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The Field.

Leaves from Farming Experience—No. 3.

Rotation continued.

The 5th crop, rye for soiling before the 15th of June, sown in the fall and manured with 18 tons of yard manure, when the cattle have been fed with cut hay, grain and turnips. The straw for bedding should also be cut, to enable the men to handle it cheaply and spread it on grass or plough it down as wanted. As soon as rye is cut for soiling, prepare the ground and sow Swedish turnips. Top-dress them well. Half that field sow with corn, after working the field well and manuring with 18 tons of yard manure, as it is to be cut green for summer food. I made the drills 18 inches apart and sowed the corn thick, over 2 bushels per acre. When well up, I scuffled it two or three times, hoed and weeded it once. It will soon cover the ground. No weed can get room to grow. Top-dress well. An acre will give over 24 tons of green stalks. You will feed with cut grass as soon as the rye is finished. When the clover gets hard, begin at the corn, and that will feed the cows till the second cutting of clover is ready. As that is being cut, sow daily some plaster, and if 20 or 30 lbs. of sulphate of ammonia were mixed among the stalks you will get a third cutting of clover which will feed your cattle to November. The sulphate of ammonia can be brought from Liverpool or Glasgow, delivered in Montreal, at five dollars per 112 lbs. I used it for years with profit. As the corn is cut for summer food, prepare the ground and sow grass seeds as early as you can, to allow a good braird before winter. Sow plenty of seeds, between 30 and 40 lbs. per acre; red clover, 10 lbs.; alsike clover, 4 lbs.; orchard grass, 15 lbs.; sweet vernal, 3 lbs.; timothy, 6 lbs. I have found it a good way to roll the ground first; then sow the grass seeds; then harrow with light harrow, 70 or 80 lbs. to the pair, to cover 19 feet, the teeth two inches exposed, one stroke. Others sow before rolling, and do not harrow. Others sow without rolling, and draw over the ground an article made of thick boards like a door, to rub in the seed, then roll in spring.

Sixth crop, 10 acres grass after corn stalks for soiling, top-dressed with 120 lbs. salt, 50 lbs. plaster, 50 lbs. superphosphate ammoniated per acre, and 10 acres barley or wheat dressed the same as the grass. As soon as the barley or wheat is off the field, prepare it for grass seeds, the same quantity and kinds as stated before, and top-dressed as above.

Seventh crop, hay top-dressed as above stated. You may add 30 lbs. pearl ash, or 3 bushels common ashes would be better. Expect 4 tons hay.

Eighth crop, hay top-dressed the same. In the fall put on 18 tons of farm-yard manure per acre.

Ninth crop, hay top-dressed same way. Then break up for oats.

JOHN ROBERTSON.

Bell's Corners, Ont.

Root Crops—Their Value, Constituents, etc.

It may be taken for granted that when so eminent a chemist as Dr. Voelcker takes a thing in hand, the results at which he arrives may be accepted as reliable. That he has taken up the subject of roots and thoroughly sifted it, will be, therefore, a source of pleasure to many Canadian farmers who want to know something definite about a crop which is becoming yearly more in favor with them. We will not trouble our readers with the mass of statistics which Dr. Voelcker has brought to prove what he advances, but will give the results he gets from them.

The principal roots in cultivation are the turnip, swede, mangold, carrot, parsnip and beet. These plants in the first

year of their existence produce an abundance of leaves chiefly from atmospheric food, and, through the medium of the leaves, elaborate the assimilated plant-food into sugar, pectine, albuminous, and other organic compounds, which are stored up gradually in the more or less matured root during the autumn or colder months of the first year. These food constituents, accumulated in the root, are expended again in the second year in the production of a flowering stalk and seed, with the ripening of which the life of biennial plants terminates. Besides atmospheric food—from which, indeed, the bulk of our root crops is derived—certain mineral matters are no less essential to their life and luxuriant development, for experience has supplied abundant proof of the fact that without a sufficient supply of lime, potash, phosphoric acid, and other mineral constituents, present in the ash of turnips, mangolds, &c., these crops do not thrive, and are liable to various diseases, such as finger-and-toe, and at the best produce but a scanty crop.

A crop of turnips, amounting to 17 tons of roots, takes from the soil upon which it is grown as much as 364 lbs. of mineral matters; a crop of 14 tons, 238 lbs.; and 22 tons of mangolds as much as 690 lbs. from every acre of ground. By far the largest proportion of the mineral matters thus removed from the land consists of potash, and the quantity of phosphoric acid taken up by root crops from the soil is also considerable, and much larger than the amount carried off in a good crop of wheat or barley. Root crops thus exhaust the land to a greater extent than cereals of available mineral constituents, and they also exhaust the land rapidly of its nitrogenous constituents. Many persons regard root crops rather as restorative crops in a rotation, whereas in reality they exhaust the land far more rapidly of available plant-food than cereals, if the roots are not consumed upon the land. No crop affords so good an indication of the agricultural condition of land as a crop of swedes or mangolds. On naturally poor soils, or on land exhausted by continuous cropping and grown without a sufficient supply of manure, the poverty of the land manifests itself much more strikingly in the scanty root crop than in other crops of a rotation; and on the other hand, a high agricultural condition, or great natural fertility, shows itself strikingly in the heavy root crops which are raised on such land. This circumstance explains the universal practice to manure the land liberally for roots, more especially for mangolds, which remove more plant-food from the soil than any other root crop. It also explains the policy of consuming the roots upon the land upon which they have been grown.

Dr. Voelcker gives the following table founded on numerous analyses showing the composition of the different root crops:

	Turnips	Swedes	Mangolds	Sugar Beets	Carrots (White)	Parsnips
Water	91.6	89.5	88.5	84.5	87.0	82.0
Albuminous compounds	1.1	1.5	1.5	1.5	.7	1.3
Fat	.2	.2	.1	.1	.2	.5
Pectine, &c.	1.5	1.0	1.0	.9	1.2	1.2
Starch	—	—	—	—	—	3.5
Sugar	3.0	5.0	5.5	9.5	6.5	3.0
Cellular fibre	2.0	2.1	2.4	2.5	3.5	7.5
Mineral matter (ash)	.7	.7	1.0	1.0	.9	1.0
	100.0	100.0	100.0	100.0	100.0	100.0

The amount of dry feeding matter, it will be seen, is largest in parsnips and smallest in white turnips. In the former we have as much as 18 per cent. of dry substance, and in the latter only 8½ per cent. If the different root-crops are arranged according to their percentage of dry substance, we get the following order: 1, parsnips; 2, sugar beets; 3, carrots; 4, mangolds; 5, swedes; 6, turnips. As regards the nutritive or feeding values of these different root-crops, Dr. Voelcker is inclined to rank them in the same order.

Of sugar the largest proportion is in sugar-beets, the

other roots following in the same order. The parsnip possesses instead of a certain proportion of sugar, starch which answers the same purpose when mixed with the animal economy, and is converted into sugar when the root arrives at maturity. Unripe turnips and mangolds not only are poor in sugar, but they also contain a number of organic acids, which appear to be the chief cause of the unwholesome properties of unripe roots. If such roots are largely given to stock, it is well known they produce scour, and otherwise disagree with the health of sheep or cattle. Of the organic acids present in roots, oxalic acid, a powerful vegetable poison, is the most important; it has been found in mangolds and sugar-beets, and probably occurs in all unripe roots. Oxalic acid occurs in mangold and turnip leaves in still larger quantities than in their immature bulbs. The presence of this poisonous acid explains the scouring effects produced when cattle are fed upon tops in considerable quantities.

It is a mistake, Dr. Voelcker thinks, to give the enormous dressings of manure to rich clay land, even for mangolds, which some farmers use, and that in many cases a more economical result, and certainly a better quality of mangolds, although not so heavy a crop would be given, if instead the land were manured in autumn with only half the quantity of dung, and the seed drilled in with 3 to 4 cwt. of superphosphate or dissolved bones, which manures have a tendency to produce early maturity in roots. He then gives figures showing that luxuriantly-growing roots always contain more water, as a rule, more nitrogen, and mineral or ash constituents, than less vigorous plants of the same age; and hence large roots, generally speaking, are far less nutritious than better-matured roots of a moderate size. Small mangolds approach sugar-beets in composition, whilst large sugar-beets are hardly better than common mangolds, and monster beets are even less nutritious than well-matured mangolds of fair average size. Monster roots, as is well known, are always very watery, poor in sugar, and almost useless for feeding purposes. The practice of giving prizes for big roots, Dr. Voelcker calls childish. "Such roots may delight or astonish women and children; but what is the use of such productions, and why should prizes be awarded to monster roots which generally contain from 93 to 94 per cent. of water?"

Nitrate of soda is considered a useful addition to bone manures, especially for mangolds. Heavy crops of mangolds have been grown on light lands with 1½ cwt. of nitrate of soda, 2 cwt. common salt sown broadcast and 4 cwt. of dissolved bones drilled with the seed. Salt checks over-luxuriance of tops and prolongs the growth period, but in quantities larger than three cwt. per acre diminishes the root crop. The special effect of superphosphate, dissolved bones, and similar phosphatic manures, is to produce early maturity; and hence phosphatic manures are employed in practice very largely, and with much benefit, by root growers. Mineral superphosphate applied alone to stiff soils generally has a better effect than dissolved bones or mixed ammoniacal and phosphatic manures. Dr. Voelcker recommends the increased growth of the sugar beet, which is good advice for Canadian as well as English farmers. It has been proved that the beet-root can not be profitably grown in Canada for the purpose of sugar-making by reason of the too great abundance of some objectionable chemical constituents in its composition. But that objection has no weight against the beet being grown for feeding purposes, and indeed it is very rapidly growing in popularity.

EFFECTS OF ELECTRICITY ON VEGETATION.—Many years ago, I noticed in a paper that if a sheet of zinc were buried at one end of a hot bed, and a plate of copper at the other, and connected by a copper wire laid over the stable manure and under the earth, a current of electricity would be generated which would stimulate the plants in the hot bed to increased activity of growth. I tried it but without effect, so I never repeated the experiment.—*Sarawak, Presqu'île, Ont.*

Muck and its Constituents and its Treatment.

EDITOR CANADA FARMER:—Observing the correspondence about muck in your columns, I offer the following thereupon. Although aquatic plants—the decaying remains of which mainly constitute marsh muck—are deficient in potash, phosphates, nitrogenous compounds—the necessary constituents of cultivated crops—yet we must bear in mind that in muck we have the excreta and “mortal remains” of aquatic birds, toads, frogs, lizards, fish, shells, infusoria. The chemical resultants of the decay of their animal tissues, of course are valuable as plant food.

The first process in utilizing muck, is to throw it on a firm place to dry, as carting the wet stuff is a great waste. After drying a week or two, it should be carted to some dry situation, laid in heaps, not more than 18 inches in depth, for at least one season, during which period it should be liberally treated to plaster and turned several times.

Muck may also be mixed with barnyard manure and treated in the ordinary way.

Its most marked effects are obtained on very heavy clay, or very light sandy soil.

When well dried and pulverized, its absorptive power makes it valuable as bedding for domestic animals, especially horses and cows, keeping the stall floors dry and sweet.

Muck from the bottom of an old mill pond is, perhaps, more valuable than marsh muck, as in addition to its aquatic animal matters, it contains valuable washings from rich woods and fields, carried down by spring freshets and heavy rains. W. BROMIE.

The Lesson of Post-holes.

I have been favored with a good opportunity for observing the water-line in the soil. Last fall a dozen post-holes were dug on an elevated piece of land. The surface was level, with some slight variations, and the soil (a yellow drift with considerable clay) was considered to be dry, growing tolerably well grain and grass, and, the past season, an excellent corn crop on a field of similar soil adjoining. These post-holes remained open during the entire season, about two-thirds having water, from an inch or two to four and five inches. The rest had dry bottom from spring to fall, there having been no heavy rains during the season, and the slight seepage amounting to nothing. At one end—the lower—where the most water was expected to be, was the least, only one among the first four holes having a little. I accounted for this that here was the most clay, the lower part having received the washings of the upper, making the soil better, also darker, growing annually heavy crops of grass. With the advance of fall the water lessened, and notwithstanding a few rains—one heavy—the post-holes, all but one at the highest point, are without water to-day, October 21.

I learn from this that land apparently dry may be too wet, even in a comparatively dry season like that just past. The post-hole has long been a test with some farmers and its usefulness is here confirmed. Grass will flourish on such a soil; so will grain, and even corn, in a season like the present. There were also excellent potatoes raised, as well as oats and clover. The potatoes, however, were disposed to rot. But as will be seen at a glance, in a wet season the crops must suffer as they do, the frost in some parts and in some seasons heaving the clover and the winter grain. It is the same in a drouth; the surface becomes hard and cracked, and the water below keeps it cold, and but little of it seems to be attracted to the surface. The reason is that it is too compact; the soil is not mellow enough to afford means for capillary action. But tap it by drainage, and new conditions will at once obtain. The land will be warmed by the rain-water passing through, leaving its fertility brought from the atmosphere, and a chemical action supervene. The frost will now act with success, benefiting the land mechanically, leaving it dry in spring, and ten to fourteen days earlier. This is my experience with land similar to that described. And there is much of such land; most of our clay soil is like it good for grass under favorable circumstances of tillage, enrichment, and the season, but not generally to be relied on, and under the most favorable conditions, less productive than when drained.—Cor. N. Y. Tribune.

