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RURAL NOTES.

MR. R. C. BALDWIN, of Dixville, cut a head of timothy hay that measured eight inches and a quarter in length.

HORSE buyers are busy in the vicinity of Gananoque picking up every animal that can be got. Prices for good working horses range from \$100 to \$175.

MR. JAMES MAIN, of Milton, has been to the old country for choice stock, and has brought home with him a lot of prize-winning Cotswold sheep and Berkshire-pigs.

THE *Boston Transcript*, chronicling the arrival of 8,000 watermelons by the Norfolk boat, says: "We expect to hear of the doubling up of our population in consequence."

A BEEKEEPERS' ASSOCIATION has been formed in the county of Norfolk. It now numbers forty-six members, with good prospects of increase. Every county in Ontario should follow suit.

THE cheese market is on the rise. Shrewd factory men will sell their stocks. In the long run, it is wise policy to accept good prices for all farm produce, instead of waiting for better.

HOPS are hopping up. There is every sign that they will be scarce and dear. Judging by the past, big plantations will be made next season, with the usual result of over-abundance and low prices.

PROF. MANLEY MILES, who has been experimenting at Houghton Farm, Orange County, New York, for three years past, gives the preference to barn-yard manure over any and all artificial fertilizers.

SEVERAL prominent horticulturists have, at various times, been credited with saying, "If I had a call to preach on gardening, I would take as my text, 'Stir the soil.'" At present, the late A. J. Downing has the pulpit.

MR. ACORN BURROWS, Deputy Minister of Agriculture, Winnipeg, has issued a circular stating that he is arranging to send a collection of Manitoba products to the Provincial Fair at Kingston. This exhibit will excite much interest.

JOHN SNELL'S SONS, Edmonton, Can., made shipments from Liverpool, July 27th, of a new importation of Cotswolds and Berkshires, which includes the first-prize pen of ewes, and the first-prize boar and sow at the Royal Show lately held at Reading.

MR. JOHN O. ROSS, Jarvis, Canada, has just arrived from England with a large importation of Cotswold, Oxford Down, Shropshire Down and Southdown sheep, including the first-prize pen at the Royal Show in England, and the first-prize pen at Oxford.

THE *Hamilton Times* states that Mr. Bamberger, of Bamberger's Half-way House, on the H. and D. S. R., sent in to Mr. A. A. Anderson, Superintendent of the H. and D. Railway, a sample of wheat stalks measuring seven feet six inches in height. This is the largest yet.

MR. PLUMB'S prizes for the best farms in the township of Niagara were awarded as follows:—First prize, a gold medal, Henry Woodruff; second prize, a silver medal, James Hutchinson; third prize, offered by the Agricultural Society Division, a silver pitcher, was won by James Osmond.

THE *Port Hope Times* says:—"Mr. E. B. Morgan shipped on the steamship *Cornwall* to Bristol, England, last week, one thousand and one sheep, and this week he ships twelve hundred on the steamship *Dominion* for Liverpool. He reports sheep this year improving in both quality and breed much better than in former years.

THE Grand Trunk crop reports gathered by the station-masters along that line, and comprising about 120 localities in Ontario and Quebec, harmonized, so far as Ontario is concerned, with the report of the Bureau of Industries, and the state of things in Quebec seems not far at variance with the sister province. Fall wheat is a fine yield all over; spring wheat above the average; hay a fair average; barley rather over than under the average; peas and oats heavy crops; and roots promising well. Allowance must, however, be made for destructive storms and unfavourable weather generally, which have prevailed to a greater or less extent since these reports were collected.

A MONTANA paper contains the following paragraph:—"The Cochrane Cattle Company have purchased 8,000 head of cattle from Poindexter & Orr, of Beaverhead county, paying at the rate of \$25 per head for the entire herd. The range of the Cochrane Cattle Company is at Bow River, 100 miles north of Fort Macleod. The cattle will be driven to the range during the months of July and August. Thirty men and 100 horses will be required for the drive. During the past year the above company have purchased over 15,000 head of cattle in Montana, and their purchases alone have had a great tendency to raise the price of cattle in the Territory. It made a market upon

the range where the cattle were grazing, and on fire bands were purchased there.

WHILE there is little short of an æsthetic craze in the United States about the colours of Jersey cattle, and our own Jersey breeder, V. E. Fuller, of Hamilton, seems to be affected by it, judging from the way he writes about "colour, solid dark fawn, shading with black; tail black points, etc. it is worthy of being noted that the first prize Jersey bull at the Royal Agricultural Show held at Reading, England, last month, was wholly destitute of the hues that are so fashionable on this side of the Atlantic. He is thus described: "Brown; black on the sides of the neck and body and thighs; chine, back, and rump nearly white, rapidly shading as it meets and blends with the dark colour lower down. The twist is also nearly white." What Jersey breeder of any note on this continent would take such a bull as a gift to preside over his herd for a single season?

THE Ontario Fruit Growers' Association, at its recent summer meeting, discussed pretty fully the best modes of packing fruit for market. Selecting or assorting according to size was regarded as quite important. Obtaining a reputation in the same market had proved valuable to those who always sold good fruit. Mr. Arnold said a barrel of fine apples was sent to Scotland to a special market, every specimen being wrapped in a separate piece of paper. The fruit arrived in fine condition, and as the result of that shipment he can now sell hundreds of barrels. Others stated that much fruit had been injured on the way to market by not sufficiently settling the specimens compactly together, as well as from want of pressing. It was also stated that some were packed too soon after gathering, and before they had shrunk slightly and become elastic by drying.

THE English papers all speak highly of the display of Cotswold sheep at the recent Royal Show at Reading, and we clip the following paragraph from the *North British Agriculturist*: Cotswolds made a specially formidable array in the shearling class. While not losing size and scale, the turn-out of this long-woolled breed last week showed an improvement in quality. Recent decisions were here, as in some other classes in the yard, considerably upset. Mr. Jacob's first prize shearling, a big, lengthy, well-covered sheep, bred by exhibitor, was only second at Cardiff; while the Messrs. Gillet's second ram led at Cardiff, and was champion animal at the Oxford Show. He is bigger, and to some people's mind better all round than the winner of last week. Mr. Swanwick's first two-shear sheep is an animal of immense frame and flesh, with fine form. Mr. Jacobs' winning gimmers were well grown, and displayed excellent coats.

FARM AND FIELD.

FARMERS' SONS.

One of the very first things we farmers (indeed all fathers) should teach our sons is the *real value of money*. The inordinate love of money—greed for gain—may be the “root of all evil.” I do not propose to question Scripture on this point. But money itself is good and necessary, and I am sure that one of the most essential things for a boy is a knowledge of the uses and real value of money as representing wealth. I think we should teach our sons how to earn money fairly and skilfully, and how to spend it wisely or lay it up, or invest it wisely by present self-denial, that it may increase and become capital for future operations. Self-denial, I say; for capital always represents *somebody's* labour and self-denial. Our boys should have some chance to earn money fairly, at the fair price for the labour or skill involved; the same price a man would receive for the same toil of muscle, guided by the same skill of brain, or eye, or hand. In this way they learn to measure the money, and know what it costs; and when they have thus earned it they should be left free to use their judgment in its expenditure. It will develop and strengthen their judgment. We may and should advise, but not control. The money should be absolutely theirs even to spend foolishly—at least for a few times. A dollar thus spent in childhood and bitterly regretted may save our children the foolish waste of hundreds when they are grown. If they are kept in intellectual baby chairs and leading-strings in youth, how shall they walk when they are men? If they are never allowed freedom of choice in childhood, how shall they choose wisely in manhood? If they never exercise independent judgment in youth, how shall they judge wisely when they are grown? My mother used often to tell of a rich farmer's son she knew in Massachusetts in her youth, who lacked this kind of training. He needn't work—oh no! his father was rich. He could have spending money, and the only limit he could see was “the old man's” stinginess. He knew absolutely nothing of the cost and value of money, and of wise judgment in spending it. At about twenty-one he succeeded to his father's entire property by his father's sudden death. At a picnic he thought to impress his young friends with his wealth and independence by spreading a hundred-dollar bill on a piece of bread and butter, and eating it as a sandwich with great apparent relish! And she said he lived to see the day when he was glad to get the bread and butter, without the hundred-dollar bill for a relish. He died poor, because he had not been taught the value and proper use of money.

Now, I think we farmers should be more careful to give our children a share in the plans, responsibilities, pleasures and profits of the farm, and not simply or chiefly in its uninteresting drudgery. It was doubtless foreordained of heaven that boys should “turn grindstones for all the axes and scythes and mowing-machine knives.” But an exclusive grindstone diet (or medicine) has disgusted more than one wide-awake, active farmer's boy with the whole business of farming. It isn't the muscular effort. Boys like that if there is any fun or sense in it. It is the monotony and lack of call for intelligence, the ceaseless round and round of the same thing. “Oh, dear! ar'n't you almost done?” Suppose that instead of grindstones and the like all the time, we give our boys a chance to work and talk with us at interesting work; and let them help us rear the blooded calves and colts, and have one as their “really, truly own,” when it grows up. I think the meanest thing a man can do is to give his son a colt, and let him call it his own till it is about three

years old, and then when he gets hard up or in debt, sell the *boy's colt to pay the man's debt!* The boy's share in the partnership is the loss and bitter disappointment when the colt is sold.

Some farmers seem to regard their boys as they do their colts and steers—as containing, or capable of, just so much labour, and they work them while younger and less developed than they do their colts. They “use them where they will do the most good” till they are twenty-one, and then turn them loose in the world with a suit of clothes and fifty dollars. I don't blame the sons of such fathers for wanting to get into other business. I believe in giving the boys and the girls, too, some independent chance to earn money; the eggs and chickens, or the bees, or the garden, with fair pay for what they raise or make. If we even buy *vegetables of them*, and let them buy their “Sunday clothes,” and get their spending money thus, it will give an interest in work, develop their judgment, and make men of them. Instead of keeping them at dull work, simply driving cows, carrying water, running errands and the like for no pay, and then giving them an occasional dime, or nickel, or quarter of *our money*, isn't it better to establish with them early a prospective or actual partnership; to explain to them the wonders and mysteries of breeding, budding, grafting, pruning, cultivating, selecting seed; to help us plant the orchards or vineyards while we teach them to think: “These little trees that I can lift with my little hand, shall grow as I grow, and one day wave their branches over my head, and yield their golden fruitage to fill my cellar and my purse, when this farm, enriched and beautified by my own labours and my father's, shall be my own farm, and my father (far distant be the day!) shall have been gathered in peace to his fathers?”

Farmers' sons thus trained will not rush off to the cities, nor be anxious for “the old man” to die and leave the farm for them.—*W. J. Chamberlain, in Rural New Yorker.*

THE HULL AND MAN.

Give fools their gold and knaves their power,
Let fortune's bubbles rise and fall;
Who sows a field or trains a flower
Or plants a tree is more than all.

For he who blesses most is blest;
And God and man shall own his worth,
Who toils to leave as his bequest
An added beauty to the earth.

And soon or late, to all that sow
The time of harvest shall be given;
The flower shall bloom, the fruit shall grow,
If not on earth, at last in heaven.

—*J. G. Whittier.*

CLOVER AS A FERTILIZER.

All plants draw much of their food from the atmosphere, and of those used in agriculture none are exceeded by clover in the large proportion of nutriment thus derived. In this respect other leguminous crops are much like red clover. Here we include all the clovers—vetches, beans, peas, sainfoin, lupins, and lucerne.

To keep up the fertility of our soil, we must restore to it phosphoric acid, potash, nitrogen, and other substances which are found in farm crops. Of the three very important and valuable substances just named, nitrogen is the most precious and costly to obtain. In various places there are abundant supplies of potash and phosphoric acid.

As may be said, these are “in sight.” Agricultural chemists are now studying on the problem of the future supply of nitrogen for agricultural purposes. So far, clover seems to be the important factor in this problem.

Whole crops of clover are often ploughed under, to restore or keep up the fertility of the soil; but I am safe in saying it has been proven a better

practice to cut off the clover, feed it, and use the manure, than to plough under the whole crop. In other words—for various reasons, all of which may not seem plain—it has been shown that ploughing under a clover-stubble is followed by about as good results (often better) as though the whole crop was turned under. Again, Vöelker shows that “land on which clover has been grown for seed in the preceding year yields a better crop of wheat than it does when the clover is mown twice for hay, or even once only, and afterward fed off by sheep.”

Says Dr. Vöelker, in the *Journal* of the Royal Agricultural Society of England:

“1. A good crop of clover removes from the soil more potash, phosphoric acid, lime, and other mineral matters which enter into the composition of the ashes of our cultivated crops, than any other crop usually grown in this country.

“2. There is fully three times as much nitrogen in a crop of clover as in the average produce of the grain and straw of wheat per acre.

“3. Clover is an excellent preparatory crop for wheat.

“4. During the growth of clover a large amount of nitrogenous matter accumulates in the soil.

“5. This accumulation, which is greatest in the surface soil, is due to decaying leaves, dropped during the growth of clover, and to an abundance of roots, containing, when dry, from one and a half to two per cent. of nitrogen.

“6. The clover roots are stronger and more numerous, and more leaves fall on the ground when clover is grown for seed than when it is mown for hay. In consequence, more nitrogen is left after clover-seed than after hay.

“7. This crop causes a large accumulation of nitrogenous matters, which are gradually changed in the soil to nitrates.

“8. Clover not only provides an abundance of nitrogenous food, but delivers this food in a readily available form (as nitrates) more gradually and continuously, and with more certainty of a good result, than such food be applied to the land in the shape of nitrogenous spring top-dressings.—*Prof. W. J. Beal.*

SEA-WEED FOR POTATOES.

Large quantities of this are gathered on the Atlantic coast, and especially in Maine, and used for manuring potatoes. It produces heavy crops; its most fertilizing element being potash, which is essential to a bountiful production of this most necessary and valuable of all our root crops. But there is one objection to using fresh sea-weed too abundantly, for it gives what is called a *tang* to the potato which is so strong and disagreeable at times as to make it unpalatable for the table.

To obviate this, it would be better to make a compost of the sea-weed with muck, one-fourth of the latter to three-fourths of the former, the two making a layer of seven to nine inches thick or so, and a good sprinkling of slacked lime over each layer, at the rate of a half to one bushel per waggon load of the compost, as lime may happen to be cheaper or dearer in the locality where used. If muck is not to be had, sod is the next best thing to compost with the sea-weed. If neither be available, then use lime alone.

The compost ought to lie from four to six months, so as to be well rotted before being used. If sea-weed alone, it should be limed as above, and then it had better lie six months. Such a compost may be freely used for a crop of potatoes without any danger of their becoming *tangy*. Lime is a great sweetener and purifier of all vegetables; if a pint or so of slacked is put on to

the seed of each hill when planted, not scarcely ever makes its appearance in the crop, this preserving it well even after being stored.

THE LARCH.

One of the most durable kinds of wood is that of the larch tree. The tree grows, in abundance and to perfection, on the sandy coasts of the Baltic. There the Romans became acquainted with it during their Germanic wars, and so highly did they value it, that they transported it, at immense expense, across the Alps, down to the River Po, and thence to Rome. Vitruvius praises it much as a building timber, and Plinius declares it to be the best of all resinous kinds of wood. The great floating palace which the Emperor Trajan built for a summer residence on Lake Nervo was made partly of cypress and partly of larch, and when, after the lapse of fourteen centuries, the palace was discovered on the bottom of the sea, and raised from the mud in which it lay imbedded, all those parts of it which were of larch were found to be perfectly sound. In the English marine the larch was introduced in 1800, from the Scotch forests of the Duke of Athol, and the frigate *Athol*, built in 1890, is still in active service and in excellent condition.

FARMERS SHOULD KEEP ACCOUNTS.

The close of the year is the time to post books and square accounts. Every shrewd business man is careful to do this in order to ascertain the state of his affairs, and whether profit or loss has resulted from the year's transactions. And what the merchant, manufacturer or other business man does in this regard should be done by the agriculturist. As a rule, the farmer who keeps an account of all his transactions is successful in his operations. He not only knows the exact state of his financial affairs, but is fully advised as to the condition and value of his crops, live stock, and farm implements and machinery. By carefully noting down the cost of each crop and the receipts therefrom, he is enabled to decide as to the profit or loss, and to ascertain where he has made mistakes in judgment or management.

ACTION OF LIME ON THE SOIL.

