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Toronto, November 15th, 1882.

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RURAL NOTES.

The *Morning Post* (London Eng) strongly recommends farmers to keep their live stock insured. There is even more necessity for it in this country of numerous fires and violent thunder storms.

The Essex hogs closely resemble the Suffolks, only the former are black, and the latter white; both have small, fine heads, ears small and erect; fine bones short legs, thin hair, but usually long and fine; both breeds mature early, and both make an excellent quality of meat.

The advantages of breeding from Polled rams are briefly summed up by a Missouri flock-master after nine years' trial of the plan. The animals fight less, "are never fly-blown around the horns," are more conveniently sheared, and, what is of greater importance, "keep easier and grow larger."

The loss on the Cochrane cattle ranche last winter is estimated at five per cent. and the increase in number this season at forty per cent. The Company has the beef contract for the Blackfeet, Surcoes, and Stonies Indians at eight cents a pound. The Indians get the hides, heads and other refuse of the animals besides.

The third annual convention of the North American Bee-keepers' Association was held at Cincinnati, October 3 to 5. D. A. Jones, of Ontario, Canada, was elected president for the coming year, and A. I. Root, of Medina, Ohio, secretary. The convention chose Toronto, Canada, as the place of next meeting.

The neighbouring village of Beeton, hitherto noted only for the production of honey, is all agog over the prospect of discovering coal oil, the indications of which are said to be many. At the present prices of oil, a flowing well in Beeton would add sweets to the sweet. What could be more delightful than a land flowing with oil and honey?

An old farmer, speaking of the strange character of the weather we are now having, stated a few days ago that such mild weather he never saw in November. "Why, the other day," he continued, "I was going through a field near my house in which I had growed corn, and there I found a hen sitting on fourteen eggs. She evidently seemed as comfortable as though it were September."

A. B. ALLEN tells the *Rural New Yorker* that leaving only three or four canes to grow and bear fruit from raspberries, blackberries, currants, and gooseberries, may do very well in clay, or quite

rich loam, but it does not answer at all for a poor, sandy, or fine, gravelly soil, except in the case of blackberries, and even these had best be left with half a dozen canes to grow together. With raspberries, eight to twelve canes to grow up together were found to do well and bear abundantly.

There are many farmers who have extra good butter cows and do not know it. They have poor pastures in summer, and no shelter and indifferent feed in the winter. In the house they have no convenience for making butter; the milk is set where there are no arrangements for keeping it cool in the summer, and in the living room, exposed to the odours of the kitchen in winter; and neither the quantity nor the quality or any index of what a cow can do is kept.

ESTIMATES of the harvests of the world for 1882, just issued by M. Etienne, an eminent French crop statistician, show that the yield of grain for the northern hemisphere generally has been the most abundant known since these reports were first collected. All over the world there has been better than an average harvest, with no deficiency reported either in Europe or America, and cheapness and abundance of food will be the fortunate lot of the poor for the next year.

LEACHED ashes are good for almost any crop, but should be applied with other fertilizers that contain vegetable substances, like barn manure. Thus applied on most of soils, and for nearly all crops, 25 cents a bushel would be cheaper than commercial fertilizers. Fifty bushels of ashes applied to an acre of land, in connection with two cords of good stable manure, would produce better results for most crops than 150 bushels applied without other fertilizers, or five cords of stable manure applied with no other fertilizer with it.

A CELEBRATED French Agriculturist, especially noted for his success in fattening sheep, when urged to divulge his secret, replied: "Secret! I have none; it is only a question of fare. Induce the animals to eat abundantly by a large, choice variety, and good preparation of food; that is all there is to it." Too often we don't give stock all they will naturally eat. The secret of the Frenchman's success ought to be a valuable hint to our Canadian farmers to give all stock a choice variety of feed to obtain the best results.

X A WILLARD, the noted dairy writer, died very suddenly of neuralgia of the heart at Little Falls, N. Y., on Oct. 26. He was a voluminous writer of agricultural topics and the most eminent authority on matters pertaining to the dairy, in the United States. He was the author of "Practical Dairy Husbandry," "The Practical Butter

Book," and other works. We have too few first class writers in agriculture to be able to lose any one of them, the death of Prof. Willard will be regretted by a large circle of friends and acquaintances in Canada, as well as in the United States.

Every farmer should keep a book in which to paste agricultural scraps. Every one in reading a paper will see a number of things he will wish to remember. He will perhaps see suggestions the value of which he will desire to test, or hints which he will want to be governed by on future occasions, and yet, after reading the paper he will throw it down and will probably never see it again. In such a case all the valuable articles will be lost. To prevent such a loss, every reader should clip from the papers such articles as he desires to preserve and remember, and paste them in a scrap book. Such a book at the end of a year or two will be very interesting and valuable.

CHINA leads civilized countries in finding a use for its ants. Prof. Riley, of the Agricultural Bureau, Washington, has received from Han Chow an account of a curious use made of ants in that part of China. It seems that in many parts of the province of Canton, the orange trees are injured by certain worms, and to rid themselves of these pests, the inhabitants import ants from neighbouring hills. The hill people, throughout the summer and winter, find the nests of two species of ants, red and yellow, suspended from the branches of various trees. The trees are colonized by placing the ants on their upper branches, and bamboo rods are stretched between the different trees, so as to give the ants easy access to the whole orchard. This remedy has been in constant use at least since 1640, and probably dates from a much earlier period.