Lime as a Fertilizer.

Noticing in your paper some interesting articles on lime, and judging that a farther consideration of the subject might be of interest to your readers, I submit the following condensed facts on the fertilizing quality of lime

Lime has little or no effect upon soil destitute of organic matter. Its apparent effect is inconsiderable during the

first year, compared with that which it produces in the second and third years. Its effect is most sensible when kept near the surface, and gradually decreases as it sinks into the subsoil. Under the influence of lime the organic matter of the soil disappears more rapidly than it otherwise would; and as the organic matter becomes less, fresh additions of lime produce a less sensible effect. Many crops carry away lime from the soil. Those most prominent are wheat, barley, oats, turnips, potatoes and red clover. Turnips grown on well limed land are better feeding for cattle and sheep than those grown elsewhere.

The most remarkable visible alterations produced upon pastures by lime are the greater firmness, sweetness, closeness, and nutritive character of the grasses. Its effects on arable land are improvement in the texture and mellowness of the soil, or, if stiff clay, the more productive crops, then better quality, and the earlier period at which they ripen, compared with crops on lands containing no lime. On old pastures, a frequent thin dressing is preferable, while on laying lands down to grass a heavy dressing is indispensable. If the soil be wet, more lime is needed to produce the same effect than on dry land.

The action of lime upon the soil and plants is manifold. It feeds the plants directly. It enters into composition and forms compounds with some constituents of the soil, and thus affords food for the plants. It takes the sourness from the soil by uniting with its acids. It decomposes substances hurtful to the plant, thus destroying them. During the decay of organic matter in the soil, it aids and promotes the slow natural production of nitric acid. With this acid it combines and forms nitrate of lime—a substance very soluble in water—entering rapidly into the roots of the plants. The success of frequent fallowing is partly owing to the facilities which it gives for the formation of this and other natural nitrates.—Cor. Country Gentleman.

KILLING QUACK.—A correspondent of the *Country Gentleman* has closely watched the growth and formation of quack, and his conclusion about deep and shallow ploughing, is that when ploughed deep it partially kills it, and if repeated often enough, will destroy it, but it will take much more ploughing; that when ploughed deeply, a single root will grow to the surface, and then branch out into a large number of roots, again quickly covering the ground; that shallow ploughing keeps the grass near the surface, and the whole mass constantly agitated, leaving no roots to grow at leisure deeply down. Shallow ploughing keeps it more compact and more easily under control, and more exposed to the elements, with much less root hold.

QUICK SOILS.—Very sandy and gravel soils do not hold manure for a succession of crops. They admit of free circulation of warm air through them, which hastens decomposition of organic material, and will mature plant growth in less time than more retentive soils. Hence they are called quick soils. They are better adapted to tap-rooted grain and grass than to the use of fibrous roots growing near the surface. Peas, beans and rye are appropriate. Red clover with a liberal application of gypsum, often does well. Top dressing with straw or other undecomposed manures answers well on such soils, because it wards off the direct influence of the sun to dry the surface, holds moisture, and renders its substance slowly, and is more lasting than decomposed manure. The finer soils, the more retentive and the longer it will show an application of manure.

SMUT IN WHEAT.—This is no more contagious than the mould sometimes found in cheese, as both are minute parasitic plants, the spores of neither of which ever take root in substances uncongential to their growth and development. Anything which tends to weaken the vitality, or in other words make wheat sickly, such as wet soils, long rains, severe drouths, or extremes of any kind, invites the attacks of the smut plant. Soaking the grain in the urine of animals, was practised by the ancient Romans as a preventive of smut and bluestone or brine has been employed for the same purpose for many centuries, but these substances have no more direct effect upon the disease than to assist the grain to make a healthy and vigorous growth and thereby, to become able to resist the attacks of the smut spores. If you will only manage to keep your wheat healthy, smut or similar disease cannot injure it. In uncongential climates this cannot be done; hence losses in spite of the best efforts of the husbandman.

HARVESTING OATS.—I have found out accidentally that the best way to save oats is to cut them while the sap is in the straw. (grain in the dough or some in milk) bind sheck (about twelve bundles) and cap by breaking the bundles and laying on top. The past season thoroughly tested it, and saved a few capped as above without mould, when nearly every bundle was mouldy when capped by tying two bundles together and setting butt up, which leads the water through the sheck. The reason I assign is, the oats being bound green, the shrinkage of the straw leaves the band loose, so that if they get wet, they have a chance to dry. If bound ripe, or after being stinned a day, as is the practice generally, I believe, and they get wet, the straw swells and makes the band so tight that mould is the inevitable consequence, unless opened and spread. I have noticed a few bundles at different times cut when so green that in curing, in the centre of the sheck they, became nearly as white as this paper.—Cor. Country Gentleman.

Grasses and Forage Plants.

Italian Rye Grass—*Lolium Italicum*.

The Italian Rye-Grass, *Lolium Italicum*, represented on this page, is a variety of the *Lolium perenne* illustrated in our last issue. We are not aware that it has been grown in Canada, but it has been grown experimentally in the United States, and has been found to succeed well. In connection, we refer our readers to another article on this page.

Italian Rye-Grass differs from Perennial Rye-Grass in having its spikelets more conspicuously bearded, and in the flowers being terminated by long, slender awns. It is a native of the plains of Lombardy, a district which is frequently inundated and where one of the chief characteristics of the plant, viz., the readiness with which it responds to irrigation, is called into play. In England, it



is grown very extensively, especially on the farms which are irrigated by the sewage of cities. It is of this grass that the great weights are cut from the sewage farms. Our recollection is that twenty-one tons in a year have been cut from an acre on the Warwick sewage farm.

Though succeeding best under irrigation, Italian Rye-grass stands drouth well. Cattle eat it greedily. It is sown, after the field is harrowed, at the rate of about eighteen pounds to the acre. It is more hardy than the Perennial Rye-grass, as it will stand winters in the north of Europe, where sometimes the latter is killed. It loses less in drying than any grass. A moist, rich, tenacious soil is best suited to it. It is one of the best of soiling crops. Weight for weight fresh cut Timothy greatly excels fresh cut Italian Rye-grass in nutritive qualities. In the dried state the difference is not so marked, but it is still, weight for weight, in favor of the Timothy.

MOSS IN LAWNS.—The best and most economical method to get rid of moss in lawns is to rake whenever the ground is bare in winter. Even when the ground is frozen the moss is readily torn up. After the moss is removed, give a top-dressing of finely-rotted barnyard manure, and early in spring sow on a liberal quantity of blue grass seed and a little white clover. Then roll with a heavy roller and not mow in spring until the young grass has become well established.

The Rye Grasses in Central New York.

Says D. Batchelor in the *Utica Herald*:—There are many tons of perennial rye grass seed imported every year into this country from Scotland and England, and sold by the Seedsmen in meadow, pasture and lawn mixtures. I have tried this grass three winters in succession and find that here in Oneida county, and even in a protected garden in this city it "winter kills" root and blade—every vestige disappearing, no matter how thick the mat in autumn. Now here is one of the most valuable grasses known to English agriculture, while, if I am correct, it is of no value to us, and yet this variety is constantly recommended by agricultural writers who apparently make up their lists of meadow grasses for our region, from similar or some other English authority.

Italian rye grass is quite another variety, not to be confounded with perennial rye. and is, when grown in our meadows with other grasses, quite hardy, making the best of hay.

I would urge every farmer to test and try for himself, by actual experiment, what are or what are not the grasses best adapted for his own land. How easily this can be done. A strip of clean land 50 feet long and 10 or 15 feet wide, would be ample space to test twenty or more varieties. The kinds should be sown across the strip, and well apart so that there may be a foot or more between the rows, which ought to be hoed to keep the distinction marked. To this strip the farmer and his family could come and mark the progress, early or late, of each kind, note its peculiarities of blade and flower, observe which does or which does not stand the winter, which is tall and succulent for hay, which is short and crisp and stools well for pasture. Here would be an object lesson teaching the senses in a way not likely to be soon forgotten.

Manure for Grass.

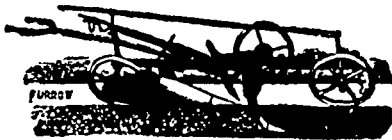
No crop gets less attention than grass. If manured at all, it is only incidentally with some other crop—rarely for itself alone. Corn, wheat and barley get the manure, and when seeded, so young clover takes what is left. After that, if the field be pastured, the droppings of animals left in lumps over the field, are all that the lands get till ploughed again. This is considered improving the soil; and it is. No matter how mismanaged, clover is a benefit, and whatever else he may do, the farmer who sows and grows clover, is making his farm better. What, then, might not the result be, if the same care were taken of the clover field as of other crops? It does not need cultivating; the long, deep reaching roots mellow and pulverize the soil as nothing else can. If the clover grows thriftily, the top acts as a mulch, shading the ground and keeping it moist. A crop of two tons or more of clover, whether ploughed under or cut for hay, can hardly fail to leave the soil better than it was before. It should be the farmer's aim to grow the largest possible crops of clover. A slight dressing of gypsum—one hundred pounds per acre in early spring—often produces wonderful results. But if a farmer has a little well rotted manure, the scrapings of barnyards, fall is the time to apply it. Clover is often injured by freezing and thawing in winter, and a very slight covering of manure will afford a great deal of protection. Rich earth from corners of the fences, is well worth drawing a short distance on young clover, provided the ground is hard and firm. If the field is not to be mowed next season, coarser manure can be used.—*Country Gentleman*.

FAILING TO CATCH.—The failure of timothy seed is very often due to an impoverished condition of the soil. All plants after germination are nourished for a short time by the seeds from which they germinated; and the smaller the seed so much the sooner is this source of supply exhausted, and the plant forced to draw on the soil for its nourishment. It follows then, that if the soil is deficient in proper nourishment for young plants, they will perish from mere starvation. In a case like this, a liberal application of barn-yard manure on the surface of the soil before seeding, is the only thing that will insure a good catch of any variety of grass seed. Another and very frequent cause of the uncertain seeding of grass is drouth. We have what we call good seasons and poor seasons for seeding to grass, which means that in one season a succession of warm refreshing showers after seed time, insures a good catch of grass with ordinary seed, and on the poorest soil; or that a period of dry weather after seed time, reduces the seed-bed to the condition of an ash-heap, killing the young plants immediately after germination. The careless, thriftless farmer is more apt to experience these bad seasons than the good farmer. The remedy for drouth is always a part of the good farmer's plan of operations. Good thorough cultivation before seeding, and rolling immediately after, will enable soil to withstand drouth and retain moisture to a great degree. Sow grass seed as early as possible in spring with some grain crop to shade it, and I think no trouble will be experienced from drouth.—*Cor. Country Gentleman*.

Implements.

Combined Plough and Subsoiler.

The advantages of the combined plough and subsoiler pictured on this page will be seen at a glance. In form it resembles a double furrow-plough. When used as a combined plough and subsoiler, the right hand mould-board and coulter are taken off and a subsoiler put in their place. There is no treading by horse or man on the subsoiled land, the draught is much lighter than that of ordinary subsoilers and the implement is firm while at work. The



subsoil tine is carried by a joint and stud, proportionately strong. The depth is regulated by the fore-wheel, and the tine prevented from burying itself and turning over by a stay on the bracket. A lever handle, within reach of the ploughman, enables him to take the tine up, or assist its entrance into the subsoil. The tine is fitted with a shoe, 6 inches wide. As the subsoiled ground is immediately covered by the plough, the effect cannot be interfered with by the horses' pressure.

SAW SETTING.—After filing a saw place it on a level board and pass a whetstone over the side of the teeth until all the wire edge is off them. This will make the saw cut true and smooth, and it will remain sharp longer. The saw must be set true with a saw-set.

SLATING ROOFS.—In the best work, slates are secured by copper nails. Iron nails dipped in boiled oil to prevent their corroding may be used. The nails should have large heads, thin and flat, so that they may not prevent the slates from lying close. Every slate should be secured with two nails; and in nailing, care should be taken not to bend or strain the slates, or they will crack and fly under sudden changes of temperature.

BUYING HARNESS.—When you think of buying a harness, examine the leather of the hame strap and the near tuck of the throat latch, and likewise of the crupper. If these ends are of a slazy stuff, calculated to squash and plague you while trying to make them enter the loops, don't buy. The man who cut the harness did not have the interest of the purchaser in his mind. At three separate and distinct scowls for each buckling the harness would be dear as a gift. And most likely faults and oversights run through the entire rig.

FRENCH POTATO PLANTER.—The *Journal d'Agriculture Pratique* states that among the new machines which especially attracted the attention of agriculturalists at the recent meeting of the Palais de l'Industrie was a potato planting machine, invented by M. Couteau, and constructed by M. Peltier, jr. By means of an ingenious contrivance, worked by a gear, the tubers, previously placed in a box, are carried successively into a pipe which opens and shuts automatically, depositing the seed with perfect regularity in the furrow made by a share with which the machine is provided.