Lime, as it comes from the kiln, is known as caustic or quicklime, the heat having expelled the carbonic acid gas of the carbonate of lime or limestone. Upon exposure to the air and moisture this caustic lime absorbs water and carbonic acid gas, and again returns to the carbonate. During this reversion it decomposes vegetable matter, and sets the elements of plant food free. It is in this power to prepare food for the growing crop from the vegetable matter in the soil that the chief value of lime resides. The greater the percentage of lime that is in the caustic state, the more valuable it is for this work. The quicker the lime can be applied after burning, the better.—*American Agriculturist.*

IMPROVING LAND.

I have a farm which by hard work I have brought to such a state of cultivation that I have been offered \$400 an acre for it. But I have done this by underdraining, subsoil ploughing, and raising clover and ploughing it in. The best of these is the deep tillage, which breaks the soil into small particles and gives the air thorough access to it.—*Cor.*

SALT AS A MANURE.

The Massachusetts Agricultural Society concludes that salt, as a manure, has the property of hastening the maturing of all grain crops; that

wheat on salted land will ripen six to ten days earlier than on unsalted land, all other conditions being equal; that it increases the yield from twenty-five to fifty per cent.; that it stiffens the straw and prevents rust and smut; that it checks, if it does not entirely prevent, the ravages of the chinch bug. The quantity used may be from 150 to 300 pounds per acre, but the greater quantity is the better.—*Western Farmer.*

THE FARMER'S WIFE.

Up with the birds in the early morning—
The dewdrop glows like a precious gem;
Beautiful tints in the skies are dawning,
But she has not a moment to look at them.
The men are wanting their breakfast early;
She must not linger, she must not wait;
For words that are sharp and looks that are surly
Are what men give when meals are late.

Oh, glorious colour the clouds are turning,
If she could but look over hills and trees!
But here are the dishes, and here is the churning—
Those things must always yield to these.
The world is filled with the wine of beauty,
If she could but pause and drink it in;
But pleasure, she says, must wait for duty—
Neglected work is committed sin.

The day grows hot and her hand grows weary;
Oh, for an hour to cool her head,
Out with the birds in the wind so cheery!
But she must get dinner and bake the bread.
The busy men in the hay-field working,
If they saw her sitting with idle hand,
Would think her lazy and call it shirking,
And she never could make them understand.

They do not know that the heart within her
Hungers for beauty and things sublime;
They only know that they want their dinner,
Plenty of it, and just "on time."
And after the sweeping and churning and baking,
And dinner dishes are all put by,
She sits and sews, though her head is aching,
Till time for supper and "chores" draws nigh.

Her boys at school must look like others,
She says, as she patches their frocks and hose:
For the world is quick to censure mothers
For the least neglect of children's clothes.
Her husband comes from the field of labour;
He gives no praise to his weary wife;
She's done no more than has her neighbour;
'Tis the lot of all in country life.

But after the strife and weary tussle
With life is done, and she lies at rest,
The nation's brain and heart and muscle—
Her sons and daughters—shall call her blest.
And I think the sweetest joys of heaven,
And the rarest bliss of eternal life,
And the fairest crown of all will be given
Unto the wayworn farmer's wife.

MANURE.

Remember that the manure should be forked over occasionally to make it fine. If it is heating, then muck or loam should be mixed with it to absorb the ammonia which is formed during the process of decomposition. Sprinkling the manure pile with ground plaster is advisable. The plaster will absorb any ammonia that escapes from the pile, and save it for the use of growing plants. Ammonia is too valuable an element of plant food to allow it to be wasted. Again, upon some lands plaster is an excellent fertilizer.

Do not forget that leached wood ashes makes one of the most valuable special manures. The house that has a great pile of ashes about it has an owner that does not know his business.

"My idea of good farming," says a writer in the *American Rural Home*, "is deep ploughing, thorough cultivation, a judicious rotation of crops, plenty of clover and sowed corn, with stock enough to eat all the fodder and coarse grain raised on the farm. Manure made of straw alone is not very valuable, but with the addition of corn meal, bran and oats, it will make the crops grow. I do not design to sell any grain from my farm but wheat and beans, until it is fed to stock and made into meat. I prefer to buy bran by the ton, thus enriching the manure pile and giving increased fertility to our fields."

CREAM.

A DOLLAR spent in the tavern, if put into seed, would yield a better dividend.

ALMOST anybody can run into debt, but nearly everybody has to crawl out of it.

LAZINESS is the landlord here; he leads his servants around with nose-rings.

To repent without mending one's ways is to pump out the ship without stopping the leak.

RIFLES and breech-loading guns are not of as much service in raising wheat as a plough.

THE first element to success in farming is to lay in a stock of elbow grease. It tells well at harvest time.

DOLLAR bills do not grow on bushes, and it is a precarious existence looking for them on the streets of a city.

THE fewer friends one has the better. In good times they make use of you; in bad, you can't make use of them.

FIFTY years is a long wait for the golden wedding, but it is an 18-carat argument in favour of early marriages.

WHEN inclined to grumble, turn a spadeful of earth instead, and you will soon have to hire help to carry your bank book.

SOME men start west with two shooting irons and one plough. Reverse the proportion, and the result will be satisfactory.

YOU cannot cultivate a prairie farm by starting a costermonger's stand in Winnipeg. It has been tried, and the result is a failure.

WHEN your seed is sown, don't sit around waiting for it to grow. It will attend to that part of the business without supervision.

IN this country dollars grow on the end of wheat stalks. You have to break the soil to sow the seed before the dollars appear on the stalks.

A VERMONT man, who wanted to smoke out a woodchuck, burned over an acre of ground and destroyed fifteen rods of fence. The woodchuck escaped.

AN exchange devotes three-quarters of a column on "When to Cut Timothy." The best advice on the subject can be given in a few words, viz., cut him when he is broke.

THE mummies are not surprised at the disturbance in Egypt. They do not know what it is all about, however, and in that respect they resemble a number of fresher people who do not claim to be mummies.

"Yes, sir," says the proud and happy inventor, "I've struck upon the biggest idea of the century—watches for the blind, so that they can tell the time of day." "Capital idea, indeed! I see—you can fix the dial with luminous paint, eh?"

"A YOUNG NATURALIST" writes us to learn how he can catch a live wasp for scientific purposes without injuring it? Right by the tail, son; right by the tip end of the tail. Squeeze hard. The wasp won't mind it a particle, and if it seems to be injured any that you can see, send us the bill, and we'll pay for a new wasp.—*Reading Times.*

The following memorandum was picked up in a dry goods store in Troy the other day. We give it verbatim: father fetch from troy: one box off acksil greece; seven yards off yallar caliker fore libbie a dress; five yard overball stof blew; one box shenks Pills from Hocombs; ten pounds Cotton battin; twelve yards Caliker for gran mas dress; one and one-half yards buf ribbin; one and one-half yards blew the same kind; tow lenth Stov pipe; two nuttmeggs; four pounds ten penny nales; two kandil molds; ten Ponds Brown Sugar; one Pare Gum Shoes for Katie.—*Buffalo Express.*

GARDEN AND ORCHARD.

INSECTS INJURIOUS TO THE APPLE.—
(Continued.)

The tent caterpillar (*Clisiocampa americana*) is familiar to all apple growers (see Fig. 35). Its description, as given by Mr. Saunders, is as follows:—

"This insect is the progeny of a moth of a brownish colour, with lighter stripes, which appears on the wing in the month of July, and deposits clusters of its eggs upon the small twigs of trees, chiefly apple trees. A single cluster of these eggs will contain several hundreds, and these are covered with a glutinous coating, which serves as a varnish to protect the egg-mass from the action of the weather. In this state the eggs remain during the winter, hatching out in the following spring, just about the time when the buds burst on the trees. The larvæ at once begin to spin their web, in which they enclose themselves for protection against the weather, and from which they issue at certain times in the day to feed on the expanding foliage. As they increase in size they enlarge their web until it presents the appearance so familiar to every one, that of a large silken enclosure, containing, perhaps, two or three hundred worms or larvæ, from an inch to an inch and a half or three-quarters in length. They have the peculiar habit of all going out together to feed at certain times in the day."

Its forest tree relative (*Clisiocampa sylvatica*)—see Fig. 36—constructs a sort of web on the side of the trunks or large branches of trees. Independent of the natural means for the destruction of the tent caterpillar, Mr. Saunders makes the following suggestions on this point:—

"I would advise the cutting off and destroying of the egg-clusters during the winter, when they can be readily seen, and an inspection of the trees in the spring, to see that none have escaped. In case any of the pests have survived till then, they will have begun to construct their web, and can be easily removed by cutting off the twig on which they rest, or if high up on the tree, by a pole with a cloth twisted round the end of it. If proper care is exercised, this caterpillar need never be destructive in any orchard. But with the forest tent caterpillar the case is very different. It feeds upon the leaves of so many different trees that it has a much wider area in which to breed, and whenever it is abundant, it is enormously so. In my own orchard, in which there are about 5,000 trees, I was obliged for two years to keep two men constantly employed for five or six weeks each season in killing these caterpillars, in order to preserve it from destruction. From the smaller trees the caterpillars may be removed by jarring, but, being extremely active, they soon take up their position on the tree again if not at once despatched. In thinking over the matter, it occurred to me that as each of the fleshy pro-legs of the caterpillar is furnished with a fringe of hooks, it would be a difficult thing for it to crawl over a material like cotton batting, so I tied strips of that substance, some three or four inches wide, around the lower part of the trunks of the trees, tight in the centre, so that the upper part of the strips would overhang the middle somewhat, and watched the result. I found that the larvæ would crawl up the tree until they reached this band, and then they would go round and round, until they apparently became tired and went down again. In a letter to one of our local papers I mentioned the matter, and the plan was extensively tried, and it seemed to work very well indeed, almost entirely preventing the caterpillar

from climbing up the trees. I consider these species, where abundant, as more destructive to the apple than all other caterpillars put together."

Vigilance and the constant hunting of the pest, at any and every stage of its existence, but particularly in the egg state, is the grand cure for the tent caterpillar.

"If anybody," says Mr. Bendle, "tells me his orchard is overrun with the common tent caterpillar, I say it is his own fault."

Mr. Roy says on the same subject:—

"Two or three years ago the tent caterpillar did great mischief. The remedy against them is to go over the trees in winter, walk along on the

they afterwards destroy, and the fall web worm, which spins a web smaller than but something like the tent caterpillar, must all be combated like the latter by a careful search for the egg clusters, or by destroying the larvæ as soon as they appear (see Fig. 37).—Report of the Ontario Agricultural Commission.

GROWING GRAPES.

R. J. Donnelly has the following advice to give relative to the care of grape vines:—

The conditions necessary to the successful cultivation of the vine in the open air are:—First, to have the vineyard so located that it may be thoroughly drained and have direct sunshine at all times, especially in the morning.

Avoid low lying, hot or damp situations, and do not train them against walls, or in places where the air does not freely circulate. No other preparation of the soil is necessary than is ordinarily used for crops of corn or grain.

When handling a quantity of vines, first lay the vines side by side in a slanting position in a trench, then cover them with moist earth to keep them fresh till planted. When taken from the trench, cut back each branch to two eyes. Cut off vines as seen before it is planted. Carry the vines from this to the place of planting in a wet sack or cloth of coarse material well saturated with water. For vineyard culture plant ten feet between the plants. For garden culture plant six feet each way, dig holes two feet wide and two feet deep. Throw in a little good surface earth, spread out the roots and fine fibrous rootlets of the vine and fill up the hole gradually with the fine surface earth, continually shaking the vine, and drawing up with the hand every root whose shoulder shows above the earth; spreading out all the roots in a horizontal position, and continually shaking the vine, that the earth may settle among the small fibres and roots.

Fill the hole completely; press the soil around the plant with the feet, then cover the surface to a diameter of about three feet, with a mulch of manure, straw, chips or shavings, anything that will hold moisture, to keep the roots always moist; keep this mulch well broken and permeable during the summer, hoeing it in, and renewing it with fresh material when necessary.

Do not allow any fresh manure to come in direct contact with the vines or the roots. The above description will apply to all small fruits and shrubs. For fall planting, cover the tops of plants with one foot of earth, which remove in early spring as soon as the frost is out of the ground.

To secure the best results, annual and careful pruning is essential. The following is regarded as the best method: Commencing with a good, strong vine, you should permit it to grow the first season without pruning. In October or November following cut back growth, allowing but three or four buds to remain. The following spring allow but two of the strongest buds to throw out shoots. These, in the fall, will be from seven to ten feet long, and should be cut back to within four or five feet of the root. The next spring the vine should be fastened to the lower part of the trellis. When the growth commences, pinch the buds so

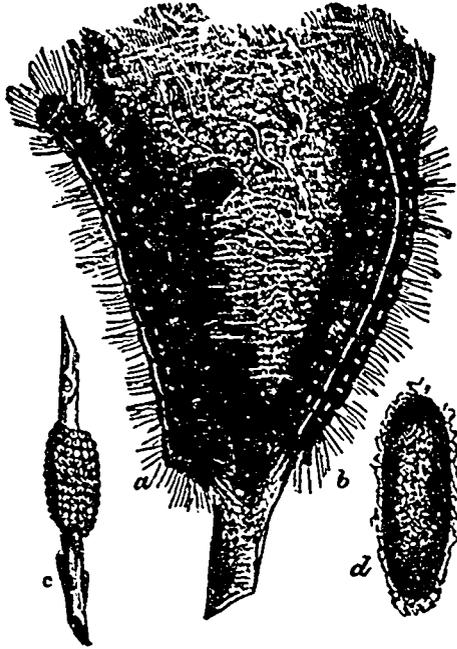
THE TENT CATERPILLAR—*Clisiocampa americana*.

Fig. 35.

In Fig. 35 we have a representation of these caterpillars at a and b resting on a portion of the web, d is the cocoon which contains the insect in the chrysalis state, and c one of the egg masses.

THE FOREST TENT CATERPILLAR—*Clisiocampa sylvatica*.

Fig. 36.

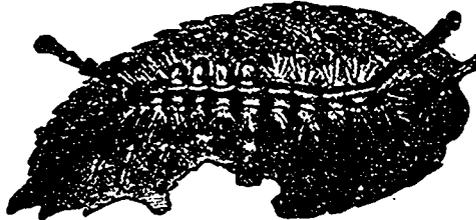
LARVA OF THE TUSSOCK MOTH—*Orygia leucostigma*.

Fig. 37.

crust of the snow and examine the trees, and you will readily detect the rings of eggs. They should be taken off in the winter and put in the fire. I have done so in my orchard invariably. Any man who does this will keep his orchard free from caterpillars—that is, provided his neighbours do the same."

Whether the activity of orchardists in following up this pest, or the seasons, have reduced its numbers, certain it is that recently it has, in many places, all but disappeared. Let no one, however, forget that when dealing with so prolific a brood "eternal vigilance" is the price of immunity from its ravages.

The Tussock moth (*Orygia leucostigma*), and its handsome caterpillar, the latter emerging from the egg clusters the moth has deposited glued to a dead leaf and attached to a twig, the yellow-necked caterpillar (*Datana ministra*), and red humped caterpillar (*Notodonta concinna*), bred from egg clusters on the twigs, the foliage of which

that the shoots will be from ten to twelve inches apart. As these grow, train them to the second, third, and fourth bars of the trellis.

The best grape vine trellis is probably the wire trellis, that is, constructed by planting posts as far apart as you choose to have the length of your trellis; stretch the wires, four in number, about eighteen inches apart, letting them pass through stakes at proper distances from each other to support the wire. As the wires are contracted by cold, and likely to break or sway the posts from their places, they should be loosened as cold weather approaches.

When, however, it is not convenient to make a wire or other trellis, very good results are had with the old vineyard system of training to stakes. The vines are planted eight feet apart, in a place exposed to the sun, and are trained to an upright stake. The method is as simple as the cultivation of Indian corn. Often a large and uncomely rock may be converted to usefulness and beauty by planting a grape-vine on its sunny side, and making use of the rock as a trellis.

DWARF APPLES.

Some contemporary papers are advising the choice of dwarf apple trees for planting in gardens or other limited grounds. But the apple is only effectively dwarfed on the Paradise stock—"Jerusalem apple"—a sort which naturally grows only three or four feet high; has bright bark and deep green leaves which look very well; but it has an irregular, untidy habit of growth, and very brittle wood, apt to snap short off when a load of fruit and racking winds put a strain on it. The borer, too, affects it more than other apple stems, so that on the whole its culture is difficult. Its own fruit, ungrafted, is a mawkly, bitter-sweet, but other apples grafted upon it attain superior size, colour and quality. For those who can take adequate care of the trees, such sorts as Summer Rose, Maiden Blush, Keswick, Codlin, Summer Pippin, Jonathan, Mother, etc., are admirably fine from grafts upon this stock. The grafts should be set at least some inches above the surface, in order not to make roots themselves and convert the trees into standards. For general planting in gardens it is best to select sorts of naturally dwarf growth, such as the Rose, the Keswick, the Joe, the Hawthornden, etc., which begin to bear when only two or three years old, and go on bearing so freely as to keep themselves of dwarf size. If grafted on Doucam stock, which is sometimes called Paradise, it is not much dwarfed, but is enduring, and has very numerous fibrous roots capable of feeding freely from a limited space, and is therefore specially suitable for garden planting.—*W.*

GRAFTING.

