmers have to put their mares to small don't know what sort of stallions. Where could I buy a pure Hampshire Down Ram? By inserting this in the *Journal of Agriculture* you will greatly oblige me.

Yours Truly,

MICHAEL A.

Côteau Landing, March 12th 1890.

Mr. Wood—Mount-Cisco, N.-York Station—will furnish ram-lambs of the Hampshire-down breed at about \$25.00 a head. A lamb will serve about 30 ewes easily.

JENNER FUST.

### Muslin for Hot-beds.

Can you give me a good receipt for preparing "tarred" muslin for plant-beds. The prepared cloth now sold is so much inferior to that of a few years ago, owing to the sizing being too thin, that it is almost worthless. I use thousands of yards yearly and the proper preparation is a point of utmost importance. The muslin is the very thinnest goods. O. W. B. Kittrell, N. C. [Take white cotton cloth of close texture, and nail it to the frames; then apply with a paint brush the following mixture: Two ounces of lime water, four ounces of linseed oil, and three ounces of fresh eggs. Beat the eggs separately, and add them to the oil and lime water after the two latter have been warmed and mixed together.

(1) Not in a season like in the summer of 1889? A. R. J. F.

Successive coats will make the muslin water-proof. Cross bars of a foot apart will support the muslin. We have found it to last some years, but prefer glass. Have any of our readers found a better preparation? ]

Mr. Lloyd, mentioned the following article, is the well known English Agricultural chemist. Mr. Cooke is a large Norfolk farmer. See p.—

#### The Norfolk Experiment on the Value of Oil in Linseed Cake.

I have read with much interest Mr. Lloyd's fair and useful notice of the Norfolk feeding experiments, and I am quite at a loss to know why he approaches his subject so tenderly. I must, however, remind, Mr. Lloyd that my report to the Royal Agricultural Society's Journal was nothing but a bare narrative of facts. So that when he talks about the image those facts have apparently left on my mind, I am not quite able to follow him. I have given no clue at all to the image reflected from the facts, unless it be indicated in the assertions of greater profit obtained from the high oil cake, and the much higher feeding value, weight for weight, of the oil as compared with that of the other nutrients of the cakes. But then it appears to me that these statements are really as much statements of fact as any others in my paper. If, therefore, Mr. Lloyd does not seek to undermine or discredit the facts, and he admittedly does not, so far there can be no hostility of opinion between us.

The difference of opinion, if there is any, begins with the inferences which he, and not I, has drawn from the facts; inferences, however which no one will welcome more cordially than myself, when directed, as Mr. Lloyd's clearly are directed, to the elucidation of the truth which in common we are seeking.

Well, Mr. Lloyd's first inference—or the inference which he fears that others will draw—is that the feeding value of linseed oil is eight shillings per unit. In certain cases the experiments show that it might be so, but, if it be possible that any one will rush to the conclusion that it must be always so, it is well indeed to give them a caution. If there were no other reasons—and there are plenty of scientific reasons—why the value of a unit of oil cannot at all be accurately determined by this single experiment, there are practical ones which any shrewd farmer will at once appreciate. For instance, the gain of 72s. worth of meat resulting from the excess of oil was obtained from the heads of a first-class flock of Southdown ewe sheep; a breed and sex of the greatest aptitude to fatten. Also, perhaps, they were of the very fittest age to give the best increase of flesh and fat from suitable materials. The price of mutton, too, on which the calculation is based is rather a high one. Moreover, as Mr. Lloyd says, the results were obtained only from sheep, and it is quite possible that other farm stock might not have made proportionate progress on the same food.

It may be a pity that we were not in the experiment so ambitious as Mr. Lloyd would have us be, but there was no idea of determining the precise value per unit of the oil in the cakes, much less of settling once for all the many complicated problems of the science of correct feeding. We had, however, in operation in 1883, and again last year, a number of experiments with other foods which may, perhaps, throw some light on the more scientific quest towards which Mr. Lloyd would take us, although I fear he will not find in them so much encouragement as he desires for feeding by hard and fast ratios. Meanwhile, confining our attention to the oil test only, its purpose was as plain, practical, and simple as I believe its results to have been. It was only intended to show, as nearly as might be, the difference in feeding value between two pure



LUCERNE PLANT, TRACED DOWN 17 FEET BELOW THE SURFACE.

linseed cakes, the one containing a high and the other a low percentage of oil, in order that the feeding value of the oil,



as compared with other nutrients of the cakes, might be approximately determined.