At the beginning of every winter we are treated to a series of dissertations, showing on how small a sum people can live. Dr. Dio Lewis was the prophet of this modern gospel of cheapness. It is now many years ago that he found that a full-grown human being can live, so far as food is concerned, for eight cents a day, and as for drink, Nature supplies water gratis. This diet of economy was composed chiefly of beans and bread. Lately Dr. Lewis has surprised himself with the discovery that tents are better than houses to live in during the summer, if not all the year, and that the closer we lay to the bosom of Mother Earth the hardier and healthier we shall be. As a tent and bed of leaves cost next to nothing, Dr. Lewis would seem to have solved the problem of living so far as cheapness is concerned. In fact a person can become a pretty respectable barbarian for less than it costs to keep a civilized dog.

FARM AND FIELD.

SAVING BARN-YARD MANURES.

As the season is now at hand for accumulating manure for next season's use, a few suggestions will at least be timely; and if but a single one will lead to more care than heretofore in preventing the washing and leaching of those in the open yard, one of the unnecessary wastes on the farm will have been stopped, and some good accomplished.

Any farmer whose barn-yard (in which the straw is stacked and stock is fed) is located on a steep slope, and the water from the roof of the barn is not conducted away by eavetroughs, but rushes down through all parts of the yard and flows away to the nearest stream of water, coloured and enriched with the most valuable part of the manure, may be a very neat farmer in many respects, but were it not for his clover sod, he would soon be compelled to "sell out and go west." A level barn-yard, with raised and water-tight sides, would add immensely to the value of the yard as a manure-making and saving device. Better that the water from the roofs and sheds be conveyed into a cistern for the use of stock and moistening the manure in the yard, when necessary, than that its unnecessary use should rob the manure of its soluble and most valuable elements.

A much better plan, where barns are ample and sheds surround the open yard, and have eavetroughs to convey away the water that would otherwise wash away the wealth of the yard, is that of Mr. Von. H., the owner of large estates in Bohemia, who obtains the most profitable results in the following way: "The manure is not removed from the stables or sheds in which the cattle are kept until it reaches the height of about five feet. The straw for the bedding is cut into lengths of about five inches, and thus it more readily absorbs the liquid portion, and facilitates the distribution of the manure in the furrows. The entire mass is constantly compressed by the weight of the animals, and thereby kept moist, while the air and consequent putrefaction are excluded, so that the air in the stable is never tainted by exhalations injurious to the cattle. After about three months the manure is conveyed to the field, and is immediately covered in the furrow. It then quickly decomposes, yielding all its strength to the soil, being fully double its usual value." With the exception that the wheat or other straw is not cut, this method has been and is practised to a considerable extent in western New York, with the most desirable results.

This method is not suited to the horse stable, as the manure would be likely to heat and become fire-fanged and spoiled. This heating tendency of horse manure can best be utilized, as manures are usually cared for, by mixing it with that of the cattle, for then decomposition will be hastened. Ordinarily, the best method is to have the floor of the horse-stable made water-tight and slightly inclined to the rear, so that a gutter will conduct the urine to a sunken barrel or hoghead. To prevent decomposition and loss of ammonia, a little sulphate of lime (land plaster) should be added every few days, as it will prevent the escape of ammonia. As the urine of the horse is rich in nitrogen and potash, and deficient in phosphoric acid, a small shovelful of some commercial manure, containing sulphate of lime and phosphoric acid, can be substituted, in which case it will not only fix the ammonia, but will, by the addition of the phosphoric acid, become a complete fertilizer.

Manure, in some form, must be put into the soil, if we expect to get out grain. The more of the kind of plant food needed the more grain.

Manure is the life of the land, and that method of farming is the best, in the grain-growing States, which involves the production of no crops that will not be directly available in fattening stock. This is the best and most practical method of condensing the grain and root crops into the smallest compass, thus returning to the producer the most money for the least outlay. It is by the adoption of such a system that the farm and the farmer are alike enriched. The soil must be studied and experiments made, in order to determine its wants, and then-if other special fertilizers are needed in addition to rich, barn-yard manures, they can be supplied without loss. Study and experiment can alone settle such questions. "Guess work" is of no avail; for the foundation of profitable farming is accurate knowledge.

W. M. K.

THE SPARROWS.

The individual who in ignorant pursuance of a hobby introduced, or helped to introduce, the English sparrow into America may comfort himself with the idea that he has brought upon his country an infliction which will cause his name to be held in detestation by every farmer in the land. When this wicked, tyrannical, noisy, mischievous and destructive bird was first introduced, I tried in vain to utter a warning through a popular agricultural journal. But as that would have been going against the current of popular feeling, just then, my suggestions were suppressed, and instead the little pest was praised and puffed and good points attributed to him, which he did not, and never did, possess, while all his evil habits were ignored. It is almost certain that the only service which he was believed to have performed was in no case his work, but the result of natural agencies, which are always operative to reduce the number of insect pests when they, at times, become unusually numerous. The sparrow was brought here to destroy the muzzing worms which infested the trees of the Eastern cities. He came, and the worms went. And it was supposed the sparrows devoured them. The present year we have had a perfect deluge of worms, and the trees have been so overwhelmed with them, that thousands have been deprived of their leaves. These are the fall web-worms, which leave their webs when fully grown and spread everywhere. They devour the leaves of elms, poplars, willows, plums, cherries, apples, Virginia creeper, and other trees and plants, and they have swarmed over houses and into them, so as to have been swept out with the broom. But nary a sparrow touched a worm.