I have had thirty years' experience in all the various modes of grafting and budding trees, says a writer in the *Fruit Recorder*. In preparing the limb, I first saw off the branch to be grafted, then with a sharp knife I pare the end of the stub that is to receive the graft, so that the cuticle between the wood and the bark can be distinctly seen; then with the knife I split the limb: using a small, turned wooden mallet, holding fast to the handle, and striking the point, I extricate it from the split. I then drive in the wedge to accommodate the thickness of my grafts. After setting the inner parts of the barks or cuticle exactly together, I knock out the wedge, leaving it to pinch the grafts tight. In whittling a graft I always make the inside edge a little the thinnest, so that it will pinch the hardest on the outer edge, always leaving a bud just at the crown. I then wax with grafting wax, first warming the wax,

and greasing my hands with tallow to keep the wax from sticking. I make wax as follows: Four pounds rosin, one pound tallow, three-fourths pound beeswax. Melt all together over a slow fire; have a tub ready with lukewarm water. As soon as all is well melted pour a small quantity at a time into the water, then grease hands with tallow and pull the wax until it is pliable, and of a golden yellow colour. Roll into balls, and throw into warm water to cool. By following the above directions, 95 per cent. will grow.

PEGGED ROSES.

A writer in *Gardening Illustrated* says: "Only those who have seen the glorious displays that roses are capable of producing year after year when pegged down, can rightly estimate their value." Hybrid perpetuals are pronounced the most effectual for this purpose, and especially those of vigorous habit, among which are named Alfred Colomb, Jules Margottin, Charles Lefebvre, General Jacqueminot, Madame Rivers and others. They should be on their own roots, as bending down obviously tends to induce them to throw up suckers. The writer here referred to says that the beds which he made thirteen years ago are as vigorous as ever. H. B. Ellwanger prefers for pegging down the most profuse blooming monthly roses, in preference to the hybrid perpetuals, the latter not being such continuous bloomers.

TRANSPLANTING EVERGREENS.

Take the trees up carefully, keeping the roots as nearly perfect as possible after digging; puddle the roots well; place carefully in a proper position and cover with fine rich soil (not manure) well pressed down; mulch with sawdust, coarse straw, leaves, or anything that will make a good mulch; then let them alone. This will apply to all evergreens as well as all kinds of fruit trees, excepting that the latter should be cultivated at least for a few years—most kinds, the longer the better. There may be cases where newly-planted trees might be saved by watering frequently and regularly during a long, dry season, but I am convinced by observation that scores of trees are killed by watering at planting time and occasionally afterward, where one is saved by it. I have several thousand trees and bushes on my place which I have planted with "my own two hands," including red and white cedar, white pine, Norway and native spruce, black walnut, butternut, maple and all manner of fruits. I have learned by experience that if we plant trees (any kind) properly, it is no more unreasonable to expect them to grow than if we plant so many hills of corn or potatoes.—*G. W. Cone, in the Husbandman.*

MULCHING.

A member of the Oneida community, writing on the importance of mulching fruit trees and plants of every kind, says that he mulched a row of the Franconia raspberry, and also one of the Philadelphia side by side. The effect was very marked. While the Franconias which were not mulched were literally scorched, and the leaves crumpled in the sun, the row which received the mulching carried through nearly double the crop of fruit. The material used for mulching was old, half-decayed buckwheat straw, etc.

In setting out plants, I wet the ground before taking them up, so that some dirt adheres to them; when I have a painful I sprinkle them thoroughly, so that the dirt is sticky, and I can then transplant them in the middle of the day, in a dry time, without the loss of scarcely one.—*Cor. Tribune.*

CURRENT NEWS ITEMS.

The farmers of the electoral district of Turtle Mountain have organized an agricultural society.

A PICKERING farmer says that, so far as he can judge, his yield of barley will be from sixty to sixty-five bushels to the acre.

MR. GOODFELLOW, of Medonte, a few days ago ploughed up the skeleton of a man who was supposed to have died in the bush some years ago.

ONE who is in a good position to judge estimates that 100,000 bushels of wheat will be shipped from the Manitoulin Island as the result of this year's harvest.

A RESIDENT of Paris obtained this season 8,000 quarts of strawberries, nearly ninety-four bushels, from three-quarters of an acre of ground. This is in the proportion of 125 bushels to the acre.

SOME sharpers are operating among the farmers of Durham with a "Hay Lifter." They are said to be rather too sharp at their business, and farmers should be careful to have no dealings with them.

THE *Syracuse Journal* warns its readers to look out for ten-dollar bills on the Consolidated Bank of Canada. It is believed that a large number of these have been circulated lately, and it should be borne in mind that all ten-dollar bills on this bank are worthless, as they were stolen unsigned and the signatures forged.

A MEETING was held in Minnedosa last week to discuss the liquor question. At the close, a petition asking the Local Government not to interfere with the present liquor law of the Northwest was circulated, and all in the audience, excepting three persons, willingly placed their names to the document.

THE *Hamilton Times* of the 22nd ult. says: Mr. David Burkholder, Binbrook, to-day showed at the *Times* office a stalk of common Canadian yellow corn, which measures within an inch or two of ten feet. It was grown in the open field, under ordinary circumstances. Hundreds of other stalks were as tall as this one, and some within a few inches of it.

MR. JOHN DRYDEN, M.P.P., and Mr. H. H. Spencer have arrived from England with three carloads of sheep, mostly Shropshire Downs, imported by them. During the passage they lost two valuable sheep; barring this mishap, the flock arrived in excellent condition. A splendid Clydesdale colt brought out by Mr. Dryden elicited favourable comments from the spectators.

A BRANTFORD *Expositor* reporter, who has been visiting Grimsby, reports that after a hasty glance through the orchards of that famous fruit-growing section the conclusion arrived at was that young and vigorous trees that had been well cared for will produce a fair crop, but those which have been weakened by neglect or old age will be thin. The yield, on the whole, will be about half an average crop.

THE Shakespeare correspondent of the *Stratford Herald* says: "The fall wheat in this vicinity is a good crop; it is nearly all gathered in, and not so much hurt by the wet weather as it was at one time feared it would be. Many farmers must thresh it out right off, to make room for a very large spring crop. Root crops of all kinds promised a large yield. Apples are almost a total failure. The flax crop is pretty good, where it has room to grow on Canadian thistle, but the amount of thistles some farmers are growing is something really serious, both to themselves and their neighbours, and if not looked after will make the profits of farming with some of them very small."

HORSES AND CATTLE.

THE HAMBLETONIANS.

In the year 1788, a thoroughbred horse named Messenger was imported from England to the United States. His pedigree showed him to be a direct descendant of the Darley Arabian. From the Darley Arabian came Flying Childers; from Childers, Blaze; from Blaze, Engineer; from Engineer, Mambrino (represented in our engraving); and from Mambrino, Messenger. Of Messenger's history, after his arrival in America, Dr. McMonagle says:—

"Messenger was imported into this country in 1788, and he first arrived at Philadelphia. He served for twenty years, during seventeen of which the exact places where he stood, and at what prices, are known to posterity, as well as what mares he served during the last few years of his life. Wallace reprints a stud poster of March 1st, 1802, signed by Isaac Burr and Benjamin R. Cooper, in which the second paragraph of the announcement reads as follows:—Messenger proved himself a noted sire and foal getter when he stood in Pennsylvania, New Jersey, Long Island, and elsewhere. His stock, some of which is selling from \$500 to \$2,000 each, are equal, or perhaps superior, to any other horse in the States."

"Mr. Van Ranst, his owner, put it on record forty-five years ago that, for a number of years, perhaps eight or ten, he leased his services for a rental, free of all expenses to him, of \$1,000 per annum. If we bear in mind that this was three-quarters of a century ago, that he was located each season in some section of the country that was essentially agricultural, and that the average farmer could not then command one dollar as easily as he can ten now, we can begin to realize something of the magnitude of a net annual rental of \$1,000 for the services of a stallion in that day."

"It became noted shortly after his arrival, that he was a horse of real innate superiority, of peculiar prepotency, or a determination to convey to posterity not only what had been conferred upon himself, but an additional characteristic. He originated a type of horses almost entirely different from the family from which he came, unless the combination that produced Mambrino, the sire of Messenger, was an exception. He embodied 'all the blood of all the Howards,' and was the 'noblest Roman of them all.'"

"One of Messenger's ancestors, it is said, had the faculty of straddling when on the run, and he conveyed that peculiar habit to his family. Messengers were all large, stylish horses, and although derived from a variety of sources on the dam's side, they generally followed the sire, and produced trotters that were not celebrated for speed particularly, but as roadsters."

"In Rhode Island, in New York, and in New Jersey, there grew up a stock of horses known as the Messenger stock, and they were all sought at very high prices. The sons of Messenger were gathered up during the last few years of his life, and taken in all directions. Some were taken to Maine, and produced the Bush Messenger family. Ogden's Messenger was sired by imported Messenger, and stood for many years on the banks of the River St. Lawrence, across from Morrisburg. It is claimed that Ogden's Messenger produced

Tippoo, but that has never been proved to my satisfaction.

"Messenger had very many other sons, which went in different directions, and wherever they went they all seemed to impart an influence that produced strong, able drivers, and fine coach horses. The greatest of Messenger's second descendants was probably Tippoo Saib, Junior. It was demonstrated that if a Messenger's grandson and a Messenger's granddaughter were bred together, as in the case of Dutchman by the above sire out of Nettle by Black Messenger, they would produce trotters which would go three miles in 7:32, an actual performance, standing unequalled for thirty-three years, when on September 21st, 1872, the great mare, Huntress, in-bred in the same line by Volunteer by Rysdyk's Hambletonian, reduced the three-mile feat to 7:21, which stands unequalled yet."

From Messenger came Mambrino; from Mambrino, Abdallah; and from Abdallah, Rysdyk's

which he won easily by 22 seconds."—Report of the Ontario Agricultural Commission.

AN ENGLISH VIEW OF GALLOWAYS.

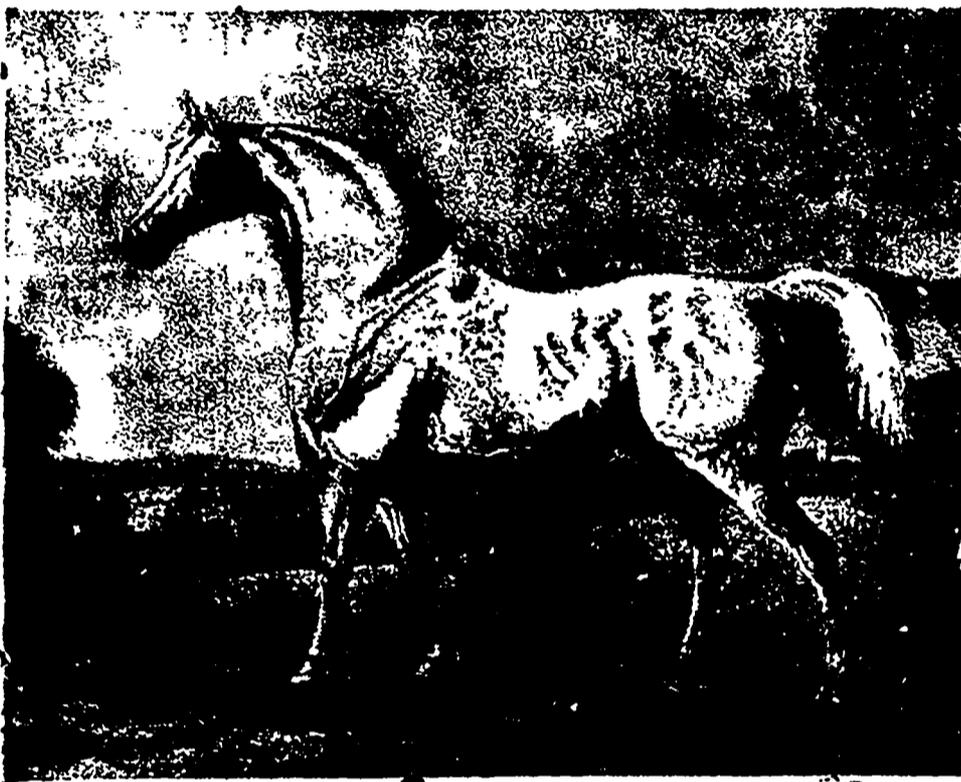
At the annual meeting of the Galloway Cattle Society, held in Dumfries, Scotland, the Secretary, Rev. Mr. Gillespie, in the course of his remarks, said there appeared to be a greater anxiety on the part of people who had pure-bred Galloways to get them entered in the Herd-Book. Those people were wise in their generation. He had frequently expressed his belief in the future of Galloway cattle. There were strong indications that a great demand for them would rise up in Canada and the United States, as more Galloways had been sent out during the last few months than for many years previously, and the American people were beginning to appreciate the

merits of the breed for all their purposes. Breeders of Galloways knew that their merits for the purposes of the American people were very high. The polled Angus was a magnificent breed for particular circumstances; but there was not a breed possessing so many recommendations to American breeders as the Galloways. There was no breed of polled cattle in Britain so impressive and influential as the Galloways in crossing with horned cattle, with the view of getting quit of the horns. He ventured to affirm that, where a pure, well-bred Galloway bull was put to cows of any horned breed, the produce, in ninety-nine cases out of every hundred, would be polled, and he would leave those in a position to judge to say whether there were any other polled breed of which the same could be said.

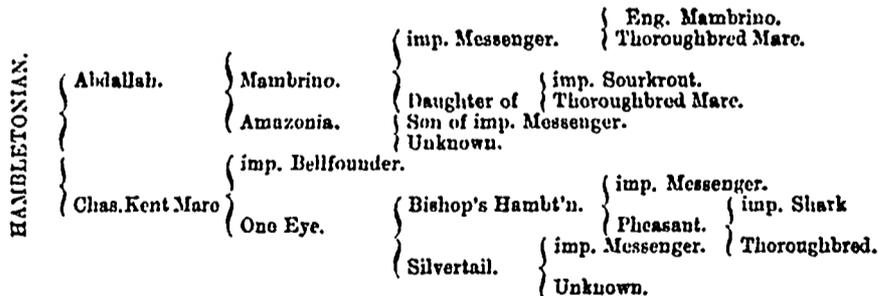
Then there was their hardy character, which was a great point in their favour. There was no breed, except perhaps the West Highland, so peculiarly fitted for exposure to extremes of heat and cold experienced in many parts of the Western States, where a large number of cattle had to lie out at all seasons. The breed was also a capital beef-producing one, and he was

sorry to observe that in recent years breeders had been doing so little towards bringing this quality before the notice of the public. As an instance of what might be done, he reminded them of the way in which Mr. M'Combie had taken the polled Angus breed into the world and made a name for it. That gentleman showed the public the merits of the breed, and they knew the result. The Aberdeen farmers had great reason to bless the name of the late Mr. M'Combie in all time coming.

He thought the breeders of Galloways had been too backward in showing the world the superiority of their animals for beef-producing purposes. Outsiders, however, were beginning to see that the breed possessed great merits, hence its growing popularity. It would be remembered that in 1861 Mr. M'Combie won both at Smithfield and Birmingham with Galloway animals bred by the Duke of Buccleuch: then they knew that in 1872



"MAMBRINO," SIRE OF "MESSENGER."



"Two streams of Messenger blood unite in Abdallah, the sire of Hambletonian, and two streams unite in One Eye, his grandson, and these four streams unite in him."

Hambletonian, the founder of the Hambletonian branch of the Abdallah-Messenger stock. Hambletonian, with the exception of one cross with imported Bellfounder, was strictly in-bred from Messenger.

His pedigree is supplied by Dr. McMonagle as above.

Of imported Bellfounder it is said:—

"Imported Bellfounder—designated the 'wonderful Norfolk Trotter'—was imported from England by James Boott, and landed at Boston, Mass., in July, 1822. He was a bright bay with black legs, standing 15 hands high. His stud card of the following year says:—'His sire, old Bellfounder, was a true descendant of the original blood of the Fireaways, which breed of horses stands unrivalled for the saddle. Bellfounder is allowed by the best judges in Norfolk to be the fastest and best bred horse ever sent out of that county. At five years old he trotted two miles in six minutes, and in the following year was matched for 200 guineas to trot nine miles in 80 minutes,

Mr. James Cunningham won a prize with a heifer bred by Mr. Biggar, of Chapelton, which had previously taken first prizes in the Highland Society's Shows, and afterwards won the champion prize in the polled class at Smithfield.