A NEW CEMENT.—A French chemist is said to have succeeded in preparing a mineral compound, said to be superior to hydraulic lime for uniting stone and resisting the action of water; it becomes as hard as stone, is unchangeable by the air, and is proof against the action of acids. It is made by mixing together 19 pounds of sulphur and 42 pounds of pulverized stoneware and glass. This mixture is exposed to a gentle heat, which melts the sulphur, and then the mass is stirred until it becomes thoroughly homogenous, when it is fit for use; operate as with asphalt. If needful, it may be remelted by applying a gentle heat. The whole mass melts at about 248° F. At 230° F. it becomes as hard as stone, and preserves its solidity in boiling water.—*J. F. W.*

CHEAP DRAIN TILES.—If you cannot get pipe tile for draining, and have plenty of pine slabs at your mill, you can saw them off into bolts four feet long, then rip them into strips half four inches and half five wide; now saw them into boards one inch thick. Now nail the five-inch piece upon the four-inch, and you have a V-shaped tile. Dig your ditches two and a half feet deep, with an even descent; place these wooden tiles in with the open side down, throw some brush on top, and fill with dirt. The tile will last, in clay soil, fifteen to twenty-five years; in a light soil somewhat less; but it makes effectual drainage, even after the wooden tile are partially decayed. But where tile can be had for a reasonable cost, say \$9 or \$10 per thousand, it is cheaper in the end to use them. But in case tiles are used, it is well to put a layer of brush over them to keep the dirt from packing around them.—*Live Stock Journal*.

On Turning a Faucet.

How handy it is during the cold, blustering weather of winter, when everything is frozen and the paths about the house and barns all drifted up, to have an abundance of pure water for farm stock and household purposes under cover, just when and where it is wanted. While your neighbor is bringing water from a pump six or eight rods from his door with which to do the cooking and washing, and driving his cattle forty rods to a brook which must be cut out every morning—all you have to do is to turn a faucet, and the water comes in any quantity at your bidding; or by a better arrangement still, runs through your yards or shed, keeping a tub always supplied. No, this is not all you have to do; but once go to work in a resolute manner, perform the necessary conditions, and then with a slight turn of the thumb and finger the spring water from the hillside fills your bowl in a minute. This is just the season for performing this work, and when once done it is done for a lifetime. On how many farms are these brooks and springs situated above the farm buildings, which with but a comparatively small outlay of time and money, could be conducted into the kitchen sink, or the stable yard, and be forever a source of comfort and satisfaction.

Iron pipe is now so easily obtained, so cheap, and so satisfactory a water-carrier, that there would seem to be no excuse for bringing water in pails long distances the coming winter, or driving stock to water twice a day, to a brook forty rods away. Put the whole force of the farm hands on the work of opening the ditch, purchase the pipe, get an experienced man to do the fitting, and the whole job can be done up in a week's time. And no matter what the cost, so that it be reasonable, you will never regret the outlay. Count up the steps, the time, the inconvenience, the fretting, the suffering from cold to yourself and animals in getting through one winter by the waterpail and frozen brook arrangement, and offset it against the cost of having things so fixed that the turning of a faucet will supply all the water household and stock need—not for one winter, but for twenty—and see if you would dispense with the latter for all it would cost, returning to the old system. Now is just the time to introduce the reform. Follow our advice, and make yourself and family, flocks and herds, laugh out with satisfaction.—*Maine Farmer*.

A Convenient Door Hasp.

Below is figured a simple fastening which the editor of the *Country Gentleman* says has been in use with him for many years, and is found convenient and never liable to getting out of order. It is shaped like a common hasp, with a small blunt projection from the lower side, so as



to drop into the staple. When the door is to be merely shut, as during the day, the projection is simply dropped into the staple. When a padlock is to be added, the opening in the hasp is placed on the staple, and the lock hooked in.

A CONVENIENT GLUE.—Mouth glue is made by dissolving, with the aid of heat, pure glue, as parchment, glue, or gelatine, with a quarter or one-third its weight of coarse brown sugar, in as small quantity of boiling water as possible. This, when perfectly liquid, should be cast into thin cakes on a flat surface, very slightly oiled, and, as it cools, cut up into pieces of a convenient size. When required for use, moisten one end. A piece kept in the desk or workbox is exceedingly convenient.

WINDMILLS.—Why do not farmers erect windmills on their premises? They may often be used to great advantage in a variety of purposes, such as pumping water, sawing logs, cutting chaff, slicing roots, bruising and grinding corn, etc. They eat nothing, and would save a deal of horse and manual labour, when rest would be very acceptable to both man and beast. There is true economy in this, and it would be worth not only thinking about but doing.—*J. F. W.*

MEND YOUR OWN TUGS.—The best way to mend your own tugs is to keep some harness leather on hand and copper rivets three-quarter inch long and caps with a good steel punch. If a tug breaks, cut two strips of leather as wide as the tug and eight inches long. Put the broken ends together with one piece on each side, punch and put three rivets on each side of the break through these strips and the tug, and head down on caps. This makes a neat and a strong mend. You can mend other portions of the harness with rivets of the proper length, and save much time in going to the harness maker.—*Live Stock Journal*.

Horticulture.

THE ORCHARD.

A Remarkable Apple.

EDITOR CANADA FARMER.—Mr James Douglass, of Owen Sound, has sent a very remarkable apple for the inspection of the Directors of the Fruit Growers' Association. It grew on a Roxburgh Russet tree, whose branches were interlaced with those of a Seek-No-Further apple tree. The fruit is exactly divided in appearance and taste between a Roxburgh Russet and a Seek-No-Further apple. One half is russeted, and the other half has the look of a Seek-No-Further. On examination under a glass, the flesh of the two halves seemed different, the flavor entirely double, sharing in the characteristics of the two mentioned varieties of apples. The seeds in the lobes, bearing the unmistakable marks of the russet and plain apple, were differently formed, and were even different in size.

Mr Charles Arnold, who helped to make the examination, thought it was a case in which the pollen of the fructifying variety not only modified the seed-vessel of the russet, but imparted another character on the principle of "superimpregnation."

We question if a greater curiosity in fruit growing has been witnessed in our Province. It would be useful to note and to record these "*lusus naturæ*." The attention of the members of the Fruit Growers' Association of Ontario has again and again been drawn to natural curiosities of a similar nature. Often, however, their record has been omitted.

Mr Douglass has received the two apparently distinct kinds of seed, and he intends to raise them, to further test this remarkable chance hybrid. Your readers may yet learn more of this singular pomological specimen. The seed may be productive of an entirely new variety of apple. We will await with some degree of curiosity the germination of these seeds.

B.

Hamilton, Nov. 11, 1875.

Apple Trees Bursting their Bark.

EDITOR CANADA FARMER.—In reply to correspondent asking in your last issue for information about the cause of the bark of apple trees splitting near the roots, I attribute that to the freezing of the descending sap by the early advent of a sharp frost. Some of my bearing apple trees were affected that way a few years ago. Wherever the bark split all around, the tree died, but when it split about half way around, the tree was not much the worse for it. In this case the next spring, the trees should be banked up with earth as high as the split extends, and new bark will begin to form under the earth. This season the fruit has of kinds retained their coats of many colors, sometime after the hard-wood forest trees were denuded of their summer foliage.

SARAWAK.

What the Fruit Growers' Association is Doing for Horticulture.

EDITOR CANADA FARMER:—At the recent meeting of the Fruit Growers' Association at Belleville, the President gave an answer to the question sometimes asked, "What is the Fruit Growers' Association of Ontario doing for horticulture?" To those acquainted with the working of the Association, the question and the answer might almost be considered in the light of a work of supererogation, inasmuch as few societies in the country have made greater strides than it has done during the few years of its existence.

The first successful hit, perhaps, that the Direction made on the very outstart of the society was, to determine to distribute to each member of the Association a fruit tree of tried and approved excellence, and not in general cultivation in the Province. This effort acted like magic in increasing the membership, which speedily arose from the second or third hundred to as many thousands. The benefits, however, were not to be measured merely by the

increased membership, but by the lasting good accruing to farming fruit growers, from really possessing trees of acknowledged excellence and value, leading to a greater and improved taste in fruit production.

The fact of the distribution set at rest for ever the former ideas of members to possess an experimental farm for the testing of different varieties of fruit trees. It in fact made the Province as a whole an experimental garden. The Association demands stated reports of the hardihood and adaptation of the trees sent out, their fruitfulness and satisfactoriness to the grower. In general the satisfaction expressed has been great, and all that could be desired. Difficulties doubtless have arisen, as might be expected, in distributing trees to nearly three thousand persons; but, after all, the plan has given very general satisfaction.

The Association has often expressed its desire that the Government would devote a portion of the Model Farm at Guelph to the testing of Canadian seedlings. The importance of the suggestion has not yet been appreciated, and in the meantime, partly to remedy the want of action, the Association has entered on the path next best to their carrying out of the suggestion, of issuing the hybrids and native seedlings brought to public notice by our fruit growers.

A happy thought too, was the illustrating of our proceedings with coloured plates of the fruits disseminated—we cannot but notice the able manner in which these illustrations have been carried out. In the absence of the ability and skill to do it in the Province, the Direction had the good fortune to fall into the hands of the Amana Society, Homestead, P.O., Iowa. It will be conceded, we think, that the plates have been admirably executed. Now the work can be efficiently done in Toronto, and there the Directors are getting our Canadian hybrids fruit-plates executed. The public learning as they do, as much by the eye as by the ear, the success attending the illustrations has been very great, and the colored plate illustrations have given an impetus to the interests of our Association.

Another means to bring our Association into notice and favour, has been to appoint Committees to make reports on the fruit-bearing districts of our Province. Some of these reports have now been for years before the public, who have shown their appreciation of them, and have often been governed in their selection of fruit-trees by the very admirable suggestions of the Committees.

Prize essays on the various fruit subjects have also been called forth by the liberality and enlightened views of the Direction of the Fruit Growers' Association. These papers contain a large amount of most reliable information on all the subjects treated. Let Beadle's paper on the apple, and Saunders' and Elliott's Essays on the plum bear abundant evidence to this fact. We question if more reliable information can anywhere be obtained than is to be found in these and other papers of fruits peculiarly adapted to Canadian fruit-growers.

The establishment of the Entomological Society on an independent basis, has also exerted a most beneficial influence on fruit growing. Attention has thereby been directed to insect pests—injurious to fruit and fruit-trees, and to those beneficial to all the labors of the horticulturist. Saunders of London, and Bethune of Port Hope, have been leaders in this good work—their works are likely to live after them. The publication of the *Canadian Entomologist* also testifies to the unwearied diligence, assiduity and ability of these gentlemen and their noble co-adjutors.

The Association may be said to be the fosterers of hybridization—this art, long practised by fruit growers on the other side of the lines, has found wise adepts in Canada. Arnold is distinguished for his hybridizations in wheat, peas, flowers, and fruits, especially for his apples, raspberries, and strawberries; Saunders for his raspberries, gooseberries, pears, and grapes; Dempsey for efforts in hybridizing which reach over a period of nearly twenty years, in which he has produced grapes, pears, and apples that will hand down his name to posterity, as one of the foremost benefactors of our country.

The Reports of the Association are hereafter to be illustrated with Canadian hybrid fruits.

In no way has the Association shown itself to be more alive than in the calling forth for Exhibition seedling fruits of all kinds in every district of the Province. At

Belleville the display of seedlings of superior excellence and rarity was something immense. Had the Association done nothing more for fruit interests than this, a great work for the Province would have been accomplished. These seedlings will yet prove a splendid acquisition to the pomology of our country.

As members of the Fruit Growers' Association of Ontario, we propose still further to add to our usefulness, by putting in the best appearance possible at the forthcoming Centennial Exhibition at Philadelphia. Every patriot, we are certain, will wish us God speed.

B.

THE VEGETABLE GARDEN.

Raising Artichokes.

If we take into account the ease of culture, freedom from the ravages of insects, and its surprising yield, I think the artichoke will take the front rank among root crops. Doubtless many are deterred from raising them from a mistaken idea of their spreading in the ground. When I first planted them, five years ago, my neighbors told me that they were worse than the Canada thistle to spread, and they evidently thought that if I introduced the artichoke in our neighborhood, it would ruin our farms; but after I have cultivated them for five years, and my neighbors have seen that they did not spread, several have been induced to plant them. I raised last season fifty-six bushels on one-thirtieth of an acre, which is at the rate of seven hundred and twenty-eight bushels per acre. As it was very dry last season, I expect to do much better this fall. I have this year the same piece of land in artichokes that I had last, and will report when I dig them.

One advantage they have over any other root crop, except perhaps the parsnip, is that they require no protection through the winter. I prefer digging in the fall, as they come out of the ground clean and ready for feeding without washing. The plan that I have adopted in raising them is to plant as early in the spring as the land is dry enough to work, preparing the land and planting as I would potatoes. I cultivate and keep the ground clean and mellow, until they are three or four feet high, then hill up with large hills, and they will fill them. They do not set until about the time they blossom, which is in September, but they will grow then more in one week than the potato will in four. I feed them to cows and hogs. I think that I could fatten hogs on them without any other feed. When fed to cows, they have largely increased the yield of milk, being in that respect equal to the cabbage, but making much richer milk. I think I shall plant a few this fall for my hogs; late next season turn in the hogs, and let them help themselves through the winter, when the ground is not frozen; then early in the spring turn off the hogs and plough and drag, and they are ready to grow another crop without planting, as the hogs will leave enough in the ground for seed. If more come up than are wanted, cut them off, and they are killed as easily as potatoes would be. Those of my brother farmers who would like to grow a valuable, easily-raised, heavily-yielding root, I would advise to try the artichoke.—Ohio Cor. Country Gentleman.