On the contrary, they have been engaged in their natural work, which is grain-eating. They have broken down the wheat and rye, and devoured the grain; they have flocked upon the shocks, and have torn the grain from the ears; they have torn open the corn-husks, and have devoured the milky grain, and now that the corn is in shock, they may be counted by the hundreds in the corn-fields still stealing the grain. This is their old trick, and English farmers have been used to hire boys with guns and men with nets to destroy the pests by thousands to save their crops. And we must soon do the same thing.

Legislatures have passed laws protecting these pests, urged thereto by persons of the same type as those misguided and ignorant ones who have procured laws by which farmers are prevented from selling pure sweet skimmed milk, under any circumstances in the cities, to the infinite loss and detriment of thousands of poor children who would find in it a wholesome and cheap article of food. The farmers should insist upon having these laws abolished. Sparrows are not insect-eating birds. They devour the buds of trees in

winter, and in summer devour fruit, grain and seeds. They are, therefore, out of the list of useful birds. They are, however, very good eating. They are always plump and fat, and are as good game as the reed birds. They are sold in the English and French markets, and are accounted a delicacy when entombed under the crust of a pie. It would be a pity to turn them to this use here, and as farmers are undoubtedly justified in saving their crops from the despoilers, they can not only do this but secure an agreeable variation from the frequent pork and bacon by shooting and trapping them, and having them served up in pies, or roasted in the oven.—*Cor. N.Y. Times.*

HOPS AND BEER.

The hop crop is short, and the price of hops has risen within a few months in a most remarkable if not unprecedented way. A year ago they were to be had in this market at 16 to 22 cents per pound for choice, and 10 to 15 cents for yearlings. In March of the present year the quotation for first-class was from 20 to 24 cents, and in June last it had not gone beyond 21 to 22 cents for medium, and 26 cents for choice. At that time the rise began. July sales were made at 30 cents, and dealers were asking 35 cents in July, 40 in August, and 40 to 47 in mid-September, while at the end of that month, owing to intelligence of a short crop everywhere, 50 cents was the going price for No. 1. In October the price offered on this market reached 60 cents per pound, and it was thought that prices had been forced too high, and that a reaction must come. Still the article rose, and sales have been made here recently at 75 cents per pound, while in New York the quotation for finest quality is \$1.10, and cable bids of £25 and £26, per bale, were received from London up to last Monday, without takers, and 19,271 bales have been shipped this season to England. The market is bare of them here, because the growers will not sell, and speculators who have scoured any are holding them still higher.

Bavarian hops advanced in price in a still greater ratio. This state of things, as was natural, has affected the price of ale and lager beer. A combination was formed among the Toronto brewers to advance prices in October, and Halifax brewers followed suit, advancing the price of XX ale and porter to \$20 per hhd., XXX ale and porter to \$24 per hhd., "to enable them to meet the extra cost of material rather than reduce the quality of the beer." Shortly afterwards, says the *Acadian Recorder*, the Toronto compact was broken, and so the newly settled Halifax prices could not be maintained. In spite of the keen competition between Canadian brewers, however, so marked an advance in the cost of hops could scarcely fail to enhance prices of beer.

While on the subject, we cannot help referring to the numerous cases of which we have heard, wherein country hop-growers or holders have broken faith with hop-buyers in this city and elsewhere in respect of contracts made before the rise. One dealer contracted with a grower in September for hops at 40 cents, and with a manufacturer to sell the same at an advance of 10 or 12 cents. The grower refused to deliver, and the dealer had to pay 7 cents per pound more than he sold for to keep faith with his customer and fill his order. For this excess, suit has been properly entered. In another case, an extensive brewer agreed with a grower for a large lot of domestic. The time being up and no delivery made, he set enquiry on foot, and found that the grower had sold his hops to another brewer at some cents per pound advance. A third case is instanced to us in which a bargain made, and money paid by the

dealer on account of it, was abruptly repudiated by the farmer. Such gross faithlessness as this is a scandal. If such people desire to make all the money which the rise in price implies, let them hold on to their hops until they reach a dollar and then sell. But in the name of common honesty let them not disgrace themselves and embarrass dealers by repudiating bargains clearly made.—*Monetary Times*.

VISITING GOOD FARMS.