He thought the Galloway breeders were greatly indebted to Mr. Jardine, of Castlemilk, for what he had done in recent years toward bringing the breed to the front. The cattle had a better name in the world ten and twenty years ago than at present, simply because more was done then than now to display their merits to the outside world. Galloways had held prominent positions at Smithfield and elsewhere in the hands of the gentlemen he had mentioned; and if the breeders all over the country had taken pains to maintain the

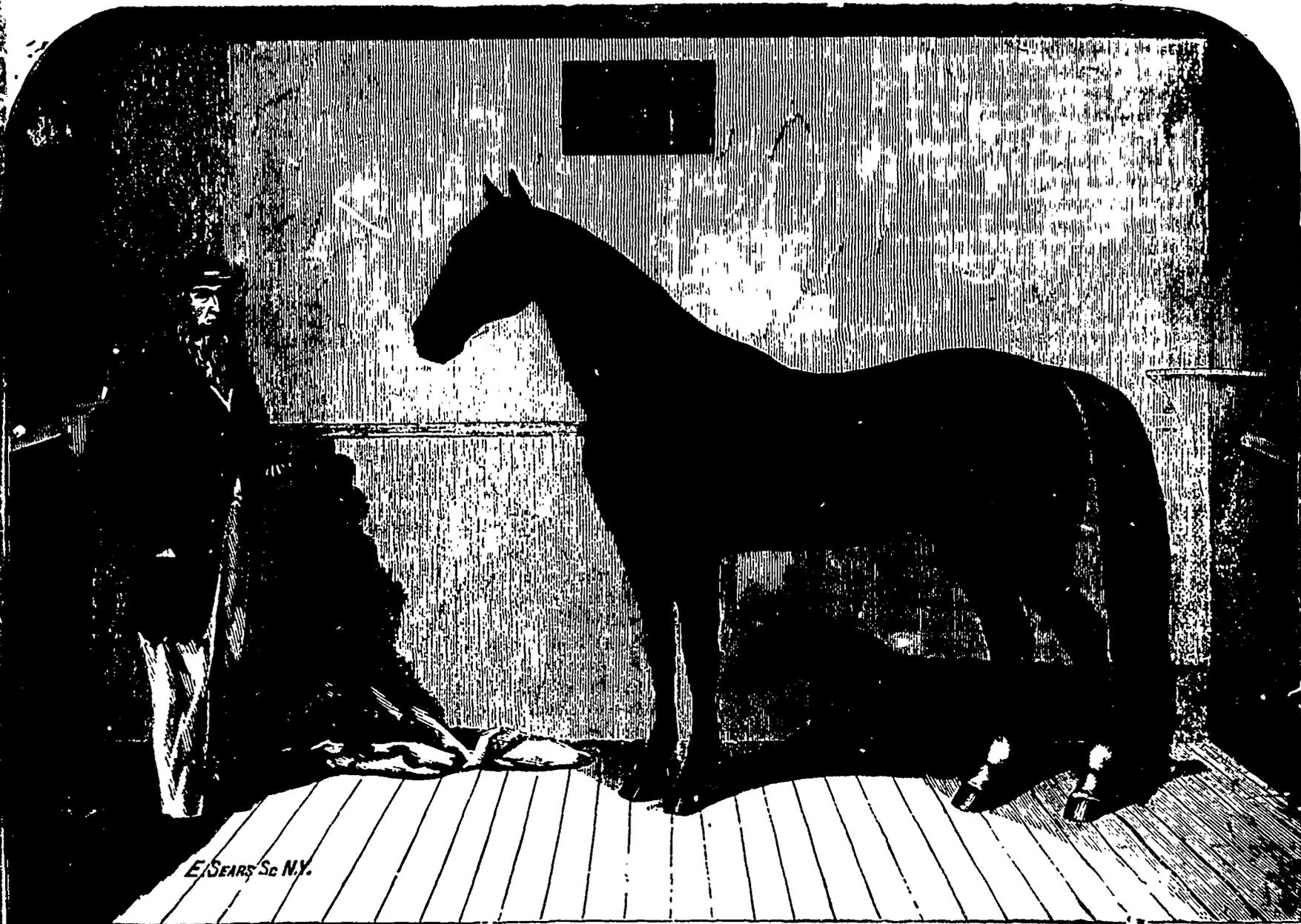
monly drive the animal into a frenzy of fear and excitement. A gun can be fired from the back of a horse, an umbrella held over the head, a buffalo robe thrown upon his neck, a railroad engine pass close by, his heels bumped with sticks, and the animal take it as a natural condition of things, if only taught by careful management that it will not be injured thereby. There is less whipping wanted and more education.

QUALITY IN DRAFT HORSES.

In one thing there has been a very marked change in the popular idea of the draft horse for use in this country. A few years ago great size was considered the one thing needful in a draft

HORSE BREEDING PROFITABLE.

The active demand for good horses which prevails in all parts of the country is attracting increased attention to the breeding of horses. The breeding of horses for sale is likely to prove one of the most profitable branches of farm industry. By securing good brood mares to start with, and breeding from stallions such as will mate well with the mares and tend to secure the desired qualities in the offspring, the business may be placed on such a sound basis that success may reasonably be expected. One difficulty, however, which meets the breeder at the outset is that of obtaining suitable stock with which to start. The demand for good horses the past few years has



RYSDYK'S HAMBLETONIAN.

prestige of the stock, they would now have been in a more favourable position. They should do their duty by their cattle, and the money value of the animals would rapidly rise.

EDUCATING HORSES.

If a colt is never allowed to get an advantage, it will never know that it possesses a power that man cannot control, and if made familiar with strange objects, it will not be skittish and nervous. If a horse is made accustomed from his early days to have objects hit him on the heels, back, or hip, he will pay no attention to the giving way of a harness or a waggon running against him at an unexpected moment. We once saw an aged lady driving a high-spirited horse attached to a carriage down a steep hill, with no hold-back straps upon the harness; and she assured us that there was no danger, for her son accustomed his horses to all kinds of usage and sights that com-

horse. They were not exactly bought and sold by the pound like cattle or swine, but the weight of the horse was one of the first questions asked; quality was lost sight of. This rage for size led to the importation of many miserable brutes, and to the perpetration of many glaring defects in conformation, and to the transmission of much hereditary unsoundness. But, thanks to the judgment of discriminating buyers, the public has come to understand that it takes something besides flesh and bone to make a good horse. Quality, action, endurance, and temperament are now closely scrutinized by all breeders of intelligence, as well as by the buyers of horses for the great markets; and the importer or breeder who now neglects these essentials in his selection must go into some other business.

What will be the ultimate effect of this enormous influx of foreign draft blood upon the horse stock of our Western States, where these importations mainly find a lodgment, remains to be seen.

been such that the best horses of medium and large size have been pretty cleanly picked up, leaving mostly horses of small size or undesirable ones. Horses weighing only nine hundred pounds have not been in very active demand in the market, and consequently there are many of that size scattered over the country which are of excellent quality. These may readily be obtained for breeding purposes, and by mating with stallions of large size colts may be obtained which will attain a size suitable for the market. In selecting breeding stock great care should be exercised, and only such chosen as are sound. Many of the affections which render a horse unsound are hereditary, and are liable to reappear in the offspring at about the same age as they appeared in the parents.

DEEPLY-ROOTED crops, as wheat, red clover and mangel, are those best fitted to resist droughts; while shallow-rooted crops, as grass and turnips, are those that suffer most from it.

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The Rural Canadian.

EDITED BY W. F. CLARKE.

TORONTO, SEPTEMBER 1st, 1882.

THE APPLE CROP OF THE WORLD.

The London Garden of July 15th states that in England the apple crop is comparatively a failure; in France only a poor half crop is calculated upon; in Germany one-third crop only, in Holland only half a crop, and in Belgium not half a crop. Russia is not reported, but the production there is not extensive at best. The Garden comforts itself that the apple yield in America is "most prolific" the present season. There was the promise of abundance early in the season, but it will not be fulfilled. Large quantities of apples have fallen from the trees, in localities where there was the most profuse blooming, and orchards generally wear an appearance of deficient vigour. This is apparent in the withering of new shoots. There was vitality enough for these to put out, but not sufficient for them to mature. The feeble and struggling condition of apple orchards in this country is attributed by many good judges to the great heat and drought last fall. Let us go a step back of that, and we shall find that orchards generally are poorly nourished, that they have no reserve of vital forces to bear an unusual strain, and must therefore succumb to an extra demand upon them. With a more generous culture in the past, our orchards would only have received a moderate check in their growth from the heat and drought of last year, which would have tended to the development of fruit buds, and we might have had this fall a good crop to export, reaping a golden return of high prices. Starvation culture never pays.

WHITEWASHING FRUIT TREES.

Whitewash, no doubt, has its mission. Out-buildings, fences, and certain public characters look the better for it, since it hides unsightly appearances. Ceilings, bed-rooms, and cellars not only look, but are the better for it, inasmuch as it renders them sweeter and more wholesome. But whitewash always did appear to us entirely out of place in an orchard. There, where all should be verdure and natural beauty, a coat of this glaring stuff seems an intrusion and an eyesore. Still, if it helped to produce the luscious fruit, the disfigurement could be endured.

We are glad to learn that a N. Y. fruit-grower, and member of the Elmira Farmers' Club, has demonstrated to his own satisfaction the inutility of this application. He says:—

"Whitewashing has no beneficial effect in keeping worms from the trees. Put whitewash on a tree at the time when the eggs are usually deposited, and they will be placed there just the same. The only object in whitewashing trees with lime or washing with lye is to make the trunk smooth, to take off the scaly bark, which affords a harbour for insects, and in this way lessen the liability to injury from the deposits of eggs. I am not sure but the whole practice is wrong. My own trees have been washed with lye for years until they were very smooth, the bark green and fresh. I thought I had made a great

improvement, but I am inclined now to the opinion that the change was favourable to the borer. I find trees badly eaten where I had expected complete immunity. Whitewashing trees in the common way softens the bark and makes it easy for the insect to puncture it for the deposit of eggs. In my opinion, nature designed the rough scaly bark as a protection. I think scraping trees is worse than useless, although I have practised it. The only advantage is in giving the trunk a smooth appearance, while there is the disadvantage of facilitating entrance for the borer. Another fault follows the washing. My trees, that were so smooth and had such green bark, are now sun-burned, the bark withered and blackened, plainly because the scraping and washing made the bark more susceptible to injury by the heat of the sun. I had as handsome trees as you could find anywhere, and had considerable pride in their appearance, because they were commented upon favourably by passers-by, but I am now persuaded that the course taken was extremely hurtful, and I have no doubt I shall lose most of the trees, whereas if the old bark had been left on I think they would be healthy now."

The fact is, that all the troubles with tree trunks in orchards may be traced to an unnatural mode of culture. Nature has ordered that there shall be a growth of branches on all fruit trees, from quite near the ground, but man has determined that there shall be a bare trunk from six to ten feet in height. On nature's plan, a thick leafy shade is formed around the trunk, and as the eggs of those insects that cause bark troubles are laid by the parents when in the winged state, and they do not incline to fly into the shade, such trees enjoy immunity from these evils, while the bare trunks are fully exposed to them. Nor is this all. The growth of branches low down on the trunk protects from the heat of the sun in summer, and from the severity of the wind in winter, while it keeps the ground moist and cool, so favouring the healthful growth of roots. It is only in the dense forest that trees grow up with high, bare trunks, and there the number of them, and their close proximity to each other, secures the benefits which the tree, growing singly and alone, obtains from the encircling wall of its own leaves and branches. We shall escape a host of orchard troubles when we permit young trees to take their own way of branching out near the ground. The impossibility of ploughing close to orchard trees, and the difficulty of gathering the fruit off them, are the only objections of any weight to the natural development which has been described. In regard to the first objection, the answer is the same which was given by a literary man to the remark that his study was too small to swing a cat in. "My dear sir," said he, "I do not want to swing a cat in it." In like manner, we do not want to plough close to fruit trees. It tears the roots, which form a network very near the surface of the ground, and it exposes the trunks to injury by the team and the whippetrees. In regard to the second objection, it is indeed removed by the common practice, but, to a great extent, it is only removed a few feet higher into the air, where the difficulty becomes complicated by the necessity for using a ladder. The fruit of trees naturally grown can be largely gathered from the ground, and only half the necessity for a ladder will exist on this plan. By all means let us have leaves and branches as a defence for fruit trees, instead of whitewash, or any other bungling device resorted to by man to counteract the effects of his own folly.

CHEESE.

This important article of commerce now rules high, and while many speculators on the "balance of the season" think it will go higher, past experience proves that it is hazardous to hold largely on the strength of "great expectations." A con-

temporary gets off a sporting article on "the situation" as follows:—

"Quite an exciting period usually commences in the cheese trade about this time, when dealers and shippers begin to look around in order to mature their plans for scouring the 'balance of the season's make.' The first man who has pluck enough to lead off is invariably called crazy by his less venturesome operators for establishing 'such a ridiculously high figure,' but no sooner is the balance of the season's cure of a few factories picked up than their courage rises, and one after the other they join in the fray, and will even see the first man, whom they called crazy, an eighth, a quarter, or half a cent better, when they get fairly warmed up to business. It reminds one of a good, old-fashioned English hunt. The sports, all mounted on their favourite steeds, are anxiously awaiting the start, when no sooner does the fox leave cover, followed by the chorus of the hounds and the 'Tallyho' of the 'whipper-in,' than the horses pick up their ears, and their riders take a clean sweep across the country, over hedge, ditch and row, to the finish. We understand the 'find' has already been made for the 'balance of the season's' run, which is said to be 12c. Well, all we have to say is that a 12c. fox, if forced to break cover, is a wily old customer; he seldom takes the level fields, but leads through the roughest and most broken parts of the country, and is always game for a tough chase. If we mistake not, it was a 12c. run last year, and a terribly long one at that, as it lasted, we believe, right into the new season, and laid out some rough work for both horses and riders. Under the circumstances, therefore, it is suggested by some in the trade that it would be better for the 'whipper-in' to make a fresh 'find,' and let the 12c. fox lie in his hole. It is thought by conservative buyers that if they could get away with an eleven cent 'find' it would make a pretty safe run, but others well posted in the trade do not think it possible. Having made these few remarks, we leave the matter in the hands of our veteran cheese operators, and trust they will come out of their exciting 'balance of season's' run with as few flings, broken limbs and bruises as possible. Since writing the above, we learn that the 12c. 'find' broke cover in the Belleville district yesterday, where several factories were contracted at 12c. for August, September and October."

STATE OF THE CROPS.

The following summary of the Report of the Bureau of Industries for August, though it gives information only up to the 1st ult., is valuable for comparison and reference. It will repay, not perusal merely, but study. Since its preparation there have been, in various parts of the Province, violent storms and heavy rains, on account of which the estimate of prospects must be abated somewhat. In a few cases, no doubt, serious damage has been done, though we think the September circular of the Bureau will show that the extent of the mischief has been exaggerated. Our fears and anxieties usually magnify the injury done to growing and newly-harvested crops.

Despite the drawback to which we have referred, the harvest will, we believe, turn out a bountiful one throughout the Dominion of Canada:

"The Report of the Bureau of Industries for August contains statistics of the live stock of the Province, as returned by School Section districts on the 31st of May, and tabulated by counties and county groups. It also reviews the condition of crops on the 1st of the month, the progress of haying and harvesting operations at that date, farm labour and the rate of wages, and the state of pastures and live stock in relation to meat supply and dairy produce.

"The month of July was very favourable for haying, the weather being steady and the temperature moderate, and the bulk of the crop has been saved in excellent order. Clover recovered to some extent from the serious damage done to it by winter exposure and spring frosts, but in the most favoured localities the yield does not exceed one ton per acre, and the general average will be

much less. Timothy and mixed grasses were very heavy, and the uniform report from all sections is that no better crop has been gathered in twenty years.