Parsley Culture.

The English and the French make great use of parsley in cooking; and nothing astonishes them more than to note how comparatively little it is used in America. This is not, we believe, so much from ignorance of its value as because so many fail to grow it successfully. It is probable that most people sow it; and yet large quantities never grow, or, if it grow at all, it is destroyed. One thing has to be borne in mind; that it takes longer for parsley seed to sprout than any other kind of garden seeds. In consequence, people think that the seed is bad and put something else in its place, or weeds grow and smother it out; or, if they get through all these accidents, it is so late in the season that the hot weather comes and burns it out. It is rarely that it makes its appearance under six weeks, and this should be borne in mind in sowing the seed. A clean piece of ground should also, of course, be chosen, and if the land is cool, so much the better. As soon as the frost is out of the ground, the seed should be sown; the sooner the better.

It is quite likely that, in our climate, it would be best to sow parsley in the fall, leaving the seed in the ground all the winter. Then it would sprout early in the Spring, and thus get strong before the hot weather comes. This is only a suggestion. The plan of Spring sowing, introduced from English gardening, is followed so implicitly that no one seems to have thought of this. It is possible that this Autumn sowing might give a tendency to run to seed, but a care to pick out the flower stalks as they appear would be enough.—Philadelphia Press.

THE FRUIT GARDEN.

How to Grow Grapes under Glass.

The following paper, showing how to grow grapes under glass with little trouble or expense, was read before the Ontario Fruit Growers' Association at their meeting last autumn, by James Dougall :

Many persons would be induced to erect a small vinery for the culture of the finer varieties of foreign grapes, were it not for the great trouble attending their culture under glass in the ordinary manner, in watering, syringing, ventilating, &c., requiring the services of a professional gardener, or occupying more time and attention than the generality of persons can spare.

By adopting the following plan in erecting the vinery, they will be relieved of the greater part of this trouble, and have a fine supply of delicious grapes, with no more trouble or attention than is required to grow the natural vine out of doors.

The sashes are made stationary, but so that they can be unscrewed and taken off for repairs at any time. They extend from the front wall to within a foot or ten inches of the back wall at the top, leaving an opening of ten inches wide along the top, to be closed by sheet-iron ventilators in winter or when requisite, but which is kept constantly open from the time the vines are uncovered in the spring, till they are laid down and covered in the fall.

The principal peculiarity is in the glazing. The glass is laid end to end without lapping or putty, and merely kept in its place by small pieces of tin, and a space of half an inch is left open between every third or fourth pane, so that all the rain that falls on the house is distributed pretty equally over the entire house, very little running off the roof except in very heavy thunder storms. There is no ventilation whatever below, as a draught I have found injurious to the vines. Any air that comes in is by these openings in the glazing, and the heated air finds vent at the top.

Last year was a very dry one, as well as this, we having no rain here for months; but the vines never suffered from the drought, though they were never watered or syringed from the time they were uncovered in spring when it was done copiously, till again uncovered this spring. Nor were they the least affected either last year or this with mildew or red spider; though previous to adopting this plan I was annually troubled with both, in spite of syringing copiously morning and evening.

My present vinery was not erected for that purpose, but for a small conservatory, and the floor was sunk about two and a-half or three feet, with a brick wall all around. About twelve years ago I filled it up level with good compost, and planted the vines all inside, there being no opening for their roots to extend to the border outside. It was attended principally for proving seedling vines of the foreign varieties and the newer varieties, then out, with a few of the best old varieties, and in a space of twenty-four by fourteen feet contained for several years thirty-six vines, which were thinned out as they were proven worthless, till it now contains twenty-four; this is still too many, about sixteen being all that could be properly grown in that space. Last year it got a liberal supply of liquid manure in spring; this year it got nothing but clear water at first, and rain as it falls, and is doing as well as last year, and vigorous enough for a house containing so many vines.

The ends of my present vinery are not glazed, having only a small window and door on each end. Were I to erect a new one I would have the ends glazed to within three feet of the ground, and would have openings in the front wall to allow the roots of the front row of vines to extend into a prepared border outside.

For those who may wish to try this plan, I would recommend the following varieties as being the most successful with me, and of the finest quality:

1, Black Hamburg; 2, Muscat Hamburg; 3, Champion Hamburg; 4, Lady Downes; 5, Golden Hamburg; 6, Bowood Muscat; 7, Buckland Sweet Water; 8, General de la Marmora.

The first four are black or purple grapes, and the last four white grapes.

No. 1 is far the most profitable and best of the blacks, and Nos. 6 and 7 of the whites. Nos. 4 and 6 are the better for artificial impregnation, as they do not set the fruit very well.

The principal trouble in following this plan, more than is required in out-door culture of the native, is the necessity of thinning the grapes on the bunches to about one-half when about one-quarter grown, to give room to the rest of the berries to swell.

Names of Parts of a Grape-Vine.

N. F. Lund, in an address before the North-western Wisconsin Agricultural society, thus defines the principal parts of a grape-vine:

The stock is the main part of the vine above the root and below where it branches. The stem includes those portions which have ceased to bear shoots, and are two years old and over. The arm is a portion of the stem trained in a horizontal position. The cane is a ripened shoot, from

six to eighteen months old, or until it comes to bear shoots directly from its own bud. The spur is a cane cut short. The shoots are the growth of the current year until the fall of the leaf. The laterals spring only from the buds on shoots, and are simply the shoot producing itself from its own buds. The nodes are the joints in the shoots and canes from which spring leaves, buds, tendrils, or clusters and laterals. The internodes are spaces between the nodes; both these latter disappear in the stem. The tendril is a twining support. The cluster or bunch is a tendril perfected into fruit. The buds on the shoots occur only at the nodes in the axils of the leaves. They are of two kinds growing side by side. From one springs the lateral, making its growth the current year; the other remains dormant, perfecting for the growth of the shoot the coming year. There are also the blossom-buds, which appear only on the tendrils and the berries. The whole make up the vine. Let it be borne in mind that the vine has not leaf-buds and fruit-buds distinctly, like the apple, but leaves and fruit come from the same bud, borne on the shoot, the growth of the present year itself growing from the bud perfected for that purpose the previous year. No part of the vine which has once borne leaf or fruit will bear it a second time.

THE RED THORNLESS RASPBERRY.—A correspondent of the *Gardener's Monthly* states that this new variety "has a decided advantage over all other raspberries. It is perfectly thornless and hard. It stands the heat of summer and the cold of winter better than any other. Bears from different culture better than any he knows. It is a prolific bearer, with a very large, sweet, and delicious berry, and is a vigorous grower." That is the raspberry bush we want to lie under during its season, if it takes all summer. Can't some of our friends try it?

THE FLOWER GARDEN.

Portulacca.

The Portulacca is a very fine-looking, easily grown, popular and altogether desirable ornament. It is most effective on rockwork, but is well at home in baskets, vases, small beds or edgings. There are both single and double varieties—the latter being very fine. It grows of almost every color, some being beautifully striped. An open sit-



uation, exposed to the full light of the sun, suits them best. They flower throughout the summer, and once planted will reseed themselves. A bed of them forms a most attractive object, particularly on a bright day. The seed may be sown early in the open ground, or they may be sown in a hot-bed, or indoors in a flower pot, and planted out. The seedlings should be set about eight inches apart. For the engraving we are indebted to Mr. Rennie, of Toronto.

GERANIUMS FROM SEED.—One of the most interesting operations pertaining to the florist's pursuit is that of producing new and improved varieties of flowers. The Geranium offers an excellent field for our operations, and just before frost entirely destroys the foliage is the proper season to collect the seed. These should be spread out to dry for a short time in a shaded spot, and then sown in light soil, covered lightly and watered sparingly, until the young plants show, which will be in a few days, should the sun be good. Where a greenhouse is not accessible, the boxes must be placed in a warm, sunny window, and as soon as the little seedlings show two or three rough leaves, they must be transplanted either into small pots singly, or else thinly into other well drained boxes. By planting time in spring we shall have good, strong plants, which will soon show flower, and we may then readily distinguish those which promise to be valuable. But Geraniums very frequently do not arrive at perfection the first season. It is, therefore, poor policy to throw them away if there are any signs of excellence in any new variety.—*New York Tribune*.

INFLUENCE OF THE SEASON ON THE STOCK.—A curious instance is furnished by an English journal. A pendulous variety of Abutilon was grafted on stocks about six feet from the ground. Some shoots were left on the stocks below the graft, to prevent too serious a check in the growth, or in common parlance, to "draw the sap." The flowers of the variety inserted were always mottled and spotted, and the shoots on the stock, being left on, have borne flowers beautifully mottled, blotched and barred, like those of the graft. The influence of the graft on the stock in apple trees is well known to nurserymen, each variety having its peculiar roots—the Yellow Bell-flower, for example, always having finely branched fibres, while the Tallman Sweeting invariably presents but few stout, horny roots when the trees are dug, no matter what stocks were used in either case.

The Poultry Yard.

Raising Squabs for Market.

In accordance with your desire, and in answer to an enquiry in regard to raising squabs for Boston market, I will say that I have kept pigeons for a number of years, and during that time I have taken much pleasure in watching their habits, and have given some attention to the raising of squabs for market, and I can confidently say that it can be carried on with profit, when rightly managed. In order to make it a paying business, good care and attention is as necessary as in keeping fowls.

First, a room should be made for them, the size of which should be ample according to the number of pigeons kept. Then there should be boxes arranged for each pair separately, in which to raise their young. The entrance should be so arranged as to give it a sort of hiding place or safe appearance, though the light should not be excluded. To undertake to raise squabs without these accommodations, that is, in a mixed up huddle, one might as well undertake to raise beans in a hen yard.

Next, care should be taken to select the larger kinds of pigeons, as they will produce the largest squabs. Then those of light colored plumage should be selected, as squabs with a light skin look a great deal the best in market. The time to prepare squabs for market is just before they are old enough to fly, as it is at this time that they are prime, and make a very wholesome, as well as palatable, dish for the convalescent. It is better to take them away as soon as fit for market, as they cause less disturbance, and the old pigeons have nothing to do then but lay again. I think, as a general rule, pigeons will turn out at least three pairs of squabs in four months' time. Of course there are discouragements to be encountered, as in every other branch of business. Hawks, cats, and rats are to be guarded against, and the eggs are not always sure to hatch, or the young ones to live when hatched. I have sold since last April from three pair of pigeons three dollars worth of squabs, selling them to the fowl dealers who take them to market and pay me twenty-five cents per pair; but I think I have been selling them too low, as I find upon inquiry that others who are in the business are getting more, as I have myself at other times.

I think the most profitable way is to keep a large number of pigeons, and have a large number of squabs in readiness for market at a time, and then send them to market directly, and thus save, if possible, the middleman's profit.

I think if these rules which I have given are observed, the results will be sufficient to make the business a success, though perhaps on a small scale.—*New England Farmer*.

SCRAP CAKE.—If the poultry keeper lives near a soap and candle factory, he will find that chandlers' scraps are well worth using as feed for his fowls. Such scraps are sold at from two to three cents per pound. They are pressed when hot in great cakes, of the size of large cheeses, and when cold they are very hard, as the gelatine and glue they contain cements the mass very firmly. To reduce the scrap cake to fragments suitable in size for poultry is the problem. The easiest way to manage is to chop it with a hatchet into pieces the size of butter-nuts, then soak over night in cold water. This will soften the scraps so that they can be easily chopped. The best way to chop them is to put them into a stout box of convenient size, and use a common spade ground to a sharp edge for a chopping knife. In this way the strength of two hands can be employed, and the labor of mincing will be comparatively slight. Scraps are so tough, that unless you go to work right it costs more than they are worth to get them to pieces. When the fragments are cut to a suitable size, thicken the jelly-like mass with meal or bran. Feed scraps a little at a time, and often. Remember that while a little animal food is very beneficial for poultry, too much is worse than none at all.—*Poultry World*.

The Breeder and Grazier.

Cooking Food for Animals.

The *German town Telegraph* says:—"We are well aware that the feeding cooked food to animals, even horses, was at one time very much the fashion, and the steam boiler was to be found at every barn. It was regarded not only as healthful and preferred by the animals, but economical. But for some reason, which we have never heard explained fully, the practice is not now so common, many persons having discontinued it. For horses and cows, except milch cows, and for fattening bullocks, the method is not approved by a great many experienced farmers, but for swine and poultry cooked food is no doubt excellent, though it should be used in feeding swine moderately with their whole corn and cold water. We have heard that, considering the labor and expense of cooking, it was not economical; but we mention this as the statement of a Bucks county farmer, and suppose there is something in it."

Precisely the opposite is the case in Ontario. Near Toronto, to our knowledge, the use of steamers is greatly on the increase, and is found to pay handsomely. We are informed also that in other parts of Ontario the practice of cooking food is coming more in vogue.

Breeding Short-Horns.