The many fairs that are held in the country tend much towards advancing a far more enlightened agriculture. We have already pointed out some of the advantages to be gained by a careful study of the exhibits, and the importance of taking an active part in these fairs. Another suggestion to the same end is here offered, which, if acted upon, will supplement the work of the fair and do much good to all progressive farmers. It is a duty of every farmer to visit yearly some of the best farms in the country, and there gather practical lessons in improved agriculture. There is no method of learning any farm subject equal to being on the farm where it is practised, and having it explained by the one who has made it a success. It may be the way of feeding stock, or a plan of preserving roots, ensilage, or other fodder. A farmer may contemplate a system of underdrains for his wet fields, in this case it would be best to make a visit to some farmer who has thus drained his farm, and gain from him many valuable hints and suggestions in this important work. Such visits not only give new ideas, but are a wholesome recreation, and many a farmer who at first thought may say, "I cannot afford it!" will find by experience that he has spoken too soon. Take a day to go and visit some one of the best farms in the county, and this will open the way for further visits and a wider knowledge of the best methods of farming.

A LITTLE FARM WELL TILLED.

Every Saturday during the summer and fall, and frequently at intervals throughout the week, may be seen a small-sized, muscular little man of somewhat sallow features, dark eyes, and small chin whisker, drive on to the London Market Square, he and his boy seated on an immense waggon box, well filled with the vegetables of the season. Mr. Abel Steele is well-known to the Directors of the Western Fair and all the surrounding county fairs, where he never exhibits his mammoth specimens without getting a host of prizes. At the late Western Fair Mr. Steele took ten first prizes out of fourteen entries. His farm, situated in Lobo, near Melrose, contains only fifty acres, part of which he keeps in bush so as to supply himself with firewood and fencing timber. He also reserves a portion for hay, pasture and cereals. The remainder he cultivates for vegetables. When Mr. Steele, a few years ago, contemplated the purchase of this small farm, some of his friends advised him to have nothing to do with it, as it was nearly all a tamarac swamp. Mr. Steele carefully examined the soil and found it of the stamp—a thick alluvial deposit of unsurpassed fertility, a great portion of which might be accounted for, but a large track thereof would almost puzzle a geologist to analyze. Mr. Steele affirms that after digging three feet down in some places he comes on an inexhaustible supply of shells and a mixture of apparently decayed vegetable and animal matter. To this, together with the adoption of a thorough system of drainage, he attributes his secret of success. As he keeps day and date for everything he does on the farm, the following will show the operations or net returns for the season so far:

Total number of acres ploughed twenty-five, from which he took 21,000 cabbages, 4,000 cauliflowers, 800 bushels of potatoes, 1,000 heads of colery, 1,000 melons, 180 bushels of wheat, 180 bushels of barley, 140 bushels of oats, 1,200 dozen cobs of corn, 150 bushels of onions, 150 bushels of tomatoes, also carrots, turnips, etc., say 800 bushels, and three tons of hay. Besides he keeps a number of cattle, pigs and poultry. His hired help averages one and-a-half hands all the year around. His family is small, but they materially assist him. His cabbage crop alone will net him nearly \$1,500. The total value of his crop is \$9,000, besides a quantity of live stock he will have for sale. This shows what good management, earnest application and sterling industry can do on "a little farm well tilled."

PASTURES.

Every pasture should be provided with shade trees, or, at least, some protection against the summer's sun. A few boards on a temporary frame will always secure the last. Excessive heat, by exhausting, and sometimes sickening the animal, materially diminishes the effect of food in promoting the secretion of milk and the growth of flesh and of wool.

The *National Live Stock Journal* gives this advice: "On farms so arranged that the stock can be divided, allotments being made to different pastures, it is wise to hold a pasture lot in reserve, giving it a few weeks' rest during the middle of the season; then as it is made apparent which animals are likely to lag behind in the matter of taking on flesh, they should be separated from the others and placed in the reserve pasture lot. This division will answer the double purpose of giving the thin animals access to the best grass, at the same time placing them more easily under control, and separated as they are from the others, it is more convenient to deal out special rations of food. The pasture lot for such a purpose should be upon rolling land, if there is such, for the well-known reason that the grass on such land is more nutritious, and has a flavour more acceptable to stock than the coarse and rank-growing grass of low lands. It is also easy, when stock is so divided, to give them other attentions not possible to be dealt out if they remain in one lot. In this connection may be named an occasional, or even daily, ration of newly cut up corn; or, if the grass is abundant, half a dozen or so ears of new corn in the ear, at noon time, not omitting the usual ration of ground feed at the customary hour for giving this. So, also, a little extra observance in the matter of salting may be indulged in with advantage.

Pastures should not consist of one kind of grass only, because (1) stock prefer a variety, going from one to the other, thus keeping their appetite whetted, (2) because the grasses having different periods at which they mature, one kind having passed its best stage, another comes to its best, and takes its place, and (3) because grasses vary in the degree of standing wet and drowth; hence, if one sort is injured by vicissitudes of the weather, another may be to an equal degree benefited. It should be more the practice to stimulate pastures with special manures. This is as necessary a thing to do as to feed a particular animal freely because it is falling off in flesh. Among the best stimulants to tardy-growing grass is nitrate of soda; and this may be used freely on pastures without great outlay, and with prompt and beneficial results.

A HOMEY but sensible Philadelphia girl, who never wore a big hat at the theatre, has been married three times, and on each occasion married rich.

CREAM.