"Throughout the western half of the Province, fall wheat has been remarkably heavy, but it has not escaped the dangers incident to a late season of ripening. Owing to a rank growth of straw and occasional rain storms, the crop lodged badly in many localities just as the grain was beginning to harden, and about the same time, unfortunately, it was struck with rust. As a consequence, the sample is not generally as good as was looked for; it is lacking in plumpness and colour. The worst effects from those causes are reported from the loamy lands of the south-western counties—from Essex, and the basins of the Thames and Sydenham rivers. In some sections the whole crop has been reaped and saved in good condition, but the bulk of it was either standing or in shock when work was interrupted last week by a rain storm of several days' duration. Late reports say that in many fields the grain has sprouted, but the full extent of the damage will not be known for some time. The storm was local, and confined chiefly to the western counties. In the Georgian Bay counties a large acreage has been saved in good order, and the sample is prime. In the Lake Ontario and St. Lawrence and Ottawa counties the crop was badly winter-killed, and what remains will yield less than an average. In the East Midland counties a good crop will be harvested, but not equal to last year's. In the Lake Erie counties, where some grain has been threshed, it is found to yield from 20 to 80 bushels per acre, and correspondents in all counties west of Toronto estimate the yield at not less than 20 bushels per acre. Spring wheat in the eastern half of the Province, where it is extensively grown, gives promise of an abundant harvest, but in some districts it is being attacked by the midge, the Hessian fly and rust. It will be ready for reaping generally about the 20th of this month.

"Barley is everywhere a heavy crop, and a large acreage has been grown, especially in the Lake Ontario and East Midland counties. The grain is uniformly plump, and of good colour, with a few exceptions when it ripened too rapidly owing to the drought, or where it lodged and rusted. In the western counties the yield is good, but the harvesting season has been unfavourable.

"There is a large area under oats, and with the one exception of the Georgian Bay counties, the crop is reported good all over. The estimates of correspondents range from 95 to 60 bushels per acre. Peas are a good crop in all the northern counties, but elsewhere they have been injured by the bug.

"The corn crop is everywhere pronounced a failure. The season has been too wet and cold for it, and though it has made good growth during the past three weeks, there is little chance now of its attaining to half an average crop. Beans are chiefly grown in the counties of Kent, Norfolk, Brant and Renfrew. They are generally reported good, but in some localities the crop is worthless.

"Potatoes were injured by too much rain early in the season, and later on by the drought. The beetle, too, is about as troublesome as ever. Turnips, mangolds and carrots have only partially come up, and a good crop is rare; turnips especially are late, and are badly injured by the fly.

"The fruit crop is poor in all the best fruit-growing districts. Apples are good only in the Lake Ontario and River St. Lawrence counties, and there they will not be more than half a crop. Peaches and plums are almost a total failure, pears and grapes are fairly good, and small fruit alone is abundant.

"Pastures were good throughout June and the first half of July, but recently they have become parched and bare in many parts of the Province. This has been especially the case in the Lake Ontario counties, where in some districts cattle had to be given extra fodder. For this purpose soiling came in good where it could be availed of. Fat cattle are scarce, particularly in the finer classes suitable for export, and there is a disposition to force young cattle prematurely into the market. The dairying interest is less flourishing now than it was earlier in the season, and the milk supply is falling off. The recent

rains, however, will doubtless make the pastures good again.

"Farm labourers have been scarce, and the demand for them was increased by the general heaviness of the harvest. Wages ran from \$1.50 to \$2.50 per day, and from \$25 to \$40 per month with board, and even at these high figures it was difficult to procure men.

"The statistics of live stock are as complete as they could be obtained. No estimates have been made of thoroughbreds for sections for which returns were not received, owing to the difficulty of finding an average. It is certain that the full number has not been reported, but it is almost equally certain that some animals entered in the schedules of farmers as thoroughbreds would never obtain registration in a Herd Book. Following are the returns for the Province:

HORSES.	
	The Province.
Working horses.....	339,481
Breeding mares.....	72,065
Unbroken horses.....	100,605
CATTLE.	
Thoroughbred.....	23,297
Working oxen.....	14,245
Milch cows.....	680,662
Store cattle, over two years.....	272,861
Other cattle.....	617,001
Total milch cows, all breeds.....	687,037
" cattle, all classes and breeds.....	1,608,066
SHEEP.	
Coarse woolled, one year and over.....	941,744
" " under one year.....	686,610
Fine woolled, one year and over.....	183,022
" " under one year.....	131,404
PIGS.	
One year and over.....	257,406
Under one year.....	609,589
POULTRY.	
Number of turkeys.....	317,784
" geese.....	538,922
" other fowls.....	4,521,899."

The Weather Report, which is furnished by the Meteorological Office, is a register of important facts for the farmer. The addition of eight sunshine recorders to the two heretofore in use will add materially to the value of future reports.

FRUIT-GROWING IN EUROPE.

As recently stated in the RURAL CANADIAN, Mr. Charles Gibb, who has long been the leading spirit in the Montreal Horticultural Society, is now on a tour in the old world, accompanied by Prof. Budd, of Iowa, in search of new and valuable fruit. Mr. Gibb has sent the following brief communication to Mr. N. S. Whitney, President of the Montreal Horticultural Society:—

"VIENNA, 23rd July, 1882.

"Journey interesting so far. In France and Germany many of the promising new apples are in leaf semi-Astrachanica. In the Jardin des Plantes many of the pears showed they were crosses with the pears of North or South China or India. The German oider or cooking pears are semi-North Chinese, many of them, and a different race to those of West France. Some varieties of vinifera have leaves as thick as Adirondack and even Concord. Bad year for fruit so far. We will soon strike northward into Galicia and Poland. Many Eastern forms of trees in Germany not known in United States, England or France.—Yours, etc.,

"C. GIBB."

SKETCHES OF CANADIAN WILD BIRDS.

By W. L. KELLS, LISTOWEL, ONT.

THE CANADIAN GROSBEEK.

In its nesting and general habits this species resembles the tanager, but it is larger in size, and its notes and plumage are very different. Its bill is short and thick, and of an ivory colour. It feeds on grain, various kinds of seeds, and also on insects. The male grosbeak is not only a beautiful bird, but a fine songster. Its length from the end

of the beak to that of the tail is seven inches, and its wings, when spread, measure twelve inches. The head, throat, upper parts of the back, wings, and tail are of a black colour; the abdomen and lower part of the back is white; there are also two bars of white on each wing; and three feathers on each side of the tail—which consists of twelve—are marked with white. Part of the breast and under each wing is deep crimson. The general colour of the female is grayish-brown above—each feather being marked with a dark spot—and the under parts of its wings are of a yellow hue. In the spring season these birds appear pretty numerous in the newly-sown fields bordering on the woods, where they feed upon the grain left uncovered by the harrow. As the season advances, they separate in pairs, and retire into the thickest woods, where they are chiefly found during the summer months. In the harvest, when the breeding season is over, they again assemble in small flocks, and feed upon the standing grain in the vicinity of the woods. The female makes her nest on the spreading branch of a tree, or among the thick branches of under-brush; this is formed of brambles and dry weeds, lined with finer material. The eggs are four in number, of a light blue colour, mottled with brown. The song of the grosbeak, which consists of several melodious notes, warbled in a clear, distinct and powerful tone, is heard in the woods where it makes its home from early in May until the latter part of August. In September it leaves for the south. The male assists his consort in the duty of incubation, and providing the young with food.

THE PINE GROSBEEK.

This beautiful and interesting bird is rather a winter than a summer visitor in the south or central parts of Ontario. Occasionally, during severe cold weather, they assemble in small flocks, come down from the more northern wilderness, where they make their summer homes, and visit the farm yard, and surroundings of human habitations, in search of food. On one occasion, in the winter season, I saw a beautiful specimen of the male grosbeak that had been caught in a trap set for small birds. It was kept, and for a short time it seemed to enjoy its cage life, freely eating the small grain and crumbs that were given to it, and at times chattering a few cheery notes. But, as spring approached, it appeared to become weary of its captivity, and pined away and died. The native homes of this bird appear to be the extensive pine and cedar forests of the old Canadian provinces and the North-west. Here it chiefly subsists on the seeds of the evergreens, and its southern migrations depend on the severity of the winter season in its summer haunts. At this season, they often visit the New England States, where they feed much on the berries of the red cedar, and in the neighbourhood of Toronto they are said to feed on the buds of flowering shrubs and fruit trees. The length of the adult male is six or seven inches; his plumage is carmine on the back, paler below, striped with black; the wings are dark, with white edg-ags. The female is ashy gray, with yellow markings. Its nest is built in the branch of a small tree, and formed of bramble and small roots. The number and colour of its eggs are similar to those of the Canadian, or rose-breasted grosbeak. Its song is rich and musical, but not often heard except in those wild regions where it generally makes its home.

MR. ALEX. SMITH, of the River road, near St. Marys, says that the Hessian fly is very bad in his grain. He will not sow so early again, as this has been a lesson to him. He believes that this pest is the cause of so much grain lying down, as the insect attacks the straw near the ground.

SHEEP AND SWINE.

PIGS FOR PROFIT.

The care of pigs in summer can be made less troublesome and more profitable than is usually the case. Unless confined in restricted quarters, pigs are liable to break out and do mischief. They are not adapted to being kept with other stock, as no animal likes to feed after pigs, and while this dislike is so marked that animals will not eat out of the same vessel from which pigs have been fed, or in which they have "mussed," they may be forced, from hunger, to eat the grass in the pasture where they run, but it is not wise to compel them to do so. For these reasons, farmers generally keep pigs shut up in pens, where they must be supplied with all the food they require. Sometimes this condition is improved upon by allowing them a small range on the ground. This is better than close confinement in the pen, as it makes them more comfortable and healthy, but it does not lessen very much the amount of care they require, as the supply of food is soon exhausted. It is a better plan to have the enclosure so large that the pigs cannot readily consume all the grass and make it bare of any kind of vegetation. When pigs are not rung, to prevent their rooting, they will soon spoil a small enclosure, and also damage a larger one. This injury to the pasture can easily be prevented by inserting in their snouts two or three rings made of malleable wire. Care should be taken to have the ends of the wires straight, so that they will not pull out. Every farm should contain a pasture for pigs, set apart for their exclusive use. It should be large enough to afford them ample space, so that while they are feeding off one portion the grass will grow on the rest of it, to afford continuous feed. The size of the pasture must be regulated by the number of pigs to be kept. An acre is sufficient for three or four hogs, especially if the ground has been seeded with orchard-grass, which starts the quickest and furnishes more feed than most other grasses. The manure from the hogs will increase the growth. The fences should be of a substantial character, so that the pigs will not break out. An unruly hog is the hardest kind of animal to confine, hence the importance of good fences, to prevent them becoming breechy; a board fence, or a stone wall, is the best calculated for this purpose. There is no ground so well adapted for a permanent pig pasture as an orchard, and no grass so well suited to it as orchard-grass, which grows freely in the shade. In no other way can a crop be obtained so well under the apple-trees; the orchard is kept in a vigorous condition with little labour. I am not sure but the pasturing of hogs in an orchard will keep the trees in a more flourishing condition than tillage. The trees will not be bruised and the roots broken off, as when the ground is cultivated. The fine roots can come nearer the surface, and consequently feed on the richer soil than when the ground is ploughed, as they are then torn away and destroyed. Tillage is not necessary for the vigorous growth of trees, nor is it essential for bountiful yields of fruit. But for an abundant fruit harvest, richness of soil is of far more consequence.

Pigs solve the off-year problem the best of any plan I know of, by making the land so rich that a crop of fruit may be had every year. I have a small apple orchard which has not failed in an annual yield for years. During this period it has been used exclusively as a pig pasture. No manure has been put on it other than that made by the pigs. My faith in this remedy for off-years is so strong, that another apple orchard, embracing about five acres, has been prepared for a permanent pig pasture. The pigs will undoubt-

edly improve the quality of the fruit by devouring all of the apples which fall prematurely, thus destroying the worms that would injure the apples. There is no mode of treatment which will cause breeding sows to be so healthy and to bear better pigs than when allowed to feed on grass. They are not delirious or ferocious when they have their young, as frequently occurs when confined in a pen. The losses which farmers often suffer on this account would equal the cost of preparing a permanent pig pasture. When pigs are kept confined and fed entirely on grain, their profit is often a doubtful question. But fed on grass their growth can be made so cheaply that there is no question about profit in hog raising. Under the system stated above, pigs are made valuable aids on the farm in producing other beneficial results. —Col. F. D. Curtis, in *American Agriculturist*.

WOOLS OF DIFFERENT BREEDS.

The following table gives the actual clip of wool from twelve to thirteen different breeds, at the shearing in June last, on the Experimental farm belonging to the Royal Agricultural College at Cirencester, England:—

Breed of Ewes.	Weight of Fleece.		Present price of Wool.		Remarks.
	lbs.	oz.	s.	d.	
Lincoln	13	2	1	0	Long in staple, bright and silky.
Cheviot	8	6	1	0	A small-haired wool, of medium length, soft and rich.
Shropshire	7	5	1	1	Longer in staple and more lustre than other Down wools.
Border Leicester	6	13	1	0	Not so soft and silky in staple as Lincoln.
Oxford Down	5	10	1	0½	Equal to Shropshire in quality, and heavier.
Leicester	6	6	1	0	Similar to Border Leicester.
Black-faced	4	8	0	9	Coarse and long.
Dorset	5	6	1	0	Longer in staple, and not so fine as the Down.
Hampshire	5	2	1	0	A short-haired wool, very similar to Southdown, but longer in staple, and not so fine.
Herdwick	5	0	0	0	Coarse and long.
Southdown	4	5	1	0½	A short, small-haired wool.
Exmoor	5	0	0	11	A long stapled wool of moderate quality.
Cotswold	8	0	1	0	Rather coarse lustre.

The above figures represent the average of three ewes of each breed. The sheep of each lot were all fairly equal, and the treatment of all the lots during the previous winter or spring had been exactly alike. All the ewes, also, had reared one or more lambs during the summer.

It is only by an experiment of this kind, in which all the different breeds are brought together, treated alike, and dealt with at one and the same time, that we can arrive at fair comparative results. It is more than likely, however, that if the trial had been made in another district, with a soil and climate different from that of the Cotswold hills, there would have been more or less variation in the results.

MORE MUTTON-SHEEP.

The breeding time for sheep is just ahead, and flock-masters should be planning for early lambs, to meet the wants of the market next season. We need more fine-wooled sheep, more long-wools, but especially more mutton-sheep. The manufacturers can get wool to suit their purposes, if they have to import it; but good mutton for the million, if had at all, must be raised within easy reach of the local markets. There is a lamentable dearth of good mutton in the village

and rural markets, as we know from a personal experience of thirty years and more. Lamb is quite plenty in the summer months, at the retail price of twenty to twenty-five cents, and mutton in the fall months at a little less price than good beef, but the rest of the year it is hardly to be had at any price, as if it were a thing out of season, like strawberries in December. We ought to have mutton the year round, so that delicate stomachs that eschew veal in spring and fresh pork in winter, can have a change from beef and poultry to mutton-chop at their convenience. Good dog laws have been passed in some of the States, so that sheep-raising is possible, and the owner gets damages when his flock is worried by the dogs. There is improvement, but it is very slow, and there is great want of information as to the best breeds for mutton, and the best way to improve the flocks of common sheep. The pure Southdown is the mutton-sheep of all other breeds, unquestionably. Then, after this, the various other families of Downs, as the Hampshires, and other English shires, taking the names of the counties in which they are bred. A Southdown ram, running with a flock of Merinos or common sheep, will bring grades giving an excellent quality of lamb and mutton, though not equal in flavour to the purely bred. If these grades are put with a Cotswold ram, we have a sheep much increased in size, with an excellent quality of mutton. This cross gives a carcass from one-quarter to a third larger than the grades, and sometimes one-half. The lambs mature early, and are great favourites with the butcher. We have found no better cross than this in our sheep breeding. It is not necessary now to pay fancy prices for good breeding rams, either of the Southdown or Cotswolds. They are quite widely distributed, and can be had at prices within the reach of any thrifty farmer. To get the best service out of the ram, he should not be left to run loose with the flock, as is the common practice, but should be kept by himself, on generous feed, and led out when the ewes are in heat. Kept under this restraint, he will serve a larger number of ewes, and the offspring will be more vigorous. Mutton-sheep are so easily raised, and the flesh is so wholesome an article of diet, that every owner of a good grazing farm ought to cultivate them for the supply of his table and the local market. The export of mutton carcasses to England has become a large business, and cannot fail to stimulate this industry. Get more Southdown blood into your flock.—*American Agriculturist*.

Hon. Wm. Sims, secretary of the Kansas State Board of Agriculture, says of the condition of live stock in that State. "There has been an increase in all kinds of farm animals, and no adverse reports as to their condition have been received. Although diseases are mentioned as being present in some localities, they are not in epidemic form in any part of the State." He gives the number of sheep as having been 806,929 in 1881, and 1,086,662 in 1882, showing an increase of 280,380.