Mr. B. F. Vanmeter, one of the best known of Kentucky breeders, writes a valuable article to the *Live Stock Record*, on the art of breeding Short-horns. After giving a few items of his early recollections he proceeds:—"There is a great deal said and written about in-and-in-breeding and breeding in line, both of which might be correctly termed short-horn phrases, frequently used and variously defined in the minds of the different persons who use them, varying however less in kind than in degree—therefore it may be proper, just here to give a definition for each to-wit: In-and-in-breeding means coupling sire with his get—or full, or even half brother and sister, together. Breeding-in-line means keeping one and the same strain of blood predominating in the male and female which are coupled together, though in one or the other it may be decidedly in the minority, while in the other it is sufficiently predominating to give, when re-enforced by the minority, a controlling influence in fixing the type and style of the produce. And now, after making these explanations, I will make the assertion that there is no other way whereby Short-horns can be bred up to the highest type of perfection and excellence—or can be kept up to this type after they are bred up to it, except by judicious in-and-in-breeding and by keeping in line. In fact, just here is the real science and skill of Short-horn breeding displayed—for the converse of this proposition is just as true—there is no way whereby a herd can be more rapidly bred down than by injudicious in-and-in-breeding; for it is bad enough to use an inferior sire the first time, but it is next to total destruction to use him upon his get, and thus not only magnify his faults, but render them so fixed in the produce, that it will require several crosses of judicious breeding to eradicate the fault, and many more to so overwhelm the bad blood thus inserted as to render it entirely incapable of doing harm in some after cross."

But this idea can be better illustrated by the use of fractions, and I may add not only compound fractions, but the idea very soon runs into complex fractions, for example we will represent the bull by $\frac{3}{4}$, plus $\frac{1}{8}$, plus $\frac{1}{16}$, plus $\frac{1}{16}$ equal $\frac{1}{2}$, while the cow, more scattering bred, can be represented by $\frac{1}{3}$, plus $\frac{1}{3}$, plus $\frac{1}{12}$, plus $\frac{1}{12}$, plus $\frac{1}{12}$, plus $\frac{1}{12}$, equal $\frac{1}{2}$.

Now, it is generally estimated that the dam and sire exert each an equal influence in the formation, type and character of the produce, but in practical results it is found that while the dam and sire together is the source from which the type and formation of the produce is derived, yet it is very seldom that each furnishes exactly half in the produce, but instead, they furnish in proportion to the predominating fractions of blood contained in the two—for example, say in the above—one of the thirds in the blood of the cow is identical with the three fourths in the bull, then in the union these two being identical, assume their proportionately overpowering influence in making up the form, style, &c., of the produce, and if all these minor fractions in both dam and sire are each alien to the other, or comparatively so, they are only the more overwhelmed and controlled by this majority. But suppose that the other third in the blood of the cow is identical with the

eighth in the blood of the bull, then the union of this third and eighth, though still a minority, will be sufficiently potent to exert a perceptible modifying influence.

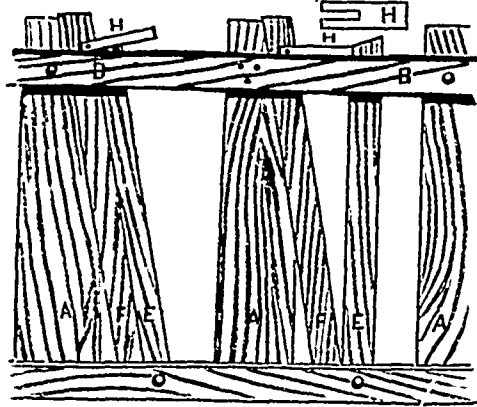
Thus we see at once where rests the real science of Short-horn breeding, and we are forced to realize the fact that this science cannot be learned from books and papers, because it cannot be put into them, and this also explains what Mr. Bates meant when he said in his blunt English way that "Short-horn breeders were born and not made." And again—"you can find 100 men to make Premiers where you find one fit to make a Short-horn breeder." (Statesmen can be made principally by education or book-learning.) We see, too, the great utility of a bull intensely in-bred, of a choice strain, and of high type, and we are now enabled to render an intelligent meaning for prepotency—a word newly coined, and yet undefined in the dictionary, and made expressly to order for Short-horn parlance, as well as to account for the fabulous prices paid for Duke bulls, while other scattering or cross-bred bulls of extra fine form and style, sell at prices comparatively insignificant.

For the good of the cause it is to be regretted that a majority of the few who are qualified by nature and practice to breed them intelligently, are so limited in means or capital as to restrict their operations and frequently compel them to sell such beasts from their herds as are really essential to the highest results.

However, there is one very comforting thought in regard to this whole matter, while there is such rushing headlong and helter-skelter into this Short-horn business—both it as bad as you may, the past has proven that you will make money out of it anyhow; but it will keep the few scientific breeders very busy to raise them as fast as the rest of us can destroy them.

How to Make Stanchions.

A Massachusetts correspondent of the *New York Tribune* says:—"Most of the farmers around here stanchion all of their cattle, especially those who have built new barns. Vicious cattle, I suppose, do not like them so well; but the weaker ones do, as their wicked neighbors are kept where they belong, and have all the liberty that it is safe for them to have. I send a rough plan of mine, with a description. AAA are $\frac{1}{2}$ -inch plank, 11-inch wide and $5\frac{1}{2}$ feet long, and can be of any kind of wood almost. EE and



FF should be made of hard wood, 5 inches wide, $1\frac{1}{2}$ thick, and should be dressed on both sides; they can be got out of $\frac{1}{2}$ -inch plank. It will be seen that there are two stalls, one open and one shut; and the space for the neck should be 8 inches, when shut, as shown in the end stall. Each cow should have three feet and no more. The stick BB, with one on the other side of the planks, AA, should be as long as your stable, if convenient, if not, they can be spliced, and can be of hard or soft wood—rough sawed will do. They should be 6x2 inches. The lower cross pieces can be made of the same material, but should be $2\frac{1}{2}$ x 6 inches. About every other one of the planks, AAA, should be secured by a $5\frac{1}{2}$ inch $\frac{3}{4}$ bolt, with nut on it, while the cross pieces will be held together by a $6\frac{1}{2}$ -inch $\frac{3}{4}$ bolt through the bottom of the bars, EE. The other planks can be held in their places with 20d nails or spikes. The latch, H, can be made of oak or ash, about 14 inches long, $1\frac{1}{2}$ thick, and 4 inches wide, and secured by a $\frac{3}{4}$ bolt to the top of FF, as shown in the drawing. The upper edge of the lower cross piece should be beveled. Two and a half feet is depth enough for manger. Cut the floor planks just 4 feet 8 inches, and have them run under the lower cross piece 2 inches. The "gutter" should be 3 or 4 inches deep; or, if you have a hard, even soil, you need not have any back of this short one, by using plenty of bedding. You can let 3 or 4 of planks AA run below the floor to keep it secure, and the top can be made firm by letting them run up and fasten to upper floor.

FOR SHEEP KILLERS.—In those places where sheep are destroyed by dogs, I would recommend that the services of Constable Strychnine should be secured to protect the flock.—Saratoga.

AN ACCIDENTAL DISCOVERY of great importance, if verified, has been made by a French veterinary surgeon, who, noting that the "foot-and-mouth disease" seemed invariably to spare cattle affected with cow-pox, has vaccinated a number of oxen as a preventive measure, with the result that "not one of the twenty-five beasts successfully inoculated has, up to this date, shown any sign of foot-and-mouth disease, although living among animals largely infected with it."

MANAGEMENT OF COLTS.—Like all other young and growing animals, colts require an abundance of fresh air and exercise, and should have free opportunity of indulging in the gambols, and frolics, and races to which their nature prompts them, and which is so essential in order to properly distend the lungs, swell the veins, invigorate the entire system, and make a hardy, healthy, active horse. Give muscle and bone-forming food in abundance, but feed corn sparingly, and, if at all, only in the coldest weather. Oats and wheat, bran and grass, and hay in abundance, will make the colt grow; and exercise, with protection from severe storms, will keep him healthy.

HOG MANURE.—A Somersetshire farmer speaks highly of hog manure for growing turnips. He says from his knowledge of its excellence he was induced to try it as a manure solely for his turnips, and tested it against guano and bone dust. The result was that it was equal to the guano and beat the bone dust. One part of his farm was a clay and the other a sandy soil. The result of the test was the same on both. He tried the manures on other farms and the result was always the same. To carry out the plan, suitable farm buildings are necessary. He has a large dry shed in which he puts, first of all, a layer of dry coal ashes, about a foot thick and four feet wide, to which the deposits of the hogs are taken, both liquid and solid, and as soon as the liquid begins to ooze out, more ashes are added, and so on, until the pile is about four feet in thickness. He then commences a fresh pile and treats in the same way. After lying some time, the heaps are turned two or three times and thoroughly mixed, and then the manure is fit for drilling. By this means he manures in one year forty-five acres of turnips with the most satisfactory results.

SPAYING SOWS.—The veterinary contributor to the *Chicago Tribune* says:—"It is well enough known, and I will not deny it, that a female animal in which the sexual impulse has been destroyed, will fatten much sooner and more readily than one in which the sexual organs are in their natural condition; but, notwithstanding this, the operation of spaying pigs and calves is of very doubtful value, for the same cannot be performed without opening the abdominal cavity, and an opening of that cavity causes always more or less inflammation in the peritoneum, or serous membrane investing the whole internal surface of the abdomen. This inflammation, in a great many instances, will effect an agglutination of a part of the intestines to the wounded part of the peritoneum. In some cases the inflammation will spread, and will become extensive and severe enough to constitute a dangerous peritonitis. Still, if such cases of severe peritonitis are left entirely out of consideration, those other cases, in which the bowels grow fast to the place of operation in the wall of the abdominal cavity, are frequent and injurious enough to more than counterbalance the advantages that can ever be gained by performing that operation; for such an agglutination of the intestines will seriously interfere with the peristaltic motion of the bowels, and, in consequence, will disturb the digestion and process of nutrition."

SCRUBS VS. GRADES.—A correspondent of the *Utica Herald* has been experimenting as to the relative profitability of scrub and grade cattle. Probably he does not believe in scrubs much after such an experience as he reports. He says:—"Two years ago I purchased 100 calves. They were of all grades, from scrubs to high grades. At the same time I had a few refuse thoroughbred calves that were not such as I desired to keep as breeders, and consequently turned them out and wintered them with the lot I had purchased. They were so kept until a few weeks since, (all together,) when fifty-one choice steers were selected and sold. Two thoroughbred shorthorns were included. The lot averaged 1,370 lbs. The shorthorns were again weighed, to see how they compared. One weighed 1,570 and the other 1,600 pounds, or about 14 per cent. more than the average of the whole lot, including themselves. One of the scrubs was then reweighed, and made 1,150, or about 28 per cent. less than the shorthorns. This lot were all three-year old steers, and had the same fare from calves. The purchaser of these cattle placed the value of the shorthorns at \$1.50 above the value of these common steers, which at least would be 30 per cent. Now, 30 per cent. in value and 28 per cent. in size would make 58 per cent. in favor of the shorthorns. This advantage is due entirely to the superiority of the shorthorns as a breed, their keep being the same from calves. And this is not quite all; for a part of the scrubs are yet unsold, not being fit for market."

The Dairy.

Do Mangolds Taint Butter?

EDITOR CANADA FARMER:—I have been told that mangold wurzel given to a milch cow will strongly flavor the milk, and make it very disagreeable, worse than turnips. Is this true? I have a large patch in my garden on which I have raised enough carrots for this winter's supply, and was thinking of trying mangold wurzel, as it would be easier to cultivate. Shall I be right?

There are some persons who have such delicate gustatory organs that they profess to be able to distinguish butter made from milk given by cows that have been eating mangolds. We have no faith in their assertions, as we have never been able to detect the taint; and we should certainly say that mangolds do not taint butter. We have heard a man who, when he was told that the farmer from whom he was getting his butter, had been feeding turnips to his cows, immediately detected an intolerable turnip flavor in the butter he was eating. His reliability as a judge of butter was terribly injured after by the discovery that the said butter was made a fortnight before the cows had touched a turnip. Imagination has a great deal to do with some people's tastes.

"Deaconing" Calves.

Our position in regard to suckling calves upon young heifers—their first one or two calves say—is that this natural action encourages the mothers in giving milk. The idea may seem novel to some, and then there is a difference in heifers. Some are more "foolish" and sentimental concerning their offspring than others. In breaking a heifer to milk, I am apt to mix in with her calf a good deal, endeavoring to associate myself in the minds of both as a familiar object, so that my little stripping passes as a matter of course among the new and bewildering circumstances. As in times of general excitement, shrewd managers are very likely to be found—stripping the public purse. Barring the opinions that may obtain with the selfish and short-sighted against the policy of developing the lacteal secretions in this natural manner—by allowing a heifer to "fuss around with a young calf"—the plan must look quite reasonable. It is certainly a time-honored practice among careful farmers, and a good deal of observation and some experience will warrant me in asserting that early indulgence in the cares of maternity is no detriment to the future productiveness of the grown-up cow.