THERE is merit without elevation, but no elevation without merit.

TRUTH is as impossible to be soiled by any outward touch as a sunbeam.

As soon as we divorce love from the occupations of life we find that labour degenerates into drudgery.

LET every one sweep the drift from his own door and not busy himself about the frost on his neighbour's tiles.

"I'm saddest when I sing," warbled a young lady at an evening party; and the other guests said:—"So are we! so are we!"

THERE is, perhaps, no one quality that can produce a greater amount of mischief than may be done by thoughtless good nature.

DREAMY young lady in a railway carriage to cheerful and healthy looking young man.—"Oh, sir, are you æsthetic?" "No, ma'am; I'm a butcher."

A GENTLEMAN had a cat which had five kittens. On ordering three of them to be drowned, his little boy said: "Pa, do not drown them in cold water. Warm it first; they may catch cold."

AN exchange advertises thus: "Wanted, a modern young lady's forehead. The editor, not having seen one for several years, is willing to pay a fair price for a glimpse at the genuine old article."

FOR the best results there needs to be the longest waiting. The true harvest is the longest in being reached. The failures come first, the successes last. The unsatisfactory is generally soonest seen.

A LEXINGTON (Ky.) youth, who went to work in the country, wrote to his girl, a June graduate, that he was raising a calf. Imagine his feelings when the girl replied: "I am glad you have begun to support yourself."

THE economical side of a woman's character shines forth with radiance when she succeeds in fastening an eighteen-inch belt around a twenty-inch waist. Her justifiable pride in making both ends meet deserves condemnation.

NOR long since a family moved into a village out west. After a week or so a friend of the family called on them and asked how they liked the locality. "Pretty well." "Have you called on any of the neighbours yet?" "No; but I am going to, if there's any more of my firewood missing."

A LITTLE girl who ran home from school, all out of breath, said: "O, please, ma, may I get married and have a husband?" "My child," exclaimed the astonished mother, "don't let me hear such words from you again!" "Well, then, may I have a piece of bread and butter and go out to play in the back yard?"

A WOMAN will take the smallest drawer in a bureau for her own private use, and will store in it dainty fragments of ribbon and scraps of lace, foamy ruffles, velvet things for the neck, bundles of old love-letters, pieces of jewelry, hankchiefs, fans, things that no man knows the names of, all sorts of fresh-looking, bright little articles that you couldn't catalogue in a column, and at any time she can go to that drawer and pick out any one of them she wants without disturbing anything else. Whereas a man having the biggest, deepest, and widest drawer assigned to him, will put into it a couple of socks, a collar box, an old necktie, two handkerchiefs, a pipe and a pair of braces, and can't shut the drawer without leaving more ends of things sticking out than there are things in it.

GARDEN AND ORCHARD.

INSECTS INJURIOUS TO SMALL FRUITS
(Continued).

Another insect attacking more particularly the black and the red currant is the Currant Geometer or measuring-worm (*Ellopia ribearia*)—see Fig. 61. As to its characteristics and resistance to mild methods of treatment, Mr. Saunders says:—

"It is a spotted larva about an inch and a quarter or an inch and a half long when it is matured, a great feeder, and a much more difficult insect to destroy than the saw-fly. Hellebore, which will promptly destroy the saw-fly, will have very little effect on the geometer. There is something very robust in its constitution, which enables it to resist the action of this poison, and it requires to be used much more strongly, and even then it will not always prove effectual. I have found that Paris green is much more effectual, but it is undesirable to use this poison after the fruit is formed. The insect appears very early, and if the bushes are sprinkled with a solution of Paris green in the early spring, before the fruit is formed, I think there is no danger attending its use. Still, if hellebore and water, used of additional strength, will answer all the purposes, I should prefer it to Paris green. This insect has a habit of dropping from the bushes when they are struck, and suspending itself by a silken thread, and then, with a stick, you can gather a number of these threads and draw the insects together and trample them under foot."

The Spinous Currant Caterpillar (*Grapta prognis*), a pretty but not often very hurtful butterfly, and the four-striped plant bug (*Capsus linearis*), which punctures the leaves and so stunts the growth of the bush, are noticed. The only known remedy for the latter is the old-fashioned one to "catch him and kill him."

The Gooseberry Fruit Worm (*Pempelia grossularia*)—See Fig. 62—which attacks the interior of the gooseberry, is thus described:—

"The parent is a small narrow-winged gray moth, which when its wings are expanded measures nearly an inch. It spends the winter in the chrysalis state, in the ground, and early in the spring the moth appears on the wing; having escaped from the chrysalis about the time the gooseberries are formed, and growing rapidly, this moth deposits an egg here and there on the fruit. The egg hatches, and the young larva eats its way into the fruit, and lives in the interior portion of the gooseberry, and in a very short time the berry it feeds upon becomes discoloured, and having partially consumed it, the insect takes to another, and finally it draws together, with silken webs, a cluster of three or four berries, living in one as a sort of home, from which it issues to feed on the berries about it. When it attains a growth of about three-quarters of an inch, it descends to the ground, enters into the chrysalis state, and remains there until the following spring, when the moth issues to enter upon its destructive mission. There is only one brood of this insect during the year, but it is getting very destructive, sometimes destroying as much as twenty-five or thirty per cent. of the gooseberry crop in some sections."