It is not by any means my experience as a farmer, although it seems to have been Mr. Lloyd's, that the market value of linseed cakes is in proportion to the oil contained in them. Amongst manufacturers and merchants it is common to hear the most sceptical assertions on the value of oil, and farmers have been equally uncertain about it. Moreover, many, and perhaps most farmers rely chiefly, if not entirely, on cakes as a food for their stock, and therefore, in their case, it is not at present so much a question of the best scientific food mixture as the best of two or more cakes.

But now, without making any sort of pretension to be able to meet Mr. Lloyd, or any other scientist, at all equally upon purely theoretical ground, I will yet be rash enough to follow him a little into his own sphere. It appears that, however uncertain practical men may have been on the relative values of fat and the carbo-hydrates in food, in the realms of science there is no such uncertainty. On the contrary, according to Mr. Lloyd, there is nothing more certain with scientists than that a pound of fat is equal to two and a half pounds of carbo-hydrates. Well, what is the evidence for this certainty? And first let us refer to the remarks of Mr. Lloyd himself on the subject. In a little work on "The value of fat as a constituent of the food of animals," Mr. Lloyd, after describing the manufacture of cakes and the constantly increased extraction of the oil from them by improved machinery, asks the following pertinent question:—"Was it the oil contained in these cakes that made them valuable?" He then proceeds to answer his question in the following words:—

"Had the old notion that oil in the cake went directly to form fat in the animal been true, undoubtedly these cakes, when rich in oil, would have possessed great value. But we have seen that this does not take place. What is more remarkable is the fact now proved, that the direct reverse is what happens. Experiments have shown that by increasing the fat in an animal's food the fat in the milk is decreased; and the explanation of this has been found in the fact that fat retards and does not facilitate that decomposition of proto-plasm which results in the production of fat. To the dairy farmer and to the fatterer of live stock this fact is of immense importance, and proves that large quantities of oil in the food are objectionable; hence, instead of being a constituent which materially enhances the value of linseed or cotton cake, it may be deemed, for their purposes, of secondary importance. But if oil has this remarkable power of preventing a waste of the nitrogenous constituents of the body, it is evident that for animals like sheep, which had to wander far to get of scanty herbage, their necessary food, any artificial food which contained oil would be likely to prove of greater advantage than one deficient in oil."

No doubt Mr. Lloyd would say, firstly, that he had qualified his depreciatory remarks upon oil by his exceptions for sheep, with their long wanderings for scanty food. But then the experience of the experimental sheep was, of course, the very opposite of this. And, secondly, he would say that further on in his work he declared the usual faith in the 1 of fat to 2½ of carbo-hydrates. But, then, are not the two statements so irreconcilable as to suggest the greatest uncertainty in the mind of the author? Or, at all events, are not the remarks I have quoted more than sufficient to support the cake manufacturer in his excessive oil extraction and the farmer in his concessions to the practice? Again, that very great German authority, Dr. Emil Wolff, gives the value of the digestible ingredients of foods as follows:—Nitrogenous substances, 2 61d. per lb.; fat, 1 10d. per lb.; and non-nitrogenous substances other than fat, 0 44d. per lb. Do these figures at all agree with those which Mr. Lloyd has given us?

Then, in a standard work upon stock-feeding which I happen to possess, are the following remarks:—"The residue from this process" (extracting the oil from cakes with benzol) "is poorer in oil and correspondingly richer in protein (albuminoids) than that from the ordinary process of pressing, and it seems probable that it would have advantages as fodder over the latter." Then, further on, the same author says:—"Increasing artificially the amount of fat in the fodder by the direct addition of pure fat—e.g., linseed oil—for oxen and hogs, has often been found to have a good effect in increasing the live weight of the animals. . . . By its means, as we have learned, the gain both of flesh and of fat is favoured. . . . The amount of fat in the rations of fattening animals is certainly a point worthy of attention, and it should be our endeavour to increase it as much as can safely be done, especially when the nutritive ration is narrow." I do not say that these statements are not reconcilable in the mind of their author, but I do say that they are not sufficiently clear for the practical grazier who may desire to frame his methods to the best scientific knowledge of the day. In the same work it is in another place admitted that further experiments are very much needed to determine this particular question.

Mr. Lloyd will allow that amongst the best scientific authorities it was long held that one part by weight of fat was equal to two and a-half parts by weight of carbo-hydrates, because all the non-nitrogenous substances of a food were supposed to be chiefly valuable as fuel to supply the requisite heat to the body. The conclusion may still be as stated, although the reasoning which led to it be fallacious.