Shrewd cow-buyers—milk-men and others, go a-picking among the stock that has been bred and fed in the plainest normal farm fashion, preferring to add the extreme themselves. After three or four years of age, when the milking habit is formed, calves may be "deaconed" with less feeling on the part of the mother. She is used to the hand of man and becomes by habit reconciled to her lot. Your old cow is not a romantic or sentimental animal. I made a visit lately to our eldest cow, Clover, sold last spring. She wouldn't even look at me, or scarcely stop gathering grass long enough to smell of my hand when I lifted her head by the horn. This may not be precisely like refusing to look at her calf, but if you knew the intimacy formerly existing between us, you'd allow it was somewhat like. But this animal never showed much affection for her calves at any time.—*Hartford Courant*.

Cows Coming-in in Autumn.

A correspondent of a Western journal makes the following strong plea for having cows come-in in the autumn:—

The writer of this has frequently presented what seemed to him very decided advantages in the plan of having cows whose milk is to be used for butter making, calve in the fall instead of in the spring. The practice is not recommended for universal adoption, but it is believed that many farmers and dairymen would find increased profits by adopting this plan. Most farmers have their cows calve in the spring, say in April or first of May. Much the larger part of the milk is thus obtained during the summer months, when the price of butter is low, when milking and the care of the milk is troublesome, and when there is a pressure of other work on the farm. When butter begins to rise in price in the fall the yield has so diminished that there is comparatively little to sell. The cows have to be cared for and milked until in mid-winter, and perhaps one or two throughout the winter, although it not uncommonly happens that in the latter part of winter a farmer buys butter for the use of his family, paying as much for one pound as he obtained for two in June.

The plan suggested and successfully practised for some, is to have the cows calve in September, be well cared for

in winter, giving milk until say the latter part of June. In this way the greater part of the milk would be given when butter is at a high price and in good demand, when the extreme heat does not make it difficult to make good butter, when there are no flies to trouble the cows or milkers, allowing the cows to rest during the warmest weather and the most busy part of the year on the farm. The cows must be cared for in any event, and the difference in cost between good care and that which would be given in any event would not be very great. Some milk must be done and some milk cared for during most of the winter, so that it is only a question of a little more work.

A more serious objection might seem to be, the difficulty in raising the calves. But in practice it is found that excellent results can be had rearing these fall dropped calves on skimmed milk, with a little meal, and that they are ready to go on the pasture in the spring in much better shape than the ordinary spring dropped calf is prepared for his first winter of dry food. The difference in the price of butter will more than counter-balance the increased expense in most cases.

PREVENTING THE CHURNING OF MILK IN THE CAN.—Experiments are being tried to prevent "the churning" of milk while being transported to market. The milk can is so constructed as to be hermetically sealed. Then, when ready for shipment, the air is exhausted, and as much milk forced into the can as will bulge it slightly from the force of expansion, thus making it like a solid body, and leaving the particles of milk no chance of "swashing" or undue agitation. Milk that undergoes much agitation during its transit to market is injured in its keeping qualities, while the churning has a tendency to separate a portion, at least, of its buttery particles.

THE DOG IN THE DAIRY.—In all that has been said about the care of cattle, says a sarcastic contemporary, it is surprising that a very important matter has not been noticed. It is the dog. This animal gets the cows up in the morning and hustles them up wherever required, and is an efficient aid in driving them up. There may not be as much profit in a dairy which is partly made up of dog, but there is very great convenience. Cows left out such a night as this are sure to be chilly in the morning, but let the dog go for them early and he will warm them up, thus effecting a great saving in stables as well as in time attending to the cows, to say nothing of the cost of feed, for while the dog is "fetching 'em" of course they will not want to eat; in fact, they will have no desire for feed in some time afterward.

Veterinary.

Cow-Keeping in Anticosti.

EDITOR CANADA FARMER:—Strange as it may appear, yet it is a fact, that although cows are kept in several places on the south side of the Island of Anticosti, yet only in our place, viz. at Ellis Bay, can they be kept for two years in succession. If milch cows are brought down from Quebec in the spring, they do well the first summer, even if they have only the natural grass, along the beach and in the openings of the woods to subsist on. They also do well the first winter, whether they are kept on hay, made from the natural grasses, or on Timothy and Clover Hay, but the next summer they must be dried up and fattened, or they fall off their feed and die of starvation the second winter. Cows so dying have after death been opened, but no appearance of disease could be discovered, all the viscera were apparently sound.

The only exception I ever heard of was in the case of a resident, who having a short supply of hay, fed his cow principally on the bark of the Mountain Ash, which was plentiful in his vicinity. The cow, a small animal of the French Canadian breed, was allowed about half a pail of bark cut up small every day, with what little hay he had, and she survived the second winter. The bark of the Mountain Ash is probably of a tonic nature, and perhaps from these facts, you may be able to suggest some mode of prolonging the lives of the cows on the Island without the use of the Mountain Ash bark, which is not obtainable in sufficient quantity in every part of the Island. A relative of mine who resides on the Island, with others, might like to get it.

SARAWAK.

We are inclined to think that the cows die from lack of heat-forming elements in their food, sufficient to keep up their vitality during the long and severe winter of Anticosti. We should recommend, in addition to the hay given to them, which probably does not superabound in

nutriment, a plentiful supply of some such carbonaceous food as oil-cake, corn or oats. Whiskey or ale might do a great deal toward keeping them up if they got very low.

The Epizootic and Influenza—A Vapor Bath.

EDITOR CANADA FARMER.—The epizootic, although in a milder form than two years ago has, for some time, been prevalent amongst the horses in this part of the country as well as in other places. Dr. Nurse and Dr. Diet have carried our horses through, without the assistance of Dr. Physic: a liberal allowance of boiled barley was given them, a little work in fine days, but at other times they were kept in the stable. If I had had no barley, I should have given them boiled oats, flax-seed and bran.

This disease is probably caused by atmospheric influences, to which cause we may also attribute a mild type of influenza which is now prevailing amongst the bipeds in this part of the country. I have found a slight purgative, followed by a vapor bath just previous to retiring to rest, and care to avoid exposure to the weather for two or three days, sufficient to effect a cure. A vapor bath is easily obtained by placing a pail half full of hot, not boiling water, under a cane bottom chair, let the patient be divested of clothing and sit on the chair with a blanket thrown over the shoulders and reaching to the floor. If a cane bottom chair is not at hand, a short narrow board may be laid across the pail, and the patient should sit on that. From fifteen to thirty minutes at a time is long enough. Should any faintness be felt which is sometimes the case, it is a sign that the water is too hot and the blanket should be thrown open a little to allow the steam to escape. Simple as this remedy may appear, I have by resorting to it often broken up a cold at its first appearance, which might otherwise have proved troublesome.

SARAWAK.

Foot Rot in Sheep.

When foot-rot has for some weeks been neglected and the sheep continue on soft ground, which favors the superabundant growth of degenerate horn, it becomes confirmed and difficult of cure. The secreting textures persist in pouring out lymph and weak faulty horn instead of the tough, firm, protecting covering of the healthy foot. One of the chief difficulties in the way of cure is to restore the secreting parts to their sound state. The first step must however, be, with a strong sharp knife, whilst the hooves are soft, carefully to cut away all loose unsound horn. Where the hoof is extensively affected, this cannot be done all at once; two or three operations will be necessary.

Fungous, bad smelling growths which appear in most troublesome cases are got rid of by any strong astringents. Butter of antimony is often used for such purposes, and in cautious hands answers fairly. Some shepherds use it mixed with about equal parts of impure carbolic acid and diluted with two or three parts of oil. In some districts copper sulphate ointment, made in the proportion of one to four of fatty matter, is in good repute, and is improved by the addition of about one part of the antiseptic deodorising carbolic acid. Such treatment may be varied by dressings of zinc chloride solution, or mercury pernitrate solution.

It will always be found that the successful treatment of foot-rot depends not so much on the particular dressings employed as upon careful paring away of faulty horn, examining and doctoring the foot at intervals of two or three days, avoiding strong caustics, and placing the flock on dry, firm ground. Amongst sheep on arable land foot-rot is usually cured quicker than in those on grass.—*North British Agriculturist*.

KEEPING CABBAGES.—A Dutchess county (N. Y.) market gardener thus describes his method of keeping winter cabbages: "I go through the patch, taking two rows at a time, cutting all the good heads, leaving a few loose-leaves on each, and drop them at my left hand. This makes four rows in one. A man then takes the first-class heads and pitches them to me. I catch them and place them in two rows, two side by side, with two on top and a third one as a cap. I generally place them in heaps of fifty. I serve the second class in the same way. I now take a corn knife and cut off the stumps with the loose leaves remaining, as also the soft cabbages, and feed to the cows. I now cover these heaps of heads with about six inches of soil. The line of the heaps ought to extend north and south. In winter, when I wish to get at them, I break into the south end with pick or hoe, put in my hand and draw them out for about two feet, break down the frost and proceed thus until they are all out."

The Agricultural matter published in the WEEKLY GLOBE is entirely different from that which appears in THE CANADA FARMER.

CANVASSING AGENTS WANTED. First-class men, of good address, steady, and pushing, to canvass for the CANADA FARMER. Address, stating employment, previous engagements, age and references, Publishers of the CANADA FARMER, Toronto.

The Canada Farmer

TORONTO, CANADA, DECEMBER 15, 1875.

THE CANADA FARMER.

This number of the CANADA FARMER completes its twelfth annual volume, and it is proper that we take a glance backward. Our readers will agree with us that the promise made twelve months ago, that this volume should eclipse its predecessors in interest and value has been fulfilled to the letter. A reference to the copious index accompanying this number will show the immense variety of subjects discussed during the year. Our pages have been literally crammed with information at once reliable and permanently valuable. With matters of news, we have carried condensation to its extreme limit. We have endeavored to make a journal that is acceptable to those practising all the various branches that pertain to the agricultural profession—and we believe we have succeeded in the task. In this connection, it is possible that fault might be found with us by those who do not realize the variety and diversity of agricultural interests. A farmer whose entire energies are devoted to grain-growing takes but little more interest in stock than does a person totally unconnected with farming—while the stock-breeder is too apt to think that the purpose of all farming is to furnish food for his cattle. But an agricultural journal, to be successful, must devote itself to all departments of farming. So we venture to remind the arable farmer and the gardener that stock news, of no value to themselves, are esteemed to be of absorbing interest by others. On the other hand, the stock-breeder may be profitably reminded that the pages devoted to vegetable and fruit raising are of more interest to a vast body of our readers than are the births, deaths, and purchases in aristocratic Short-horn circles. Those of our readers who think we have run too much to Cattle, to Vegetables, or to Fruit, should remember that what they condemn others may think commendable, while the last referred to may dislike just what the first mentioned think the best feature of the journal.

The progress of the CANADA FARMER during the expiring year has been most satisfactory in many ways. We have enlisted a vast body of new, and, we believe, permanent readers. And not only in number of readers, but in influence, the CANADA FARMER has increased to a gratifying extent. It is now, on the subjects whereof it treats, one of the most largely quoted of farming journals—and this is a sure indication that its value is recognized by those who are most competent to judge of it.

It is intended that the improvement in the CANADA FARMER shall be carried on in 1876 with the same energy that has marked it this year. It is intended that it shall be kept in the front rank of Agricultural Journals, so that Canadian Agriculture, which is now making such rapid progress, may continue to have a representative worthy of it.

Work for December—January.

Now that we are fairly in the grasp of Old Winter again, there are many things which we can do, but, *per contra*, there are few hands to do what has to be done. It is not probable, therefore, that there will be many days fall to the lot of the farmer, on which he must be lazy for want of something better to do.

The outlook continues to improve as respects prices for the great staple, wheat. The continual reports of worse quality than was estimated, and the long continued wet weather in England, with the consequent disastrous floods must soon have their effect on the market. On this continent, too, the winter wheat is not in nearly so good a condition as it might be. Indications point to a short crop next year, both here and in England, and in France.

There are all the thousand and one little jobs mentioned in last month's CANADA FARMER to be done from time to time. Barn and cellar banking, implement repairing and painting, house and out-door painting, and whitewashing, hole stopping, window mending, harness over-hauling, wood cutting, etc., etc., will keep the time from lagging. There are the stable floors to be made safe, cracks through which snow drifts to be chinked, the sheep rack to be fixed, and gates to be re-hung, to begin with. When they are done—look around and you will find another hundred of things ready.

The principal work will be looking after the stock. The horses are more liable to disease in winter than at other seasons. The close confinement, dry food, and frequently ill-ventilated stables cause constitutional derangement and a train of attendant diseases. The anomalous exhalations from the urine often cause inflammation of the eyes, sometimes extending to blindness. The trouble may be prevented by keeping the stables clean and by sprinkling plaster on the floors to fix the ammonia. Both the horses and the working cattle should be regularly exercised when not at work, and should be turned out on pleasant days.

The sheep which have roots served to them daily will not want water, but it should be accessible to them. They should have roomy, well ventilated sheds, and should be kept clean. They do not relish coarse hay and will not thrive so well on it as on fine hay well cured. They must be fed regularly, as the irregularity will show itself in the wool. If stretched show themselves, give a little sulphur and salt.

Sows want extra feeding in cold weather, and warm shelter—the warmer the shelter the less food will be consumed in keeping up the animal heat, and the more there will be toward laying on fat. Breeding sows will want extra attention, warm quarters, liberal food and bedding.