Of artificial remedies for the fruit worm, Mr. Saunders says:—

"By jarring the bushes you can collect this larva in the same way as you can the gooseberry geometer. It drops to the ground, retaining its hold on the bush by means of a silken thread, by which it climbs up again when the danger is past. By drawing the threads together with a stick, you can sometimes readily collect a number of specimens of the larva. I have found that by sprinkling the bushes with air-slacked lime, about the time that the moths appear, they can be kept almost entirely free from the attacks of this insect. Where the lime is used the eggs do not seem to be deposited on the berries, as insects have a great aversion to this substance. But such a

remedy does not destroy the insect; it only drives it somewhere else."

Two species of currant borer, the Imported and American, are next in the list, and described as follows:—

"The imported currant borer (*Egeria tipuliformis*) is a small wasp-like moth with transparent wings and a body banded with gold. It flies about very actively in the middle of the day, when the sun is shining brightly. After pairing, the female deposits her eggs upon the twigs, generally one at the base of the bud; when this is hatched, the young grub bores into the bark of the stem to the centre, and works up and down, devouring the substance of the stem, and finally when it attains its full growth, eating a hole

CURRANT GEOMETER, OR MEASURING WORM.—*Ellopia ribearia*.



Fig. 61.

GOOSEBERRY FRUIT WORM.—*Pempelia grossularia*.



Fig. 62.—Moth and Cocoon.

THE IMPORTED CURRANT BORER.—*Egeria tipuliformis*.



Fig. 63.

THE AMERICAN CURRANT BORER.—*Psenoscerus supernotatus*.



Fig. 64.

almost entirely through the current stem, leaving only about the thickness of tissue paper of the bark unbroken; and inside of this opening it forms a chrysalis, with the head of the chrysalis pointing to the thin layer of bark. When the chrysalis is about to change, it has only to break through this thin layer of bark and escape. (See Fig. 63.)

"The other species, the American currant borer (*Psenoscerus supernotatus*), has similar habits, although it belongs to an entirely different family—the family of long-horned beetles. It deposits its eggs in the same manner as the *Egeria*; the larvae go through all their changes within the stem of the bush, and finally emerge in the perfect beetle form by eating their way through the stem. The remedy for these two pests is to remove, at the end of the season and during the winter, all those stems which manifest any symptom of being injured, and burn them. In that way you destroy the chrysalides, and thus lessen the danger of their increase." (See Fig. 64.)—Report of the Ontario Agricultural Commission.

DANDELION CULTURE.

Dandelion culture is becoming a common industry with American gardeners. A New Hampshire paper says concerning a garden at Manchester, in that State: "Great reliance is placed upon good dandelion seed of home production, and improved by selection. Enormous crops of this green are grown, and some days as many as sixty bushels are sold. The past season a single plant weighed 8½ pounds, proving that good seed and high cultivation will tell even in a dandelion. Dandelions for open-air culture are sown between the rows of beets early in June. The beet rows being only twelve inches apart, with the dandelions between, make close work at first weeding, but as soon as the beets are large enough every other root is taken out and sold for greens. The remaining rows are thinned when large enough for bunching, and thus the second crop goes to market. The third crop goes off in the fall—the table beet crop—and still there is another left to occupy the ground. This last is the dandelion crop, and will be sold early next season, and then followed by one or more of the rotation. Under glass dandelions are followed by lettuce, and in some instances tomatoes, and then cucumbers follow lettuce. We noticed some of the finest specimens of lettuce here, showing a remarkable tendency to full heads even when growing up for seed, and we concluded that some of the plants would outweigh the 3½ pound dandelion. This variety has been produced by crossing two well-known sorts, and he has secured a remarkably large, thick, and finely curled lettuce."

PROTECTING TREES IN WINTER.

Many fruit trees are lost every year for want of a little care at the proper time. Many young trees are destroyed by rabbits, and many almost every winter by the heat of the sun in warm days towards spring. Frequently the rays of the sun, shining on the south side of the trees, will take out the frost, and, if near spring, start the sap, and probably in a day or two it will turn very cold, this sudden thawing and freezing will cause the bark to crack up, and perhaps peel off the next summer, and very frequently kill or cripple the tree. A preventive is to take what is called "straw board," or the thick paper used under the ceilings in building houses, or to take tin, or bass-wood, or hemlock bark, and put around the tree, and let it extend pretty well up around the body of the tree, so it will keep the sun from taking the frost out. When setting trees, they should be marked, so that the side of the tree that stood to the north in the nursery is set to the north when put in the orchard. This will also save many trees.—Cor. Country Gentleman.

WINDOW GARDENING.

The season is approaching when the care of the house plants will demand attention of many housekeepers. The following directions for watering plants will be of advantage in keeping them in a healthy condition. Take carbonate of ammonia four parts; nitrate of potash (saltpetre), two parts; pulverise and mix well. Put one dram (one-eighth of an ounce) of this powder into a gallon of rain water. Use this for watering plants. Give them good sunlight and not too much heat, and plants will keep green and fresh.