The English flockmaster has settled two points in British experience—first, that mutton is more profitable than wool; and second, that among English mutton consumers there is a decided preference for Down, or black-faced mutton. Tender, juicy flesh, with a fine grain and a rich flavour, ripe and yet carrying plenty of lean meat, is that which suits the English market. A combination of these qualities is found to most perfection in some of the black or gray-faced breeds or their crosses. This preference on the part of buyers is so marked that the butcher is enabled to give at least two cents per pound more for dark-faced mutton than for any of the white-faced and long-wooled sheep.

BEES AND POULTRY.

THE PLYMOUTH ROCKS.

The Plymouth Rocks are a new breed, their origin being rather a matter of dispute, but Mr. D. D. Wilson, of Seaforth, expresses the belief that they originated in a cross between a single-combed Dominique cock, and Black Java hens. Mr. Wilson says:—

"The Plymouth Rock is a good layer; it lays a large egg, with a strong, durable shell. It is a very good table fowl when it is no longer useful as a layer, and, when well cared for, comes very early to maturity."

Mr. Doel remarks of these birds:—

"The Plymouth Rock promises to be a very good fowl, but it will not suit the farmer for a number of years, as it can hardly be called a fixed breed yet. The farmer looks to have both a good fowl and a good-looking fowl. The Plymouth Rock has been a cross until late years, and it has not been bred sufficiently long or with sufficient care to make it yet an established breed, so that it may be depended upon. It will do very well to use for crossing purposes, like any other common fowl, because when fowls are once crossed, they are nothing but common fowls, although some of them make better layers than many full-bred fowls."

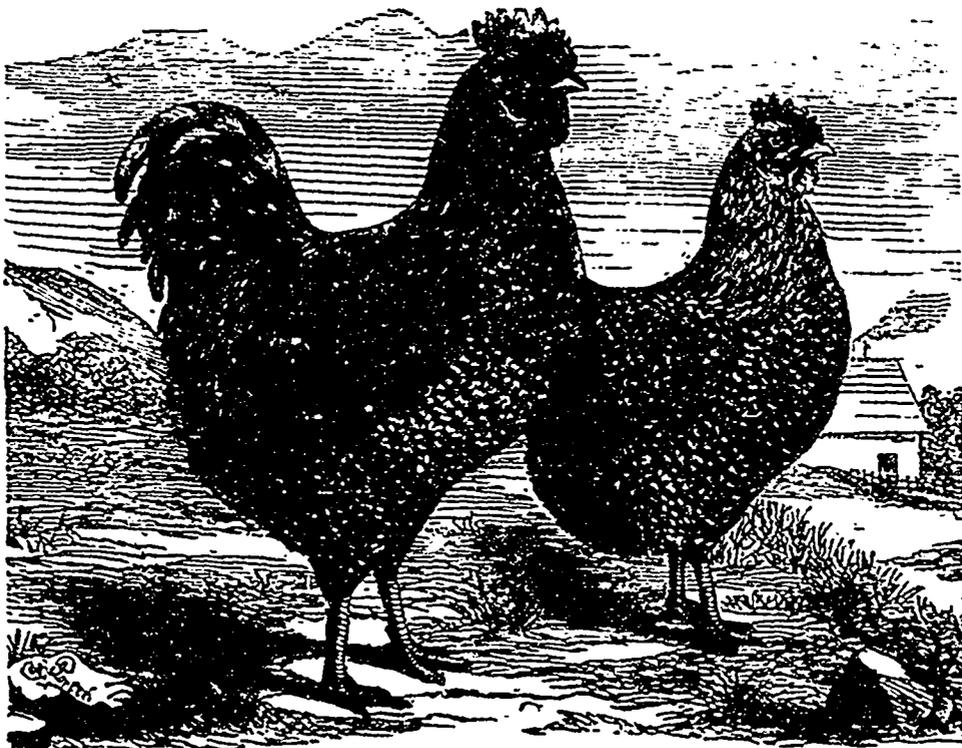
KEEPING BEES.

We often hear of people keeping bees for pleasure, and it always signifies that those who do it are not only people of a greater or less degree of cultured taste, but that the apiary is really one of the fine arts. Whether it is appreciated as such or not, it is just of that character. When we take into consideration the habits and artistic design of the busy little bee, it is no longer a wonder that its characteristics have been woven into verse, and that the scientist and artist and poet have loved to study those habits and have been free to admire its ingenuity. Believing, therefore, that we cannot cultivate refined taste too much, the business of bee-keeping becomes more valuable as we view it in this light. We frequently refer, the reader is aware, to those branches of farm industry which soften and elevate, and for the reason that they do soften and elevate recommend them most heartily. While the apiary can be made pecuniarily profitable, it must always be remembered that money is not the only profit in this world, but that whatever makes us better, more industrious, frugal and nobler, is profitable, if it never returns us a penny. Bee-keeping we believe to be of this character, if it is properly studied.—*Western Rural*.

WHAT KIND OF FOWLS?

Farmers should restock their poultry yards every two or three years, for the old breeds, being bred in-and-in, soon run out and become unprofitable. It is not every farmer, however, that can afford to buy full-blood fowls of any kind to restock the place. In order to work into pure-bred chickens, there are several modes of procedure, all very good, because very cheap. The first is to buy a couple of thoroughbred roosters, and turn them with the native hens. If the Leghorn variety is selected, the progeny will be far better layers than the old ones, partaking in a very great

degree of the excellence of the new breed. Then when the half-breeds commence to lay, sell off the old hens entirely, keeping only the half-breed pullets, also getting rid of the half-breed roosters, for the breed will not improve if they are kept. Keep the same thoroughbred roosters the second season, though it would be better to change every year. But under no circumstances should they be kept to cross on their own progeny longer than the second season. The first cross will be half-breeds; and if none but thoroughbred males are used, the second cross will be three-quarters pure blood, which for all practical purposes are equal to the thoroughbreds. If, however, after the first cross the half-breed roosters are kept, the grade will not improve, and the chicks will still only be half-breeds, and poor ones at that. Hence, it is important that none but thoroughbred males should be used. Another plan is to buy a trio of pure-bred fowls and keep them in a separate enclosure, setting the eggs under other hens as fast as laid. This will give pure-blood fowls from the start. Still another plan is to buy several settings of eggs, but this requires considerable time.



PLYMOUTH ROCKS.

As to the best breed, that depends on the circumstances. It is conceded on all hands that there is more money in eggs than in raising chickens, and if this branch of the business is followed there is no fowl that can equal the Leghorn, and there is not much difference between the Brown and the White Leghorn. They are good foragers, hunt their own living to a great extent, and are tough and hardy. It will be necessary to keep other breeds to hatch the eggs, as Leghorns will not sit.—*San Francisco Chronicle*.

SEX OF EGGS.

A correspondent of the *London Journal of Horticulture* says in reference to this question:—"Last winter an old poultry-keeper told me he could distinguish the sex in eggs. I laughed at him, and was none the less sceptical when he told me the following secret:—Eggs with the air bladder on the centre of the crown of the egg will produce cockerels; those with the bladder on one side will produce pullets. The old man was so certain of the truth of this dogma, and his poultry-yard so far confirmed it, that I determined to make experiments upon it this year. I have done so, carefully registering the egg bladder vertical or bladder on one side, rejecting every one in which it was not decidedly one or the other, as in

some it is only very slightly out of the centre. The following is the result:—Fifty-eight chickens were hatched, three are dead, eleven are yet too young to decide upon their sex. Of the remaining forty-four, every one has turned out true to the old man's theory. This, of course, may be an accidental coincidence, but I shall certainly try the experiment again."

SUGGESTIONS ON BEE-CULTURE.

Under this heading the *Chicago Herald* gives the following: There are many people who own a few colonies of bees, and seldom, if ever, realize anything from them, while with a little exertion and study they might be made a source of great pleasure and profit. In the first place, no person should ever expect to be successful with bees who is not willing to give the subject a reasonable amount of time and careful study. The most successful bee-keepers are lovers of nature and have a fondness for these little marvels of industry. Those who would be successful with bees must always be ready in the proper season to administer to their wants. Hence the neglectful, heedless and indolent are as sure to fail in apiculture as in any other calling. The inducements to bee-keeping are numerous; it affords a most pleasurable and healthful recreation for a person whose business or profession is confining.

MARKETING HONEY.

In regard to comb-honey, it is of importance to the bee-keeper, first and above all, to produce a choice article in good shape. Choice comb-honey is white and well-capped. Small frames of light, clear lumber, five to six inches square and one and one-half to two inches wide, filled with nice white comb-honey, well finished and weighing one and one-half pounds each, is perhaps the most suitable shape with which to meet the retail demand. Nest shipping cases, holding fifty or sixty pounds of the above frames of honey, will accommodate the jobbing business. Shipping cases should be cheap, neat, but strong enough to stand transportation; and the contents should be shown through glass on two sides to as much advantage as possible. Neat glass boxes, filled with nice white comb-honey, look well; but the most popular shape is, undoubtedly, a frame, as described above, without any glass. Purchasers of honey look so much at their own interest in close times like the present, that they are loth to pay for any more tare than necessary.—*Bee-Keeper's Magazine*.

It is not generally known that a few sprigs of cedar bush, mixed with hay or any kind of litter for hens' nests, will keep them entirely free from hen lice.

EVERY poultry raiser should decide what breed he prefers, and purchase a few thoroughbreds with which to cross his common stock. If the object is to sell frying chicks, get the Partridge Cochins, Plymouth Rocks, Light Bramahs, or Buff Cochins. If eggs are the object, get the Crown Leghorns or Houdans. No one who has tried one of these crosses will do without them afterwards.—*Exchange*.

CORRESPONDENCE.

WHAT KILLED THE BEES?

SIR,—I was surprised yesterday evening to find the ground in front of one of my hives strewn with dead bees, and began to think they must have found some poisonous plant, still, as there were no dead bees outside any of the other hives, could hardly accept that as a solution of the mystery, and on going a little later to look at the hive, I noticed the bees dragging out the insect I have enclosed in a small box to send to you. It appeared to have been just killed, and the bees dragging it out seemed very angry with it. Do you know the insect? and is it a bee killer? I do not see any more dead bees to-day, and there was a handful of the slaughtered yesterday when they were gathered up. I send the specimen to you, knowing you to be very wise and learned on every subject connected with agriculture, and hope in your next issue of the RURAL CANADIAN you will tell me what the insect I have sent you is, and whether it was what killed the bees, etc.—Yours respectfully,
HENRIETTA F. BULLER.
Campbellford, Ontario, July 31st.

You may recommend Tincture of Myrrh as being an excellent thing to apply for either bee or wasp stings. I saw it recommended in the *American Bee Journal*, and we have given it a fair trial, and find it the best remedy we have tried so far.
H. F. B.

We are not sufficiently versed in entomology to identify the dead insect sent with the foregoing letter, but inasmuch as it is not figured or described in any agricultural book on our shelves, as a bee-killing insect, we are inclined to think it is not the perpetrator of the slaughter in question. The probability is that attempted robbing is the real explanation of the case, although July 31st is rather early in the season for that to occur. Mrs. or Miss B. is probably a sufficiently experienced beekeeper to know that, when there are signs of robbing, the entrance to the attacked hive should be contracted so as to enable the bees to defend themselves. Our fair correspondent will excuse our dubious mode of alluding to her personality. It is a pity there is not a common title for ladies, both married and single, as is the case with gentlemen, who may be addressed or referred to as "Mr." without regard to their condition in a matrimonial point of view. Lady correspondents will oblige us by indicating whether Mrs. or Miss is their proper title, when we have occasion to reply to their communications. As we expect to be in the United States with the Canadian Press excursion shortly, we purpose forwarding this insect specimen to Prof. Cook, of the Michigan Agricultural College, who is at once an accomplished entomologist and a skilful beekeeper. Any information obtained from him will be duly published in a future issue of the RURAL CANADIAN.

The steam threshers of Cherry Grove have struck for higher wages. They want an advance from \$10 to \$12 per day. The farmers say that they will employ the old reliable horse power before they satisfy their demands.

The Central exhibit on of the united counties of Victoria, Peterborough, Durham and Northumberland is to be held this year in Cobourg. The exhibition opens on September 26th, and will continue for the two following days.

MR. DONALD ROBINSON has sold his farm, lot 3, concession 12, Tuckersmith, to Mr. Henry Ayer, from near St. Mary's, for the handsome sum of \$8,000. The farm contains 130 acres, and is an excellent property. The new proprietor takes possession on the 20th October.

THE DAIRY.

PRECAUTIONS AGAINST DROUGHT.

A prudent business man eliminates from his business every possible element of uncertainty. He not only secures his capital and investments against loss, but he makes sure that his income shall not fail of being received. Nothing is trusted to chance that can be avoided. He will leave open or unguarded no avenue liable to lead to loss. He would rather pay insurance where there is but one chance in a hundred for him to lose than to take that chance.

A prudent dairyman should be as cautious. He should insure not only his buildings and other combustible property, but he should effect an insurance on his annual income as well. It happens that unless special precautions are taken, the income of a dairyman is liable to great and frequent fluctuations, but it runs very evenly when properly regulated. A dairyman is said to be a manufacturer, and cattle food his raw material. Milk is his manufactured product, and cows are his machines. They are compound machines, combining both motive power and executive or mechanical apparatus. When properly supplied with material, they run with all the regularity and certainty of any other machines, but when out of supplies or scantily furnished, both power and product at once diminish.

One of the misfortunes of dairying is that every section is liable every few years to be afflicted with a drought that stops the growth of grass and cuts off the necessary supply, from those especially who depend wholly on grazing; and here is where the security of insurance discloses its importance and merits recognition, but often fails to receive it. Men seem strangely indifferent and dull in appreciating the liabilities of their situation, even after repeated losses have been endured. A man whose house stands but one chance in a thousand of being annually burned will not allow it to go a day without being insured, while the income from his dairy, which stands about one chance out of five of being cut down every year, will be allowed to run indefinitely without making any effort to secure himself against oft-recurring losses. Where scholars are so inapt and tuition expensive, experience may be said to keep a dear school.

The indifference seems all the more strange since it is so easy to secure one's self against such losses by planting every year a piece of fodder corn, or other green crop, which will be sure to withstand drought and bridge over a dry time if it comes, but which, if not wanted for such an emergency, will pay more than its cost to lay by for winter use.

The folly of attempting to go on, year after year, risking the profits of a whole year on the uncertainty of the weather, was well illustrated last winter on the plains in the west. There is a large extent of territory on which cattle can ordinarily squeeze through the winter without foddering. But every few years an unusually snowy winter occurs, and snow covers the ground so long that the stock perishes if not provided for. Last winter was one of this kind, and it swept off hundreds of thousands of cattle by starvation, and millions of dollars were lost which might have been saved by a little precaution in collecting fodder, which would have made grazing a sure and lucrative business. It is the boast of civilization and intelligence that they can control the very elements and mould them to their use; but this risking everything on a turn in the weather, whether on the plains or on a dairy farm, is in the end a costly way of farming, and seems a sort of reversion from the prudence and forecast of civilization

back to the uncertainties incident to savage and barbaric life.

These remarks have been suggested by frequent notices in the papers of localities in which the crop of butter or cheese is now being seriously out short by prolonged dry weather—a circumstance which seems to indicate want of common prudence, we may almost say inexcusable neglect, in failing to provide suitable food for the cows to meet a common emergency, and one to which dairy stock all over the country are liable. It is a good time now for those who are suffering by such needless losses to consider how easily all their losses might have been prevented, and, when they do so, it is to be hoped they will frankly take the blame home where it belongs, and not wickedly charge it to Providence.—*Professor L. B. Arnold, in Rural New Yorker.*

ANNATTO.

ARTIFICIAL COLOURING FOR BUTTER AND CHEESE.

The culture of the plant producing the colouring matter known as annatto is chiefly carried on in the French colonies of Guadeloupe and Cayenne, also in some parts of South America. It is a small evergreen tree, growing ten to fifteen feet high; the leaves are heart-shaped, smooth and shining; flowers in a tapering panicle, pale pink; capsule two-valved, prickly on the outside; the fruit is like a chestnut, and contains a certain number of seeds smaller than peas. These seeds are covered with a soft, viscous, waxen pulp or pellicle of beautiful vermilion colour, and this latter is the substance known as annatto.