But it appears to me that with the disappearance of the basis of this supposed law there has disappeared also much scientific certainty upon the conclusion itself which, in the absence of a sufficient number of reliable experiments on which to establish it, is surely not very remarkable. It has since then become known that the fat and the carbo-hydrates have other and very important functions to perform besides the supply of fuel to the animal furnace. Experiments of the most precise and elaborate description have shown that the action of these two substances in the animal body are in many respects very analogous. Both of them supply heat, although it seems probable that the carbo-hydrates are much the more readily consumed. Both also assist in the production of *flesh* as well as of fat. But there is this important difference—that whereas the fat of the food is directly convertible into the fat of the body, it is not yet proved that carbo-hydrates are directly convertible into fat—at any rate, in the case of all kinds of farm animals—although indirectly, they, as well as the fat, do lead to the deposition of body fat. Again, the increase of carbo-hydrates in a food only leads to an increase of fat up to a certain point, unless the albuminoids are also increased; but, so long as the animal can healthily digest it, there is no such limit to the increase of fat in the food. Nor is the digestibility of the companion foods affected adversely by any addition of fat, though such digestibility is greatly depressed by an improper addition of carbo-hydrates. So that the value per unit of any fattening constituent evidently depends, amongst other things, very much upon the total quantities used of each constituent, as well as their relative proportions; and it does not follow, as it seems to me, that the so-called nutritive ratios must always settle satisfactorily the proper food ration. You may have the same ratio with a diet poor in albuminoids as with one comparatively rich in them. So thus it is even more necessary to insist upon a sufficiency of albuminoids than upon a due proportion between them and the carbo-hydrates, etc. Also it is clearly necessary first to settle in all cases the relative value of fat to carbo-hydrates before we can be certain of the terms of our



ratio; which reminds me that the nutritive ratio of 1 to 5.3, which Mr. Lloyd affixes to the high oil cake used in our experiments, is largely incorrect. It is evidently built upon the assumption that all the nitrogenous substances in roots exist in the form of albuminoids; whereas, Mr. Lloyd must surely be aware that experiments of Messrs. Lawes and Gilbert and others have shown them to consist largely of amides, with some nitric acid, which are without any feeding value at all. Instead, therefore, of calculating the albuminoids in the high oil cake as Mr. Lloyd has calculated them—at 2.69—it will be much nearer to put them at 2.00, in which case the ratio would work out to about 1 to 7.2, and would therefore not support the 1 to 5.5 standard of Wolff, as Mr. Lloyd asserts it does.

But, whatever our individual opinion, it is clear that the question is exceedingly complicated, and one not likely to be firmly and satisfactorily settled otherwise than from the data of many reliable experiments; and if it should ever be recognised that the humble efforts of the Norfolk Chamber have aided, even in the smallest degree, the desired results, none will be more pleased than their promoters. F. J. COOKE.

*Flitcham Abbey, Lynn.*

P. S.—I observe that Mr. Speir objects to the plan of the experiments, although, as he asserts, he writes in support of Mr. Lloyd, who says that the plan is an ideal one. Does Mr. Speir, perhaps, think it an error not to have consulted him upon the conditions of the experiment in preference to Sir J. B. Lawes?

**GOOD AND POOR FEEDING PASTURES.**—Mr McAlpine, in an address at the annual dinner of the Edinburgh Agricultural Discussion Society, on Monday night, said: In looking at pastures one often saw a grass which was very luxuriant, and one would naturally suppose that such a pasture would be a good feeding pasture. But, perhaps, alongside this same pasture one would come upon another pasture in which the grass appeared comparatively short and of little value. But if they asked the practical farmer about it, he might tell them that the luxuriant pasture was the poor feeder, and the comparatively stunted pasture had twice the feeding value of the other. Now, why was that? No doubt it was because in the one case the nitrogenous food and the air manufactured products were in those proportions which led to the formation of nutritive albumen, whereas in the other case (that of the rank pasture) the growth, was forced by excess of nitrogen to the non-albuminoid, and comparatively in nutritious compounds were manufactured. It was of the first importance that the clover which derived its nitrogen indirectly from the air should form a due proportion of every pasture, so as to give the proper nutritive ratio of albuminoid and carbohydrate compounds. When the grasses obtained the upper hand the clover had to succumb, and the proper balance of food was destroyed. (*En. Ag. Gazette*).