All kinds of stock suffer in winter from want of water. Clean troughs should be provided near at hand. A plug should be provided so that the water can be withdrawn at night to prevent freezing.

If frost forms in the stables, they are too cold, and additional banking is wanted, or holes need plugging, or roof mending somewhere. Give salt regularly, or have it constantly accessible.

Look after the hired men well, and see that they do not neglect or stint the stock.

Wipe dry the teats of milch cows after milking, or chapped teats will be the result. Fresh lard is the best application if they get so.

If there should come an opportunity, store up some dry soil for use in the stables as an absorbent for the urine, the most valuable part of the manure.

Fruit trees should be protected from everything that will disturb their period of apparent repose. The trunks should be protected from the attacks of vermin by bandaging, mounding or some other of the methods described in previous numbers of this volume. Be careful not to let the stock into the orchard during the winter. Fruit trees will all be benefitted by a liberal mulching. After each fall of snow, tramp it firmly down around the trunks. Cut away all long grass and rubbish that may be near the trees, or mice will find harbor therein. These proceedings will, to some degree, protect from being girdled such trees as are not bandaged or otherwise protected.

Scions, for grafting, may be cut at any time in the winter or early spring, when the wood is not frozen. Cut from vigorous trees of known variety. Many orchardists cut their scions in the early winter before severe frost has occurred. Pack them in moist sand, earth, or sawdust, in

boxes, and put them in the cellar or some other frost-proof but cool place.

Lay out plans so that healthy, vigorous trees of inferior varieties may be grafted in spring and converted into profitable sorts.

Blackberries and raspberries should be well mulched with a covering of straw, or leaves, which will protect the roots during winter and spring, and afford a good manure by its decomposition during summer.

Flowerbeds should be well mulched with straw or leaves. Lay boughs or slats over to keep the mulch from being blown away.

If you are not quite sure that your cellars are frost-proof, a covering of newspapers over the potatoes will keep a severe frost from getting to them.

The opportunity should be taken to haul fire-logs before the snow gets deep. Have a place where the sawing and splitting can be done under cover, and, if practicable, make a covered way from the house to the wood-pile. This will make things pleasant in stormy weather.

Put up a temporary porch or storm door to the front and back doors. Nail weather-straps along doors and windows.

See that the boys and girls, especially the boys, who have to do men's work during the summer, go to school during winter. Encourage them to talk in the evening of their day's task, and help them all you can in the preparation of their next day's work.

If you have kept accounts, you now should read and re-read them and extract from them many lessons they can teach you. If you have not kept them, do not let another year begin before you equip yourself with the means of knowing exactly how much money you are making or losing, and when you are making or losing it. Account books of farm expenses become more valuable with every year of their age, as the transactions recorded become more and more dim in the memory and are forgotten altogether. The failures they will bring to the recollection will be as valuable as the successes. It will be first-class training for a son or a daughter to set him or her to keeping the books—a training which is sure to be valuable, whether their future lot be cast on the farm or elsewhere. Any well regulated youngster will soon take a pride in the work, especially if a judicious word of praise and encouragement be given; and, perhaps, may be inculcated with that pride and interest in farm life, of which, to the sorrow of many an old farmer, some of the rising generation are lamentably destitute. Then, if you find you are losing money by one kind of husbandry, or if you find your crops are getting less and less every year, you may take it that Dame Nature has given you notice to quit that style of work. If you have more land than you can work well and manure well, make arrangements for seeding part of it down, and growing more stock. You may perhaps find that you are giving too little attention to grass-growing. Successive crops of cereals will exhaust the most fertile of lands, and it is best to fill up in time before poverty makes a change of system compulsory. Account books will tell you all these things more eloquently than we can.

Do not put off renewing your subscription to the CANADA FARMER. Do it at once, and then there will be no fear of delay in your getting the next number.

Finally, endeavor so to dispose things that you, and everybody you know, may enjoy what we heartily wish you—A MERRY CHRISTMAS AND A HAPPY NEW YEAR!

THE GREAT ROOT SHOWS of the English seedsmen fill a large space in our last English papers. At the Royal Berkshire, the heaviest specimens of Sutton's mammoth long red mangold, of which there were 1,000 specimens, weighed 50lbs., and 12 specimens of the same variety weighed 440lbs., giving a weight of 75 tons per acre. A new mangold, the Oxheart, is spoken of as a very profitable type. From 120 antagonists in Sutton's champion swedes (18 in each stage—2160 roots), Mr. Allsopp, M. P., stood first with a lot remarkable for shapeliness and solidity. The heaviest weighed 25lbs., and the 18 together 3 cwt. 24 lbs. These figures look very large, but when the long, cool season of growth in England, compared with the season in Canada, is taken into account, we do not know whether the old country is so very much ahead after all. The large roots mentioned in the last CANADA FARMER would show well beside all but the first prize winners.

The Prevalence of Highway Robbery.

EDITOR CANADA FARMER:—Your correspondent "Sarawak" complains of the insecurity of life and property, and the prevalence of crime in this country. Unfortunately, what he complains of is too true, but I hope the time is far distant when pistols and skull-crackers will have to be resorted to by farmers when returning home from market, or vigilance committees organized for the detection of criminals. To deposit the price of a load of grain in the bank when one hundred little debts are due twenty miles from town or city would be impracticable. Then, in my neighborhood, the banks are closed at one o'clock on Saturdays, certainly not for the convenience of either farmer or merchant.

I think that magistrates should put the Vagrant Act in force, but surely the fortune teller's trade cannot be very lucrative in a country so much advanced in education. I would advise the Government to employ a larger staff of sharp, shrewd men, and whenever any high crime or misdemeanor had been committed, send one or more of them to the vicinity of the crime, and let them leave no stone unturned until the perpetrators are brought to justice. If this class of gentry who hold the lives and property of their fellows so cheaply were properly hunted down by those whose duty it is to protect society, we would have fewer of such cases as complained of by "Sarawak."

Southwold, Ontario.

FARMER.

The Social Position of Country People.

[The following essay read by Mrs L. T. White at an entertainment given by Montrose Grange, has been sent to us for publication.]

Can the social position of country people be improved? It can; but only in two ways, viz., by individual improvement and home improvement. These two will bring about all other necessary improvements. But in order to accomplish this, we must first see the necessity for it. If our lives must be given wholly to hard work and nothing else, there will be but little time or inclination for the advancement of intellectual and social life.

But why all this hard work! men do not wear out their lives for nothing, and this work has seemingly become a necessity, from the fact that money is made by it. Individual improvement implies a separate work for each one. The time has been when this could not be done. But in this age of privileges there is no plausible excuse. If we go back about three generations, we will find that farmers had to devote their whole time to gain a living for themselves and families. Comforts and improvements were far in the future of their lives. The next generation started in better circumstances. They settled down with the idea of economizing for a few years, and then they would enjoy themselves. About the time they began to live comfortably, there would be a farm for sale in the neighborhood or somewhere else, and it must be bought; for each of the boys must have a farm. Then comes the tug of war again. Interest to pay, debts to meet, then more land yet. What a pity so many farmers are wrecked just here. Why not have fewer acres and more dollars?

Said a young man, "When I'm twenty-one, I shall go into the city. I have had to plough ever since I was big enough." "Have you failed to become a good ploughman?" I asked. "Oh, no; I should like to see the man that can beat me." "Very well then; you have gained a point some men have striven all their lives for—to excel in their business." "I know it's all very well, he said, but there is no promotion; the old place looks the same ever since I can remember. I want an elegant city home." "Don't go into the city for it; fit up your country home as they do in the city, and it will exceed it for beauty and health. Perhaps you do not appreciate the beauty that is about your home." "Yes I do. Mother and the girls have fitted up the house inside, but it takes money to fit up the grounds." "Take it then, your father is considered a rich man." "He would be if he would sell the lower farm and use the money." Ah! thought I, here is a lesson for many. No wonder young men wish to leave the farm, when they have lived from babyhood to manhood and see no improvements. There are too many lower farms. Men need less land and more capital. Every farm is a scientific world in itself. The soil, trees, shrubs, plants, flowers, fruit, bees, birds, insects, and many other things need to be thoroughly studied. Consequently, men without brains cannot be successful farmers.

It certainly is not very flattering to the present generation, or else our forefathers had a poor opinion of their children. They began with very little education, and very little money, and succeeded. The next with more money and more education. The present stand with a good education, land and money, and are not able to live well yet, and cannot afford convenient and comfortable homes. This eagerness for wealth has been the greatest barrier to social life the world ever knew.

Home improvement suggests a domestic affair. Women lay the foundation, men must help to build, or the struc-

ture will fall in pieces. Two men met at a depot. "Have you heard of this great Temperance Movement?" "Well no, nothing in particular. Are you posted?" "Yes." "It seems the women have started it." Just so, the women are at the bottom of everything. If the women are at the bottom, is it necessary they should remain there? But I hope they will ever be at the bottom of every good and noble work. Now, I hold there is not a nobler or better class of women than those in the country. And no class receives so little encouragement as they. It has been said that when a man builds a house, it will be either an hospital, or a grave, or a home for his family. Many a dull and cheerless home has been the grave of a wife's mind. Knowing, then, that it is necessary to man's existence to have a home, why not make it the brightest and most attractive place on earth?

A certain man wrote an elaborate piece on "Woman," and finished by saying, "she would endure any amount of toil and trouble, with a bit of green comfort now and then." I don't know why he should call it *green comfort*, unless because it is a very pleasant color to the eye. Now there are a great many bits we might have—a pail of water, an armful of wood, or a word of approval, are pleasant bits. You may call them green if you please, or any other color, but let us have plenty of them.

But what has all this to do with the improvement of home, you ask? It is this. Home and women will improve but slowly as long as woman must work hard six days out of seven. And in the same ratio that women improve, will be the advancement of social life to a higher standard.

The kitchen is the wheelhouse, from which proceeds the power that propels the whole domestic machinery. Why can it not be fitted up so that two days' work can be done as easily as one is now. We would then have half the time to devote to arts and sciences, and the heap of mending which is always to be done. One reason our kitchens are not well fitted up, is, the men consider house work so trifling as not to pay the cost. Talk about trifling work. Think of the 1,095 meals to get in the year. And if there are five in a family, which is far below the average, there will be 5,475 persons to consume the victuals each year. And this is only one item of housekeeping.

Another reason, the men are doubtful if we would improve the time. Let me ask, "How do the men occupy their time, since machine took the place of handwork?" Life is not what we intend or hope to do, but what we actually do. It is therefore necessary that we do well. In youth it is natural to look forward to the future. In old age to look back to the past. For this reason we ought to lay a useful and happy foundation. Our childhood may have lacked many things. But if every home in the country were fitted up as it might be, the children that now occupy them would have a rich store of pleasant memories to look back upon. Let not the children be defrauded of their birthright to a happy childhood.

Fit up your homes, farmers. Let us have flowers, arbors, and shady lawns in summer, and cosy rooms in winter, with books, maps, paintings and music, a bright fireside, and brighter faces. Convenient and beautiful homes will bring about a grand result. Do not wait too long for the *golden sometime*. We do not half realize how fast we are growing old, neither do we half realize the importance of living well.

Let us grasp the golden sometime now, so that when old age creeps upon us, and our minds become too enfeebled to participate in passing events, we may sit in our easy-chairs and revel in the treasured memories of the past.

WE WERE NOTICING the other day that things were uncommonly quiet in the agricultural world, scarcely anything new being on foot. We thought it was about time for something new in the "Agricultural Wonder" line to spring up—and it has come. It is a new cereal, and it is found in Oregon. It isn't wheat nor barley, rye nor oats, but the grain resembles wheat and the stalks partake of the character of the other grains. Of course it yields immensely, and, of course, it will grow everywhere. An envious correspondent of the *New York Times* suggests that it is Rocky Mountain Rye resurrected again. That cereal was selling for a dollar a pint a few years ago, but somehow failed to revolutionize agriculture a cent's worth. It was about time it came round again.

ONE OF ENGLAND'S ARISTOCRACY, Lord Darnley, has succeeded in making a consummate donkey of himself. His Lordship, having fallen out with his brother officers in the West Kent Yeomanry, withdrew from the corps, and signified to all of his tenants his wish that they should do the same. All of them retired but one, a Mr. Lake, son of Mr. Lake, Mayor of Gravesend. A sharp correspondence passed between the Earl and the Mayor, which ended in Lake, junior, receiving notice to quit his farm. As the latter had expended considerable money in improvements, which were thus confiscated by the landlord, Mr. Lake sent the correspondence to the papers. The thing looked so bad in print that His Lordship got ashamed of it, and with courage as commendable as it is

uncommon, was man enough to own up. He wrote Mr. Lake a handsome apology, and withdrew the notice to quit. Mr. Lake accepted the apology in the spirit in which it was tendered, but also with commendable pluck, declined to allow the notice to be withdrawn. The moral to be deduced is, that the English landlords have too much power over their tenants and their tenants' money, and also that it will not pay them to exercise that power too harshly, if they do not wish to raise a storm.