The annatto is separated from the seed by several different processes, such as washing, steaming and fermentation. The common mode in which it is obtained is by pouring hot water over the pulp and seeds, and leaving them to macerate, finally separating them by pounding with a wooden pestle. The seeds are removed by straining the mass through a sieve. The pulp being allowed to settle, the water is poured off gently, the pulp placed in shallow vessels, in which it is gradually dried in the shade. After acquiring a proper consistence it is made into cylindrical rolls or balls. This roll annatto is largely used for colouring cheese and butter in the British and Continental dairies.

Much of the superior American butter colour has more or less annatto in its composition. Annatto, when genuine, neither affects the taste or smell of the cheese or butter to which it may be applied. It is entirely harmless, the Spanish Americans mixing it with their chocolate for producing a beautiful tint. The Indians in the tropical climes employ the leaves and roots in cooking to increase the flavour and give a saffron colour. Mixed with lemon juice and gum it forms the crimson paint with which the Indians adorn their bodies.

Colouring cheese with annatto is a very old practice among English and Dutch as well as American dairymen. At first it was only used by mixing with lard for rubbing on the crumb, afterwards it was dissolved in a weak solution of potash and mixed with the milk at the time rennet was applied. Years ago no dairyman thought of colouring butter, nor would such an article have been easy of sale. Now, since public taste and fashion demand it, nearly all gilt-edge butter is artificially coloured, and especially is this true during the winter months. To annatto are we largely indebted for June butter at Christmas. In fact the eye must be pleased in this respect as well as the taste, and if the colouring matter be as simple and as harmless as annatto, this adornment of a market product is unobjectionable.

HOME CIRCLE.

A GRAIN OF COMMON SENSE AND A COOK BOOK.

Jenny was home on the long vacation; and it so fell out one day that there was no one else to get the family dinner. Mother had gone to the village, and the girl had gone to her own home unexpectedly. Everybody thought how lucky it was that Jenny was at home. With a profound conviction of her own ability to do anything she undertook, Jenny proceeded to her task.

"Are you sure you can make out, daughter?" asked father a little anxiously, putting his head in at the door, just before he went to the field. Jenny gave her head a toss at this implied reflection on her ability, and answered with decision:

"Any person, father, with a grain of common sense and a cook book, can get a dinner."

So father walked away tolerably well satisfied, though, perhaps, with a misgiving or two, as he knew cooking was a new art with his learned daughter, on whom he had lavished a great deal of money in the way of an education.

The coast being clear, Jenny proceeded with enthusiasm to prepare her fine piece of veal to roast. She looked over her cook book for the most approved recipe, and prepared it according to science. And it did look appetizing as it went into the oven so nicely stewered and tucked up and seasoned. "Baste it every fifteen minutes," the directions said, and Jenny went by the clock in all her operations. The vegetables were all nicely prepared and set on to cook, at the orthodox moments, and then went into the dining-room and set her table with most exact care and neatness. The pies were all ready for dessert, so she had no anxiety on that score, and there was plenty of bread. But as the hour for dinner crept steadily on, the results were not quite satisfactory. She basted and basted the veal, but it did not progress favourably. She turned to her cook book again, a little flurried and worried, but no directions could she find, but with regard to basting and serving. It would not brown for some reason. She did not bother with the vegetables, for they needed no attention after being put on, and she had given them a full hour to cook. All her anxieties were centred on that obstinate veal. The last quarter of an hour was up, and the punctual harvesters came trooping in, hungry and expectant. Jenny was about ready to cry. All her high notions of woman's ability to do whatever she undertook, so diligently instilled into her mind at school, had taken wing.

"Edward, what shall I do?" she asked her brother privately, as she took him by the sleeve and pulled him into the pantry. "What is the matter with my dinner?"

Edward coolly walked out and lifted a kettle from the stove and looked in. There was not a spark of fire in that stove! Then Jenny cried, and the more the rest laughed the more she cried. But Edward was a good brother, and handy. He had been to the war, and learned a good many domestic arts over the camp fire. He flew around and built a fire in three minutes, sliced some ham and had it on frying, finding time to say comfortingly, "Don't cry, sis; we'll get out of this scrape all right."

Then Jenny caught his spirit, and fried up a dish of cold potatoes, and cooked some eggs and made a pot of coffee as soon as the water boiled; and with plenty of sliced tomatoes, and pie and bread and butter, they made out to keep off starvation until night, when the veal was "done brown."

Father used sometimes to say, with a little twinkle in his gray eyes, that he rather thought, "with a grain of common sense and a cook book," his daughter would make a cook yet.—*Aunt Olive, in Housekeeper.*

DAYS DROPPED OUT.

Fortunate indeed are the people who know nothing, by experience, of days dropped, like beads dropped from a string, out of the swift activities of life. Some of us know enough of them. The world wears the same bright face it had on yesterday. The bees swing homeward heavily laden. The soft wind sighs through the leaves, and the shadows chase each other over the grass. All is full of grace and beauty. Summer reigns, and the earth is robed in bridal garments. But what is it all to her who feels so weary and discouraged that she cannot lift her heart up from the darkness of despondency? She finds herself wishing that a gray sky and gusts of rain were here, to sympathize with her mood, which is mocked by so much bloom and brightness.

In the city, the long, panoramic streets are never so showy, never so attractive, as at this season. The windows fairly shimmer with the display of rainbow-hued ribbons. Fabrics of every description hang in rich folds, to tempt the gazer's eye. Gaily-dressed ladies and elegant gentlemen pass you on the promenade. Everybody is happy and busy, eager and glad. Everybody but yourself, and you are aware of a discordance; you are out of harmony with the spirit of universal good-fellowship which seems to be abroad. All you care for is to get through the listless days, and feel that night has brought you release from care and the need of being agreeable.

It is a day dropped out. And yet, dear friend, conscious of having ever nursed and petted the dismal and dumpish and unworthy temper of mind of which such gloomy thoughts are born, do not entertain it any longer with complacency. There is nothing brave in being morbid. There is nothing heroic in self-pity. Rather come out of yourself. Look about for what is to be done, and take hold of the work which comes first to your hand. If you can find no work—if it seems to be your lot in life to stand aside and wait, then try to wait with patience on the Lord. An hour of joy you know not may be winging its way toward you. Think of the happy days you have already had. Hope for happy days to come, and trample on the evil mood which causes you to lose a day.

There are dropped-out days which, however, are very

different from these. They are caused by sheer physical exhaustion; by the despotism of headache, by worn-out nerves, and fever in the blood. How courageous are some good women, who every week or two are obliged to lie by and let illness do its will with them! One or two such we have known, whose voices are always sweet, whose smiles were ever cheery, and whose Christian character was emphasized by rare unselfishness and generous love. Yet, every few days they had to spend long hours in darkened rooms, fighting with pain, and coming forth after the conflict with pale faces and hollow eyes. How thankful should we be who have no such record of dropped-out days.—*Christian at Work.*

MORNING GLORIES.

They said, "Don't plant them, mother, they're so common and so poor,"
But of seeds I had no other, so I dropped them by the door;
And they soon were brightly growing in the rich and teeming soil,
Stretching upward, upward, upward, to reward me for my toil.

They grew all o'er the casement, and they wreathed around the door,
All about the chamber windows, upward, upward, evermore;
And each dawn in glowing beauty, glistening in the early dew,
Is the house all wreathed in splendour, every morning bright and new.

What if they close at midday, 'tis because their work is done,
And they shut their crimson petals from the kisses of the sun,
Teaching every day their lesson to my weary, panting soul,
To be faithful in well-doing, stretching upward for the goal.

Sending out the climbing tendrils, trusting God for strength and power,
To support, and aid and comfort, in the trying day and hour,
Never spurn the thing that's common, nor call these home flowers poor,
For each hath a holy mission, like my Glory o'er the door.

THE QUEEN OF PRUSSIA'S RIDE.

At the battle of Jena, when the Prussian army were routed, the Queen, mounted on a superb charger, remained on the field attended by three or four of her escort. A band of hussars seeing her, rushed forward at full gallop, and with drawn swords dispersed the little group, and pursued her all the way to Weimar. Had not the horse which Her Majesty rode possessed the fleetness of a stag, the fair Queen would infallibly have been captured.

Fair Queen, away! To thy charger speak—
A band of hussars thy capture seek.
Oh, haste! escape! they are riding this way.
Speak—speak to thy charger without delay;
They're nigh.

Behold! They come at a break-neck pace—
A smile triumphant illumines each face.
Queen of the Prussians, now for a race—
To Weimar for safety—fly!

She turned, and her steed with a furious dash—
Over the field like the lightning flash—
Fled.

Away, like an arrow from steel cross-bow,
Over hill and dale in the sun's fierce glow,
The Queen and her enemies thundering go—
On toward Weimar they sped.

The royal courser is swift and brave,
And his royal rider he strives to save—
But no!

"Vive l'Empereur!" rings sharp and clear;
She turns and is startled to see them so near,
Then softly speaks in her charger's ear,
And away he bounds like a roe.

He speeds as tho' on the wings of the wind,
The Queen's pursuers are left behind.
No more

She fears, tho' each trooper grasps his reins,
Stands up in his stirrups, strikes spurs, and strains,
For ride as they may, her steed still gains,
And Weimar is just before.

Safe! The clatter now fainter grows;
She sees in the distance her labouring foes.
The gates of the fortress stand open wide
To welcome the German nation's bride

So dear.
With gallop and dash, into Weimar she goes,
And the gates at once on her enemies close.
Give thanks, give thanks! She is safe with those
Who hail her with cheer on cheer!

The above spirited poem, from "St Nicholas" for July, is well adapted for declamation, and we advise the boys to learn it for that purpose.

THE POISON WE DRINK.

A retired wholesale liquor-dealer recently said to an interviewer from the *N. Y. Times*:

More than two-thirds of the stuff sold for brandy in this country is the meanest kind of poison. It is manufactured from an oil of cognac. In most of the gin sold there will be found oil of vitriol, oil of turpentine, oil of almonds,

sulphuric ether, and extract of grains of paradise. You can purchase oils and essences from which "whiskey of any age" can be produced. This style of whiskey when tested will show sulphuric acid, caustic potassa, benzine, and nux vomica and other poisons. This is the sort of stuff that bores into the coatings of the stomach and creates ulcers. In porter you will find opium, henbane, capsicum, cocculus indicus, copperas, tobacco, and sulphuric acid. In beer,—alum, opium, nux vomica, green copperas, vitriol, sub-carbonate of potash, and jalap are used. Cocculus indicus is used largely in cheap beer. Three grains will produce nausea and prostration; ten grains will throw a strong dog into convulsions. Fox-glove and henbane are used for the same purposes as cocculus indicus. Oil of vitriol is used to increase the heating qualities of liquor, wormwood is used for its bitter and stimulating qualities, green copperas gives porter a frothy "head."

In astringent wines you find alum, Brazil wood, oak sawdust, lead, and copperas. Sugar of lead and arsenic are also used in wine. In pale sherry, sulphuric acid, prussic acid, and alum are among the "harmless" ingredients used to give colour and the appearance of age.

WOMAN'S INFLUENCE ON SOCIAL LIFE.

Men, as a rule, are attracted by the beautiful face, but it is an internal beauty of character by which a woman can exert the greatest amount of influence. A true-minded man, though first enamoured by the glare of personal beauty, will soon feel the hollowness of its charms when he discovers the lack of beauty in the mind. Inestimably great is the influence that a sweet-minded woman may wield over all around her. It is to her that friends would come in seasons of sorrow and sickness for help and comfort. One soothing touch of her kindly hand would work wonders in the feverish child; a few words let fall from her lips in the ear of a sorrowing sister would do much to raise the load of grief that is bowing its victim in anguish to the dust.

The husband comes home worn out with the pressure of business, and feeling irritable with the world in general, but when he enters the cosy sitting-room and sees the blaze of the bright fire, his slippers placed by loving hands in readiness, and meets his wife's smiling face, he succumbs at once to the soothing influence which acts as the balm of God to his wounded spirits, that are wearied with combating the stern realities of life.

The rough school-boy flies in a rage from the haunts of his companions to find solace in his mother's smile; the little one, full of grief with its own large trouble, finds a heaven of rest in its mother's bosom; and so one might go on with instance after instance of the influence that a sweet-minded woman has in the social life with which she is connected.—*St. James' Magazine.*

IS THERE WATER ON THE MOON?

In a recent communication, Mr. Helmuth Daeberg, of Berlin, presents a new theory of the moon, and argues the possibility of its being inhabited on the farther side. It is well known that the moon always presents the same face to the earth. Because this side of the moon is an airless and waterless desert, we are not justified, Mr. Daeberg thinks, in assuming that the farther side is like it. Since the moon does not revolve so as to change the side presented to the earth, and since the attraction of the earth for the moon is very great, the heavier side, if there is any, must be turned this way. Supposing the moon to possess air and water, these lighter and more fluent elements of her composition would of necessity lay on the farther side. In the absence of any centrifugal force due to rotation on her own axis, the only centrifugal force acting upon the moon must be that resulting from the moon's motion round the earth. This would tend still more to throw the moon's air and water to the "out"-side with respect to the earth. For a practical illustration of this view, Mr. Daeberg suggests a ball swinging in a circle by means of a cord. The ball, like the moon, will always turn the same side to the centre of evolution; and if it be in any liquid, the liquid will be rapidly accumulated on the opposite or outer side. Hence the possibility of water, air, and life on the moon, around the shores of a central lunar sea, on the side always turned away from us.—*American Ship.*

WEIGHING THE EARTH.

One would scarcely think that the world could be weighed in scales, like a package of merchandise; but Herr von Jolly, of Munich, has done so, and finds it 5,692 times as heavy as a body of water of the same size, or about half as heavy as if it was of solid lead. He placed his balance in the top of a high tower, and from each of the scales, suspended, by means of a wire, a second scale at the foot of the tower. Two bodies which would balance in the upper scales were out of balance when one was removed to the lower scale, because the latter was nearer the centre of the earth. By comparing this difference with the difference caused by a large ball of lead (1 metre in diameter) in close proximity to the lower scale, he obtained an equation which, with the known size of the earth, gave the density of the latter as above stated.—*Eastern Record.*

A CAMEL'S KICK.

The camel's kick is a study. As it stands demurely chewing the cud, and gazing abstractedly at some totally different far-away object, up goes a hind leg, drawn close into the body, with the foot pointing out, a short pause, and out it flies with an action like the piston and connecting-rod of a steam engine, showing a judgment of distance and direction that would lead you to suppose the leg gifted with perception of its own, independent of the animal's proper senses. I have seen a heavy man fired several yards into a dense crowd by the kick of a camel, and picked up insensible.—*My Journey to Medina, by Keane.*

YOUNG CANADA.

FIVE LITTLE CHICKENS.

Said the first little chicken,
With a queer little squirm.
"O I wish I could find
A fat little worm!"

Said the next little chicken,
With an odd little shrug:
"O I wish I could find
A fat little bug!"

Said the third little chicken,
With a sharp little squeal;
"O I wish I could find
Some nice yellow meal!"

Said a fourth little chicken,
With a small sigh of grief:
"O I wish I could find
A green little leaf!"

Said the fifth little chicken,
With a faint little moan:
"O I wish I could find
A wee gravel stone!"

"Now, see here," said the mother,
From the green garden patch,
"If you want any breakfast,
You just come and scratch!"

BOYS WANTED.

Boys of spirit, boys of will,
Boys of muscle, brain and power,
Fit to cope with anything—
These are wanted every hour.

Not the weak and whining drones,
That all trouble magnify;
Not the watchword of "I can't,"
But the noble one, "I'll try."

Do what'er you have to do
With a true and earnest zeal;
Bend your sinews to the task,
Put your shoulder to the wheel.

Though your duty may be hard,
Look not on it as an ill;
If it be an honest task,
Do it with an honest will.

At the anvil or the farm,
Whosoever you may be—
From your future efforts, boys,
Comes a nation's destiny.

THE BOY WHO DID HIS BEST.

He is doing his best, that boy of sixteen, stretched out before a bright fire in an old tanning-shed. Reclining upon an old sheep-skin, with a book in hand, he is acquiring knowledge as truly as if at some favoured institution, with all the convenience and facility for learning.

He is doing his best, too—this same boy, Claude—as he helps his master prepare the sheep and lambs' skin for dyeing, so that they can be made into leather. He is doing his best by obedience and by respectful conduct to his master, in endeavours to do his work well, although he often makes mistakes, as his work is not so well suited to his tastes as the study of Greek and Latin.

"See there, young rascal!" calls out Gaspard Beaurais, the tanner. "See how you are mixing up the wools!" For Claude's wits were "wool-gathering," sure enough; but he was not sorting the wool aright.

"Aye, aye, sir," replied the apprentice; "but I will fix them all right." And he quickly sets to work to repair his mistake.