**Value of dung**—Mr. Hillman, in the *Country Gentleman*, exceeds Mr. Brown, of Guelph in the value he puts on dung, and leaves even M. Ville far behind:

"When Prof. Roberts reports his well-taken-care-of manure as worth only \$2.45 per ton, I think he has barely quoted one-third of its value, and I speak from personal experience, as I also have had the good fortune to handle barnyard manure, properly saved and liberally mixed with organic absorbents. Considering the full value of such manure, I could not place it less than from \$8 to \$10 per ton, and even that value is doubtlessly much below the actual benefits that accrue to us in the course of years. When barnyard manure is left in a heap and exposed to sun and rain, fermentation sets in; the organic matter becomes consumed, a good many plant-food elements become washed out, besides the nitrogen,

phosphoric acid and potash, and here I believe Prof. Roberts to be perfectly correct, when he states that the value of such manure does not exceed \$1.42 per ton, thus representing only a small fraction of its original value."

#### DIETARIES FOR COWS.

Some very interesting communications have appeared in these columns on this subject of late. The fact seems to be impressed upon us that, after all that has been done by chemists in laying down precise rules for the feeding of animals, a nice observance of the habits and feeding powers of stock; a watchful eye to see that a nice equilibrium is maintained, that while a cow is giving a lot of milk she does not lose flesh, or lay on flesh at the expense of milk, and above all that the constitution is not subjected to any undue strain, so that if she be a good healthy cow she may transmit the same qualities to her offspring—these must still remain the first qualities demanded of the good stock-feeder.

That many farmers succeed in this matter goes without saying, men to whom the terms "albuminoids" and "carbohydrates" are as unknown tongues. I do not say that scientifically calculated rations are useless, quite the contrary; but in the matter of stock feeding, practice must take precedence of science. From the various kinds of feeding stuffs on the market, the farmer may select that which is cheapest and best without the aid of the chemist. The chemist is very useful in protecting the farmer from fraud in the matter of adulterated foods, but as this is not relevant to the point at issue, it may be passed over.

"P. M.C." presumes that the German standards are calculated on the digestible proportions of the food only. He is right in his presumption. It is, however, the "digestible proportions" calculated from actual experiments with stock, and not on the theoretically digestible proportions. (Wolff's "Landwirtschaftliche Fütterungslehre," p. 219.) It must be borne in mind that in the German experiments amides have been reckoned as albuminoids, hence making the albuminoid ratio higher than if only true albuminoids had been used in the calculations.

Dr. Wolff admits that it is scarcely correct to do so, but seeing the imperfect knowledge at present (1885) possessed of these substances, his figures must stand as they are till some better can be substituted for them. It seems to be the opinion now that amides discharge the same functions in the animal economy as carbohydrates, hence their classification with albuminoids must necessarily be incorrect.

Warrington ("Chemistry of the Farm," p. 108) reduces Wolff's standard of 1:5 diet for milch cows to 1:6.7, deducting amides. I think that "P. M.C." is only just in his contention that what may be a suitable ration for a German cow may not be so for an English one. The experiments of Sir John Lawes and those of the German chemists differ widely in many cases, more particularly in the sheep-feeding experiments. Breed, climate, soil, and many other circumstances enter as factors into the question, and preclude any possibility of obtaining exactly similar results from stock-feeding experiments, however carefully conducted. We in England breed for flesh more than our German neighbours, as the light fore-quarters of their stock indicate a much less decided tendency to heavy flesh than our own breeds.

It is matter for regret that we are indebted almost entirely for our knowledge on these matters to the Germans. We might echo Carlyle's words, "But here as in so many other cases, Germany, learned, indefatigable Germany, comes to our aid."

The invaluable experiments and researches of Sir John Lawes are well nigh all that we can show in this important department of science.

BAUER.

(*Eng. Ag. Gazette*).

## NON-OFFICIAL PART.

## Conservatism vs. The Rage for Novelties.

The Seed Annual for 1890, issued by D. M. Ferry & Co., of Detroit, Michigan, has reached our table. Its cover this year is especially artistic and attractive, and its contents as usual, interesting and instructive. Ferry's seeds are thoroughly reliable, and always come true. The directions given in the Annual for the cultivation of both flowers and vegetables are so full and explicit that no one can fail of success who uses their seeds and follows the instructions.

D. M. Ferry & Co. are very conservative, both in offering new sorts and in their claims for them when offered; but they take pains to inform themselves as to the true character of all new varieties, so if some much lauded novelties are not found in the Annual, the probability is they have tested them and found them of no value.