EVEN IN ILLINOIS, that land of once supposed inexhaustible fertility, they are beginning to talk about the deterioration of the soil. A Rockford, Ill., correspondent of the *National Live Stock Journal* takes up the paper read by Mr. P. Mahon at a meeting of the Puslinch Farmers' Club, some months ago (CANADA FARMER, current volume, p. 141), and discusses it approvingly throughout. It is clear, from the tenor of the correspondent's letter, that the days when Illinois farmers burnt down their barns to get rid of the accumulation of manure are gone for good—and gone for good in more than one sense. Western farmers will have to "face the music" just as the farmers in the older settled parts of Canada have been compelled to do. And after the novelty of the situation wears off, they will find themselves none the worse off for being obliged to treat their land with more consideration than they have been accustomed to show it.

THE LONDON *Agricultural Gazette* has undertaken a new crusade. It is going "to continue to publish fac-simile engravings from photographs, in the hope that we may ultimately shame out of publication the monsters of ideal perfection, nowhere seen in nature, which still find a place in the pages of our Herd Books." We do not profess to know what English farmers think about the idea, but we opine that if a paper on this continent were to publish such "a monster of ideal" hideousness as the *Gazette's* fac-simile of a first prize Sussex heifer, accompanying its announcement, there would be a disturbance, if not a libel suit. A fac-simile of a photograph is from the unavoidable foreshortening as far from being a fac-simile of the animal intended to be represented as is the loftiest flight of the artist's pencil. The right path is between the extremes. We want of the one to retain the spirit without the idealization, or of the other, the "fac-simile" without the clumsy legs.

Correspondence.

STEAMERS.—R. P., Leaskdale, Scott.—The information has been sent to you by mail.

WILD RICE.—The correspondent at Halifax can obtain wild rice seed by instructing some one to collect it in the fall season on Toronto marsh; it will cost him about \$2 per peck.—W. Bradie, Toronto.

ITALIAN RYE GRASS SEED.—W. L. C., Coldwater.—The seeds you send us stating that you received them from England unnamed, are seeds of Italian Rye Grass, the grass illustrated in this issue.

WORKS ON SHEEP—HUSBANDRY.—T. D., Morrisburgh, Ont., Randall's "Practical Shepherd," \$2.00; "Youatt on Sheep," \$1.00; are among the best works on the keeping of sheep. They can be got from Hart & Rawlinson, or Willing & Williamson, Toronto.

CHEVALIER BARLEY—CANARY SEED.—A. C. G., Bondhead P.O.—Chevalier barley that will grade No. 1 can be grown in your district. The Chevalier will grow five to ten more bushels per acre than the four or six-rowed; but at present does not command so high a price, simply because there is not enough of it grown so that brewers can reckon on enough for entire maltings. It does not answer to mix the varieties, as the Chevalier is longer in sprouting. In growing it stools out, many heads coming from a single gram. It gives a greater bulk per acre both of grain and straw. The chaff, steamed, makes most excellent feed for milch cows.—The canary seed that is sold in Canada is imported from Europe. It is grown largely, also, in California. We presume it could be grown in Canada, but not profitably, as it is now retailed here, at from eight to ten cents per pound.

Agricultural Intelligence.

The Short-Horn Convention at Toronto.

The Fourth Annual Convention of the American Association of Breeders of Short-horns was held at Toronto on December 1 and 2.

President Pickercell's annual address was an interesting paper. He alluded to the surpassing this year of all previous averages, and expressed his opinion that the future was bright.

The financial reports were mainly satisfactory. A committee was appointed to draft amendments to the constitution. Judge Jones of Ohio introduced a resolution proposing that animals whose pedigrees show descent from imported ancestry, or as many as seven crosses of approved or recorded blood, are entitled to registry in the Herd-books.

Dr. Stevens read an elaborate essay on "Breeding Short-horns."

A committee's report recommending that the levy be \$2 was adopted.

Mr. S. Wilnot of Newcastle was elected an honorary member.

A question from Iowa regarding the pedigree of Lucius, 5916, was ordered to lie on the table.

The following gentlemen were chosen Directors of the Association:—Mr. Avery, of Detroit; Mr. T. L. McKeen, of Eastern Penn.; Benj. Sumner, of Woodstock; J. D. Sears, of Texas; Phineas Steadman, of Chicopee, Mass.

Judge Jones read a paper on "Short-horn breeding conducted as a science with a view to maintaining the highest excellence in useful qualities."

A discussion on in-and-in breeding ensued. Gen Curtis of New York asked breeders to give their opinions. Mr. Groom of Kentucky supported the system, citing the Dukes as examples. Mr. Sodowski of Illinois had a heifer not bred in that had won 36 prizes out of 38 times she was shown.

Resolutions were passed regretting the loss to the Association by the death of Col. Meredith of Indiana.

An order was made that a hitherto unpublished paper by Mr. Matthews of Virginia should be added to the proceedings of the convention.

Dr. A. Smith of Toronto read an exhaustive paper on various cattle diseases and their treatment, and received the thanks of the Association.

The committee on the Foot-and-Mouth Disease recommended the appointment of a permanent committee consisting of one from each State and Province, by whom any outbreak of the disease in their district should be reported to Government. Report concurred in.

Mr. Matthews moved that he who owned the cow when it was bred should be declared the breeder of the calf. Judge Jones objected and moved reference to a committee. Mr. Matthews objected to the delay. Mr. Page of New York supported the resolution. Hon. D. Christie said the rule had hitherto been to regard the owner of the animal at the time of copulation as the breeder.

to refer. Mr. Harison moved to rescind the Indianapolis resolution. Hon. D. Christie seconded the motion. Mr. Bailey moved that when a cow was purchased in calf, the calf should be entitled to registry as bred by the owner of the cow at the time of coupling.

Formal resolutions of thanks to various parties closed the proceedings.

Great Stock Sales in Toronto.

Following the convention came, on Dec. 4, the joint sale of the Short-horns of Col. Taylor and Messrs. Craig and Sumner. Favored by splendid weather and a first-class assemblage, the sale went off remarkably well.

Mr. Craig's Herd.

Table listing various cattle breeds and their prices, including Kirklevington Duchess 18th, Hon. M. H. Cochrane, Comp-ton, Q, and others.

SELLS.

Table listing cattle sales including 17th Duke of Andrie, A. McClintock, Millersburg, Ky, and others.

Summary

Summary table for cattle sales showing 20 females, average \$1,166 03, Total \$15,155, and 1 bull, \$2,500 00, Total \$17,655.

Col. Taylor's Herd

Table listing cattle sales from Col. Taylor's Herd, including Per Oxford, T. L. McKeen, Bonnie Red Rose 2nd, E. L. Harrison, Morley, N. Y., and others.

Summary

Summary table for Col. Taylor's Herd showing 8 females, average \$804 37, Total \$6,435, and 1 bull, \$2,500 00, Total \$8,935.

Benjamin Sumner's Herd

Table listing cattle sales from Benjamin Sumner's Herd, including Grace Sharon, A. McClintock, Alice Maid 3rd, Hon. G. Brown, and others.

SELLS.

Table listing cattle sales including Baron Hubback 2nd, N. W. Terrill, and others.

Summary

Summary table for Benjamin Sumner's Herd showing 15 females, average \$1,105 00, Total \$16,620, and 1 bull, \$2,500 00, Total \$19,120.

General Summary.

General Summary table showing Craig \$52,825, Taylor \$6,435, and Sumner \$19,120, Total \$78,380.

Previous to the short-horn sale, some fine draught and other stallions were put up by auction by several owners. The prices realized were not large. Those sold brought the following figures:—

Table listing stallion sales including Prince of the West, Clydesdale, Long & Smith, Lansing & Newton, and North Lincoln, Lincoln, David Messenger, Guelph.

Table listing various stallions and their prices, including Forfar Chief, Clydesdale, John Keith, Toronto, and others.

On the next day, Dec. 4, a joint sale of stock was held, of which the following was the result. The animals comprised the Stanton importation of 1874, and selections from the herds of Messrs. J. Corkery, F. J. D. Smith, of Newtonbrook, and others:—

Short-Horns.

Table listing short-horn sales including 2nd Duchess, T. L. McKeen, Easton, Pa., Medora, F. J. Barbee, Paris, Ky., and others.

Sheep.

Table listing sheep sales including Pair Cotswold Ewes, J. Hope, do. do. H. Lemon, and others.

Thomas Smith, Chicago, same day.

SUMMARY.

Summary table for Thomas Smith sales showing 4 females, average \$210 00, Total \$840, and 4 bulls, \$111 25, Total \$445.

F. J. Barbee, Chicago, same day.

Table listing sheep sales from F. J. Barbee, including Kitty Clover 4th of Glen Echo, R. H. Campbell, Ill., and others.

SUMMARY.

Summary table for F. J. Barbee sales showing 33 females, average \$223 81, Total \$7,385, and 2 bulls, \$60 00, Total \$1,180.

Other Sales during the Month.

In addition to the foregoing sales, there occurred in the United States during the month, the following sales, only the list of such animals as realized above \$500 being given:—

Table listing various cattle sales including Lady Newham 5th, G. Sprague, Des Moines, Iowa, and others.

Summary

Summary table for other sales showing 96 females, average \$256 77, Total \$24,650, and 16 bulls, \$139 69, Total \$2,305.

A. B. Conger Chicago, Nov. 10th.

Table listing various cattle sales including Rhodometia, J. R. Stuyvesant, Poughkeepsie, N. Y., and others.

Summary.

Summary table for A. B. Conger sales showing 25 females, average \$622 20, Total \$17,305, and 12 bulls, \$100 53, Total \$1,390.

Seeds, &c.

Liability of Seedsmen.

The remarkable decision rendered just now by the Court of Common Pleas in New York may produce further reaching results than appear to the superficial observer.

This is certainly a most extraordinary physiological discovery. Scientific problems which have baffled the most persevering investigations of naturalists for centuries were here settled in the court room in five minutes by the ballot of a promiscuous jury.

COMPTON'S SURPRISE is, the London Gardener's Chronicle thinks, one of the three best late-keeping potatoes in cultivation, though ungainly in shape and of rough exterior.

ANDRE OATS.—We have received a few grains of a new kind of oats called Andre oats, claimed to have been originated in New York State.

EGYPTIAN WHEAT.—As our readers are aware, our opinion of the Egyptian wheat, except as a curiosity, is not very high. We are not alone in esteeming that grain to be "small punkins" as a paying crop.

ears instead of one. But this variety is an old concern, and well known years ago. It is not generally grown because it is inferior in productiveness to the ordinary kind, and so, not being so well known, is just the thing to impose on those who know no better.

VERMONT COMPTON'S SURPRISE, etc.—Says a Country Gentleman correspondent:—Of the early kinds, the Vermont suits me first-rate, being about one week earlier than Early Rose, and being so much like it that seeing a barrel of each, one cannot tell which is which.

Miscellaneous.

Hasty Consumption Cured by Fellows' Hypophosphites.

CARBONAR, NEWFOUNDLAND, Jan. 3, 1871.

MR. JAMES I. FELLOWS,

DEAR SIR,—I came to this country in May, 1869. I found a countryman of mine laboring under some affection of the lungs. I recommended your Syrup, tried at the druggists in Harbor Grace, but they thought I was inventing the name at their expense.

He happened to be in W. H. Thompson's the day your first shipment arrived, and took at once four bottles to the Labrador, which he was very anxious to do, but had no occasion to use them himself.

I also recommended it to another consumptive, but have not heard from him since, as he lives in a distant part of the Island. Hoping this will give you some encouragement.

EPPS'S COCOA.—GRATEFUL AND COMFORTING.—"By a thorough knowledge of the natural laws which govern the operations of digestion and nutrition, and by a careful application of the fine properties of well-selected cocoa, Mr. Epps has provided our breakfast tables with a delicately flavored beverage which may save us many heavy doctor's bills.

MANUFACTURE OF COCOA. We will now give an account of the process adopted by Messrs. James Epps & Co., Homoeopathic Chemists, and manufacturers of dietetic articles, at their works in the Euston Road, London.

THE OHIO AGRICULTURAL REPORT for 1874, 29th volume, has been received from Mr. Clippart, the Secretary of the State Board. The contents are of a very valuable character.

THE Southern Farmer, of Memphis, Tenn., has converted itself into a weekly. The first of the new system is an attractive, newsy sheet—just the thing that Southern Agriculture is in need of.

THE "AMATEUR TRAPPER" and Delisser's "Horseman's Guide" are two small works published by Dick & Fitzgerald, of New York. They contain a good deal of information in a small compass.

"HOUSEHOLD ELEGANCIES," is a beautifully got up work published by Henry T. Williams, of New York. It contains many illustrations of things desirable in houses of taste, and is literally overflowing with hints to ladies how to beautify their homes.

THE ILLUSTRATED REGISTER OF RURAL AFFAIRS FOR 1876, published by Luther Tucker & Son, Albany is, like each of its predecessors, a model of condensation and practicality.

THERE ARE OVER TWO HUNDRED distinct species of grass, growing in the meadows and pastures of Great Britain, full half of which are claimed by botanists as indigenous in that island.

CONTENTS OF THIS NUMBER.

Table listing various articles and their page numbers, including sections like THE FIELD, GRASSES AND FORAGE PLANTS, IMPLEMENTS, HORTICULTURE, THE POULTRY YARD, THE BREEDER AND GRAZIER, THE DAIRY, VETERINARY, EDITORIAL, CORRESPONDENCE, AGRICULTURAL INTELLIGENCE, and SEEDS, ETC.