"He'll never make a tanner," said Gaspard to his wife, "and I fear he'll never be able to earn his bread."

"Sure enough," replied the wife. "And yet he's good and obedient, and never gives back a word to all your scolding."

And in after years, when the aged couple received handsome presents from the distin-

guished man who had been their apprentice, they thought of these words.

One evening there came a stormy, boisterous wind, and the little stream in which the tanner was wont to wash the wool upon the skins was swollen to a torrent. To attempt to cross it by the ford at such a time would render one liable to be carried down the stream and be dashed to pieces on the rocks.

"We must get all the skins under cover," said Gaspard to his apprentice. "A storm is at hand."

The task was finished, and the tanner was about to return to his cot and Claude to his shed, when the boy exclaimed:

"Surely I heard a cry. Some one is trying to cross the ford!" And in an instant he darted toward the river, followed by his master, carrying the lantern. Some villagers were already there; and a strong rope was tied around the waist of the brave boy, who was about to plunge into the stream. For a man on horseback was seen coming down the river, both rider and horse much exhausted. Claude succeeded in grasping the rein; and the strong hands of his master that held the rope drew him to the shore, and all were saved.

Soon after, the stranger sat by the tanner's cheerful fire, having quite won the hearts of the good man and his wife by his kind and courteous manners.

"What can I do for your brave son?" he asked.

"He's none of ours, and not much credit will he be to any one, we fear. He wastes too much time over useless books," was the bluff reply of the honest tanner, who could not see what possible use Claude's studies would be to him.

"May I see the books?" asked the stranger.

Claude being called, brought the books of Greek and Latin classics, and stood with downcast face, expecting to be rebuked. But instead, he received words of commendation from the gentleman, who, after some talk and questions, was astonished at the knowledge the boy had acquired.

A few months later, instead of the old tanning-shed for a study, Claude might be seen with his books in a handsome mansion in Paris, the house of M. de Vallais, whose life he had saved, and who had become his friend and benefactor. The boy felt that he had only done his duty, and that he was receiving much in return; and he determined to make every effort to meet the expectations of his patron.

He succeeded. Claude Copperonier, the boy who did his best, became the most distinguished Greek and Latin scholar of his time. At the age of twenty-five he filled the chair of Greek professor in the Royal College of Paris. More than this, he became a man who feared God, and was much beloved for his goodness and amiable qualities.

He never forgot his former master and wife. Their old age was cheered by many tokens of remembrance in the form of substantial gifts from the man who, when a boy, studied so diligently by the fire of their old shed, but who "would never make a tanner."

—Well-Spring.

BE PUNCTUAL.

Captain Jones was the owner of a fine sail-boat, and, being fond of boys, he arranged one Saturday afternoon to take several of them out on a boating excursion. At the time appointed all of them were there but one—John Gay, a boy who was noted for his want of promptness and punctuality. The other boys, being ready, were anxious at once to enter the boat, and as John did not make his appearance, they urged Captain Jones not to wait longer.

"Hadn't you better wait for John?" asked the captain. "He would not like to be left."

"How long have we waited already?" asked Edwin Ross.

"Nearly half an hour," said another, "and I would not wait any longer."

"No," said Will Leslie, who was a leader among the boys, "I would not wait any longer. There's no use waiting for John; he never was ready for anything. He's late at his breakfast, late at dinner, late going to bed, late in getting up—late in everything. All his mother can do never gets him started for school in season. If he is sent anywhere, he never goes in time. He was going to his uncle's last week by the railroad, but was so late in starting for the train that it went without him, and he was left behind. He's always late, and I'm for not being bothered for him any more. Come along!"

And the boys did come, and the captain with them.

Some ten or fifteen minutes afterward down came John to the place of meeting, in a great hurry, and terribly disappointed to find that they had all gone, and that the boat was almost out of sight in the distance.

"Dear me!" he said; "it's too bad. I do think it's too mean that nobody ever will wait for me."

There are too many people like John Gay. They lose in both pleasure and privilege, as well as in duty, by not being punctual. Washington once said to his secretary, who was behind time at an appointment, and who, by way of excuse, said his watch was not right, "You must get another watch, or I must get another secretary." And at a committee meeting, where one of its eight members was fifteen minutes behind time, a sensible Quaker said, "Friend, I am sorry thee should have wasted thine own quarter of an hour, but, what is worse, thee has wasted the time of every one of us seven—in all, two full hours; and this thee has no right to do."

When Alexander was asked how it was that he conquered the world, he replied, "By not delaying;" and the Spanish proverb says, "The road of By-and-by leads to the town of Never." And we generally find that to be always intending is never doing. Prompt beginning is half-finishing.

Begin early to be prompt and punctual in everything, and soon you will form the habit of punctuality, and this will be of benefit to yourself and of comfort to others as long as you live. Be prompt in obeying your parents, in learning your lessons, in going to school and to church and to Sunday school—prompt and punctual in doing whatever you have to do—and it will aid you to success in everything.

Scientific and Useful.

JELLY CAKE.—Large tea cup white sugar; one teaspoonful butter; one cup of cream; two teaspoonfuls cream of tartar; one teaspoonful of soda; whites of two eggs.

GLOSS ON LINEN.—Mix a little powdered borax in hot water and let it cool; then pour it, with a few drops of turpentine, into the water. Put the starched things through a machine or mangle, and iron immediately.

PERUVIAN SYRUP has cured thousands who were suffering from Dyspepsia, Debility, Liver Complaint, Boils, Humours, Female Complaints, etc. Pamphlets free to any address. Seth W. Fowle & Son, Boston. Sold by dealers generally.

TOMATO SOUP.—Six tomatoes peeled and sliced; pour over them one quart of boiling water, half teaspoonful of soda; when it stops foaming, add one pint of sweet milk and season as for oysters, with butter, pepper, salt, and a little rolled cracker. Serve as soon as it boils.

TO BOIL SALT BEEF.—Put it over the fire in cold water, and let it come to a boil slowly. Skim it well. If very salt, turn off this water and add fresh; then let it simmer or boil slowly for four hours, if a large piece. That which is not eaten hot should have a weight put upon it to press it while cooling; this will make it cut smooth when cold.

CRANBERRY ROLL.—Stew a quart of cranberries in just water enough to keep them from burning. Make very sweet, strain and cool. Make a paste, and when the cranberry is cold spread it on the paste an inch thick. Roll it, tie it close in a flannel cloth. boil two hours and serve with a sweet sauce. Stewed apples or other fruit may be used in the same way.

A DANISH PUDDING.—Squeeze three quarts of currants through a cloth, and add water until it makes four quarts of juice. Put this over the fire, with two pounds of sugar; cinnamon and lemon to the taste; skim it well, and, when boiling, add a scant pound of the finest sago. As soon as the latter is transparent and jellies, pour it into moulds. When cold serve with cream.

RICE CHICKEN PIE.—Cover the bottom of a pudding-dish with slices of boiled ham; cut up a broiled chicken, and nearly fill the dish; pour in gravy or melted butter to fill the dish; add chopped onions if you like, or a little curry powder, which is better; then add boiled rice to fill all the interstices and to cover the top thick. Bake it for one-half or three-quarters of an hour.

MUTTON HARICOT.—Lay a number of chops in a hot pan with a very little butter or dripping, until they are brown, turning them so as to brown both sides. This will only take a few minutes, as you do not want to cook them through. Drop them into boiling water deep enough to cover them, slice two carrots and throw in; cover closely. While stewing, brown half a sliced onion in the pan the chops were fried in. Add this to the stew, with pepper and salt.

POTATO PUFF.—Potato puff may be made with yesterday's cold mashed potatoes. Take three cups of potatoes, two tablespoonfuls of butter, six tablespoonfuls of cream. Melt the butter, add the cream, and then the potatoes. Turn the mixture into a bowl, and beat till very light. Add the yolks of two eggs, then the beaten whites. Pat in a baking dish and set in an oven hot enough to brown it quickly. Or you may drop the mixture on a sheet of iron in spoonfuls, and get more brown crust.

TREATING RANCID BUTTER.—A way that has never been known to fail is to cut the butter into pieces about a pound each, wrap each piece separately in clean white cloth, then enclose all in a nice white bag or large cloth, and bury the whole a foot or more in the ground, the deeper the better. After a week or two, according to the rancidness of the butter, unearth, wash carefully, re-salt, and it will be found to be sweet and wholesome. I have so treated butter which was too rancid for cooking, and when put upon the table after such treatment, it could not be told from fresh butter.

VEAL loaf furnishes a good relish for supper. Take two pounds of veal and chop it very fine, about as if for mince-meat; two coffee cups of fine bread crumbs, two eggs well beaten, a teaspoonful of salt with black pepper mixed with it, a little sifted sage, or any other leaf you choose, and a lump of butter to suit your taste. Beat these all together in the chopping-bowl, and put in an earthen pudding-dish, well-buttered; press it down very hard. Bake in a hot oven for an hour. Let it get perfectly cold before you attempt to cut it; then it will be possible to cut it in thin slices.

CAULIFLOWER AND TOMATOES.—Pick

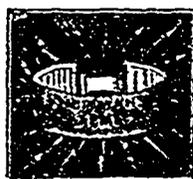
out all the green leaves from a cauliflower and cut off the stalk close. Put it stalk upward into a saucepan full of boiling water, with salt and a piece of butter; let it boil (not too fast) till done. Take it up carefully and put it on a sieve to drain. Mix a pinch of flour and a piece of butter in a saucepan; add a bottle of French tomato sauce, and pepper and salt to taste. Mix well, and when the sauce is quite hot stir in a yolk of egg beaten up with a little cold water, and strained. Pour the sauce on a dish, and place the cauliflower in the middle.

IRONING LACES, MUSLINS, AND SILKS.—Fine soft articles, such as need no polishing, as lace and muslins, should be ironed on a soft ironing-blanket with a soft, fine, ironing-sheet. All such articles, after a careful sprinkling, must be rolled up smoothly, and unrolled one at a time. Laces, of course, are to be carefully brought into shape, and all the edge or purling pulled out like new. In ironing silks, cover them over with paper or fine cotton, and use only a moderately heated iron, taking care that the iron does not touch the silk at all, or it will make the silk look glossy, and show that it has been ironed. Any white article, if scorched slightly, can be in part restored, so far as looks go; but any scorching injures the fabric.

HINTS ABOUT FROSTING.—A little cream of tartar mixed with the sugar of which you are to make boiled frosting will improve the frosting greatly; it will harden at once, and you will be spared all anxiety in the matter. A good rule for making this kind of frosting is this: Two cups and a half of sugar, two-thirds of a cup of water; boil until it candies—that is, until it will drop from the spoon in threads, or will harden in cold water. Then add the whites of three eggs beaten to a stiff froth; stir it briskly for a few minutes, till it is perfectly smooth, then add the juice of one lemon. This quantity will be enough to put between the layers of medium-sized cake, and will also frost the top and sides. If you wish to frost the top and sides only, one cup of sugar and one egg will be enough.

CLEAN OUT YOUR CELLARS.—A young farmer, in the Boston Journal, gives this bit of sensible advice to housekeepers on the farm: "Take one day down cellar to throw out and carry away all dirt, rotten wood, decaying vegetables and other accumulations" that have gathered there; brush down cobwebs, and with a bucket of lime give the walls and ceiling a good coat of whitewash. No matter if you don't understand the business; no matter if you have not got a white-wash brush; take an old broom that the good wife has worn out, and spread it on thick and strong. It will sweeten up the air in the cellar, the parlour and the bed chambers (if your cellar is like the ordinary farm-house cellars), and it may save your family from the affliction of fevers, diphtheria and doctors. While the lime is about, you might as well give the inside of the hen-house a coat of it. It will be a good thing for the fowls if you do."

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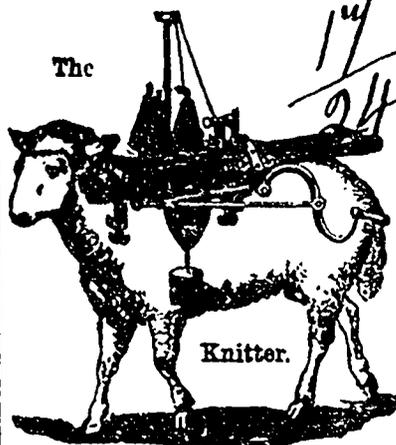
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TORONTO WHOLESALE MARKETS.

OFFICE RURAL CANADIAN, Toronto, Aug. 29th, 1882.

CATTLE.—Receipts have been very small indeed, and the tendency of prices has been upwards, closing at a rise of about 25c.; but as the shipping demand has been very slack, it is by no means certain that this will be maintained. Extra choice beefs for export have stood at \$6 to \$6.25; fair to good at \$5.25 to \$5.50; common at \$4 to \$4.25, and inferior at \$3 to \$3.50. Calves.—Picked, averaging not under 100 lbs., have been steady at \$6 to \$8; and second class \$4.00 to \$5.00, with offerings small. Sheep have been in good demand, and firm; heavy weights for shipment have been worth \$5, and average qualities from \$4 to \$4.50 per cental. Lambs scarce and wanted at former prices; first class have been worth \$4.50 to \$5, and inferior \$3 to \$4 per cental. Hogs have been scarce; now firmer, and wanted at \$7 to \$7.50 per cental.

FLOUR AND MEAL.—Very little doing in flour. Superior extra brought \$5 35 ten days ago, and there have been no different quotations since. Extra has been nominal at \$5.30, and other grades not offered. Bran scarce and rather firmer at \$13 to \$13.25 for car lots. Oatmeal very scarce; car lots have been wanted at \$5.50, but not offered; and small lots have risen to \$6 to \$6.25.

GRAIN.—The Mark Lane Express, in its review of the grain trade during the week, says:—"The weather has been autumnal. Heavy rainfalls were general on Tuesday, but it was not sufficient to damage the crops materially. The outstanding crops, however, are endangered. English wheat at provincial markets has declined 1s. to 3s. In London, for finest samples, a slight concession has been made. Millers were not eager buyers. The new crop of foreign wheat remains almost at a deadlock. The off coast supply has been liberal. Many cargoes have been ordered to ports of discharge. There were twenty-five arrivals; ten cargoes were sold and fifteen withdrawn. The floating stock has increased 352,000 quarters compared with that of the corresponding period of 1881. Maize was rather dearer. Sales of English wheat during the week were 1,274 qrs. at 47s. 10d. against 12,671 qrs. at 51s. 10d. for the corresponding period of last year." The Toronto Wheat market has been very quiet, with little or no change in prices. No. 2 spring, nominal at \$1.19 to 1.20. No. 2 fall at \$1.15. There are no car lots of Barley yet offering. Oats still remain at 60c. for old Western.

PROVISIONS.—The market has generally been quiet. Butter has been less in demand for shipment, and shippers have not been inclined to pay over 16c. to 16 1/2c. for selections, at which they could not get them; choice dairy for local use scarce and firm at 18c. to 19c. for small lots on the spot; medium and inferior selling rather more freely at from 13c. to 15c. Country stocks are said to be now very large, and English advices discouraging. Cheese.—Small lots of choice have been steady at 11 1/2c. to 12c., and skim at 10c. There was a lot of 100 boxes of fine sold at 11c. Eggs have sold rather better, and closed rather firmer at 16 1/2c. to 17c. for round lots. Pork.—Small lots have sold steadily at \$25, and cars have been held at \$24.50. Bacon.—There has been a steady demand maintained for long clear, which has sold at 13c. for half-car lots, at 13 1/2c. for tons and 14 1/2c. for cases; Cumberland quiet at 12 1/2c. for case lots; breakfast bacon is almost finished. Hams have been in active demand; canvassed have sold readily at 15 1/2c. to 16c., and smoked at 15c., while pickled are held at 14c. Lard quiet and unchanged, at 15 1/2c. to 16c. for small lots. Salt.—So little Liverpool in the market that quotations may be regarded as nominal; dealers say that round lots are held at equal to 72c. to 74c. Canadian unchanged at \$1.30 for car lots and \$1.32 to \$1.35 for small lots.

WOOL.—The Boston Daily Advertiser reports the wool market up to the 23rd as follows:—"The wool market has been very active, the sales footing up 3,224,240 pounds, making the business only less than the sales of three other weeks since January. The main feature of the market has been some most extensive transactions in unwashed and unmerchantable wools, the sales of which have been 546,800 pounds more than last week. The sales of Texas and Territory wools have been also large, and these are the most popular wools with manufacturers now, as the washed fleece is largely running heavy, making the scoured pound cost more than in these other wools. Here prices have ruled steady, and with wool arriving freely manufacturers buy only just what they want, fearing no scarcity later.

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