LANTANAS require rich, strong soil, a liberal amount of water, plenty of sunshine, free circulation of air. They are easily grown from cuttings stuck in moist sand in a warm place. It is hardly worth while to attempt the growing of cuttings in the fall or winter.

BEES AND POULTRY.*SEASONABLE HINTS.*

The *American Agriculturist* for November contains the following:—

A subscriber asks if sugar can be safely fed to bees in winter. There is no other food so good for bees as pure sugar. The granulated form is best. All beekeepers that have fed this sugar for winter stores are agreed that it is even superior to honey for bees. This is owing, doubtless, to its composition, as it contains more cane sugar, and also to the absence of pollen, which is to be found in all honey. While pollen generally does no harm to bees in winter, it is not good in some cases and may be the cause of fatal dysentery. Dissolve the sugar for feeding in an equal bulk of water, and heat until it boils, and when cold it is ready to feed.

It will be remembered that many bees were lost during the winter of 1880-81, from neglect. They were caught by the exceptionally early season. They need at least 80 pounds of good food per hive, and they should be crowded upon just enough frames to contain them, by using division boards. If the bees are to be packed, this should be done as early as October 1st, and if chaff hives are used, the packing above and at the ends of the frames should be added at the same time. It is always best to have the fine chaff or sawdust in sacks. However we winter, whether in chaff hives, or in the common hives with chaff packing, or in cellars, it will always pay to pack above and at the sides of the frames. The hives should be put into the cellar as early as November 1st, before the severe weather sets in. The hives should be dry when set in, and, in the removal, disturb the bees as little as possible. When in the cellar, remove the tops of the hives, but not the chaff pillow. The entrance should be left open.

HONEY PLANTS.

White clover, buckwheat, rape and alsike, recognized as the most valuable honey plants for cultivation on a large scale, and it is stated by beekeepers that the honey furnished by these plants pays for all expenses of cultivation. The Spider plant, *Cleome pungens*, and Figwort, *Scrophularia nodosa*, a tall, rank-growing herb, with small greenish purple flowers, growing wild in woods and damp places, are also highly recommended. Among garden flowers Mignonette stands at the head of the list, at least bees appear to be very fond of it, and "Mignonette Honey" is quoted in the market lists at a higher price than any other. Why not try "Wild Garden Seeds?" Among such a variety of flowers, surely even the most fastidious bees will find something agreeable to their taste.

HENS IN CONFINEMENT.

I have had an average of sixty Plymouth Rock fowls that have laid in six months' time 5,668 eggs, an average of ninety-four eggs per hen, and nineteen of them were set during the time. They have never been out of their pens since I put them in in November, and they never will until they go to the block to have their heads off. They are divided into flocks of twenty, each flock

having 100 square feet of house and 800 square feet of yard room. I have had flocks of twenty and forty that had free range, but never could get so high an average as when kept yarded in flocks of twenty. The cost of keeping was less, and the number of eggs much less, when they had their liberty. I cannot give the cost of keeping, as 185 chickens are fed from the same grain bins.

My flock has consisted of just fifty hens in July, and they have laid 910 eggs during the month, which I think is good evidence that confinement agrees with them. They are provided with all the green food they can eat, and are given a few ground beef scraps daily, but never any milk. The chickens hatched by the nineteen hens were divided among thirteen hens, nine of which began laying when the chickens were three weeks old and weaned them a few days later, evidently thinking it was better business to help fill the egg basket than brooding young chickens. As I manage my laying hens, it makes

the honey. Our honey room is as dark as anything can be made to be."

BEST SIZE FOR A COLONY IN WINTER.

The *Country Gentleman* gives the following on this subject: "Considerable controversy has taken place with regard to the best size for a colony when put into winter quarters. In my estimation, six Langstroth frames, well covered with bees, answer as well as eight or ten, particularly if in a chaff hive; they will be found as strong in the spring usually as the larger ones. I would myself prefer four or five frames crowded with bees, with a young laying queen, to twice as many with a two-year old queen—the results on the first of April next year would be much more satisfactory. On the final examination, before putting the bees away for winter, I prefer to take away, if necessary, some frames of their fall-gathered honey and pollen, and introduce into the middle of the hive two frames of empty worker comb; then feed the bees liberally pure sugar syrup (made of 'coffee A' sugar and water) until those frames are filled and sealed over.