A request sent to the firm at Detroit, Michigan will bring you a copy of the Seed Annual for 1890 by return mail.

## WHAT IS WANTED

Is something that will make a man sleep well, eat well and rise in the morning refreshed and strong, with none of the worn out tired feeling sure to be found where constipation, dyspepsia or diseases of the stomach, liver, bowels and blood exist. Burdock Blood Bitters meets every indication expressed shows.

## A letter from Dr. Hans Von Bulow.

The Knabe Pianos which I did not know before, have been chosen for my present Concert tour in the United States by my impressario and accepted by me on the recommendation of my friend, Bechstein, acquainted with their merits. Had I known these pianos as now I do, I would have chosen them by myself, as their sound and touch are more sympathetic to my ears and hands than all others of the country.

DR. HANS VON BULOW.

New York, April, 6, 1889.  
To Messrs. Wm Knabe & Co.

## The Prize Butter at the Paris Exposition.

We had hoped that some Canadian butter maker would get the Gold Medal for the best butter at the Paris Exposition, but in that we were disappointed. However, the medal did not stay on the other side of the Atlantic, for it was won by Moulton Brothers of West Randolph, Vermont.

They owe their success, in part at least, to a Canadian product, for the butter that was awarded the Gold Medal was colored with Improved Butter Color, made by Wells, Richardson & Co., of 200 Mountain Street, Montreal. Inquiries amongst the winners of awards at the different dairy shows in the Dominion brings out the fact that with but few exceptions, prizes have always gone to butter in which this Color has been used.

We have before us a circular sent out by the manufacturers of Improved Butter Color, in which they claim that the Color is a perfectly vegetable product, free from taste and smell, and the strongest butter color made. All of these claims are substantiated by the certificates of reputable chemists and butter makers. If any of our readers have not tested this article, we would advise them to do so at once.

## IMPORTANT TO WORKINGMEN.

Artisans, mechanics, and laboringmen are liable to sudden accidents and injuries, as well as painful corde, stiff joints and lameness. To all thus troubled we would recommend Haggard's Yellow Oil, the handy and reliable pain cure for outward or internal use.

## CONSUMPTION CURED.

An old physician, retired from practice, had placed in his hands by an East India missionary the formula of a simple vegetable remedy for the speedy and permanent cure of Consumption, Bronchitis, Catarrh, Asthma and a Throat and Lung Affections, also a positive and radical cure for Nervous Debility and all Nervous Complaints. Having tested its wonderful curative powers in thousands of cases, and desiring to relieve human suffering, I will send free of charge to all who wish it, this recipe in German, French or English, with full directions for preparing and using. Sent by mail, by addressing, with stamp, naming this paper, W A Noves 820 Powers' Block, Rochester, N. Y.

## THE BEST EVER MADE.

GENTLEMEN,—My trouble was heart disease and dyspepsia, but I took two bottles of Burdock Blood Bitters and one of Burdock Pills and got well. I never felt better in my life. My brother has also tried B. B. B. and thinks it a splendid medicine.  
MRS. JNO. EARLY, Hamilton, Ont.

**FOR SALE.**—Norman cattle, Ayrshire cattle, Chester-white and Berkshire pigs, Plymouth-Rock poultry. Apply: Honble Louis Beaubien, 30 St. James Street, Montreal.

## THE HARAS NATIONAL COMPANY

30 ST. JAMES ST., MONTREAL.

Splendid Percherons (stallions or mares) Norman French coach horse, all with first class pedigrees, directly imported from France. Owing to our connections in France, we can import the best breeders at the lowest prices. Several of these horses have been awarded FIRST CLASS PRIZES at the last Dominion Exhibition. For terms of sale and to get franco the Catalogue, address:

NATIONAL HARAS COMPANY,

30 St. James St., Montreal.

## ADVICE TO MOTHERS.

Mrs WINSLOW'S SOOTHING SYRUP, for children teething, is the prescription of one of the best female nurses and physicians in the United States, and has been used for forty years with never-failing success by millions of mothers for their children. During the process of teething its value is incalculable. It relieves the child from pain, cure dysentery and diarrhoea, griping in the bowels, and wind-colic. By giving health to the child it rests the mother. Price 25c. a bottle.

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JAUNDICE, OF THE HEART,  
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SALT RHEUM, THE STOMACH,  
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And every species of disease arising from disordered LIVER, KIDNEYS, STOMACH, BOWELS OR BLOOD.

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