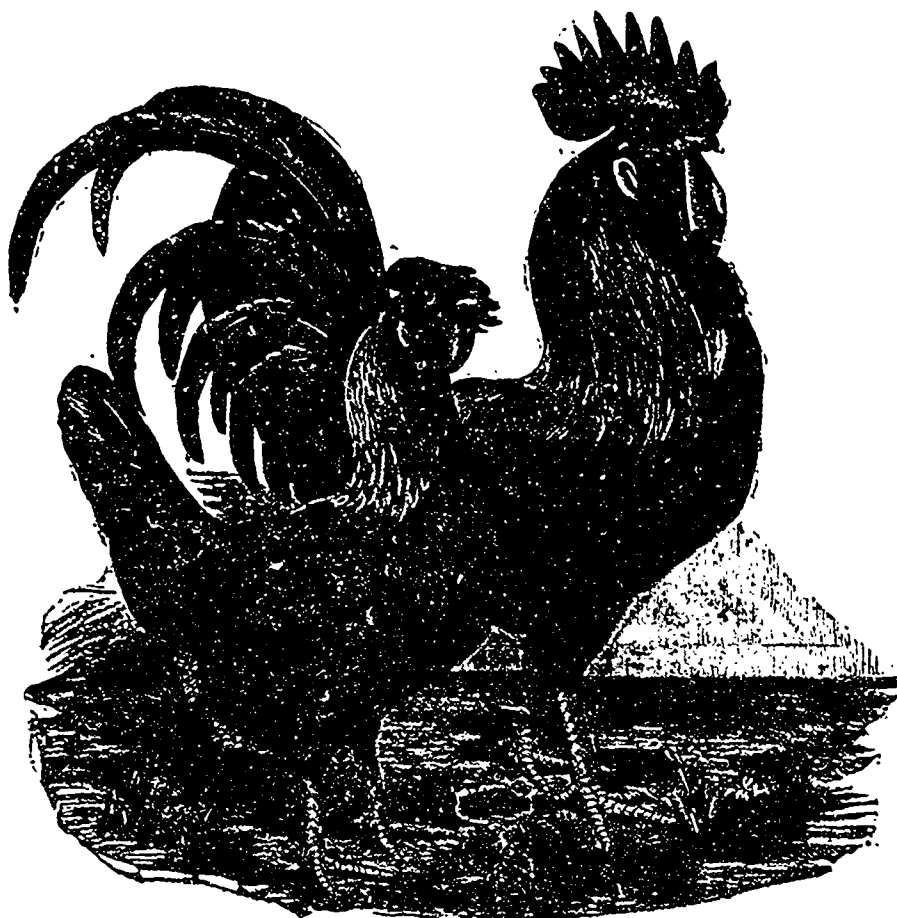
"The bees will come out cleaner, brighter and more healthy in spring on sugar syrup than on any fall honey they may gather. The frames removed should be kept in a warm, dry room until spring, and then be fed back to them for brood-rearing, after the bees are able to fly and void their feces. Pollen consumed in winter is now acknowledged to be the main cause of dysentery, and by removing the frames filled or partially filled with pollen, and substituting pure sugar syrup, the bees can live for months without any necessity of leaving their hives, and come out in spring clean, bright and healthy."

THE SURPLUS HONEY.

Let all remember to keep their honey, whether extracted or comb, in a dry warm room. It is best to keep the extracted honey in open vessels, and if to be shipped, in barrels or kegs,

these latter should be coated inside with paraffine, or beeswax. Let no one be in a hurry to sell his honey. It should be thoroughly graded before it is sent to market. No pains should be spared to have the honey look neat, which will largely increase the price it will bring. In some parts of the country the crop has been very good, in many others it is a total failure. It is to be expected that good prices will prevail.—*American Agriculturist*, for November.

"FANNY FIELD," authority on poultry matters, says: "The Hamburgs will lay more eggs in a year than any other breed in existence; the Cochins and Brahmas make the best mothers, and the Plymouth Rocks are among the best, if not indeed the very best, for market fowls. If you want a fowl for all purposes, take the Plymouth Rocks; if you want to get the most eggs, without regard to size of fowl or eggs, take the Hamburgs; and if you want to get the most meat to sell by the pound in the fall, take the Brahmas or Cochins. Hamburgs are non-sitters, and will not bear confinement so well as the large breeds. Leghorns, Houdans, La Fleche, Black Spanish, and Polish, are all good layers, non-sitters, but, like Hamburgs, will not do their best in confinement."



BROWN LEGHORNS.

me a good deal of hard work, but the profit is large, which suits me better than little work and little pay.—*Poultry Monthly*.

CARE OF COMB HONEY.

J. L. Bowers writes to the *Maryland Farmer* the following on the care of comb honey: "Do not, on any account, store honey in a cellar. The dampness causes it to sweat, and then the cappings will break and you have a lot of ruined honey. Our honey room is in the second story of our house, and will hold two tons. It is 6x10 feet, and nine feet high, with two doors; one on each side; one opening from the hall; the other opening into a room over the porch. This room has one window. Here we put our honey first to let it harden, keeping this room light. After exposing it to the light for about two weeks, we place it in the honey room. Never, on any account, place more than two boxes on top of one another, but place shelves above each other on the order of a library. If little red ants bother honey, place the honey on a bench and put each leg or foot in a pan of water, and my word for it, if you keep water in the pans, no ants will bother

HORSES AND CATTLE.

BLANKETING HORSES.

There are many farmers who almost wholly neglect the use of horse-blankets, while, on the other hand, there are many others who seem determined to lose no opportunity to get their horses covered with blankets. As the truth in argument is frequently found between two extremes, it is also probable that in this matter an intermediate course is to be desired. The proper uses of a horse-blanket are to promote the comfort of the horse and prevent it taking cold. That many people keep their horses covered in order to keep their hair smooth and make them look a little better than they otherwise would the writer does not question. But this is hardly a proper use of the blanket, and certainly is not to be recommended.

Too much blanketing is almost as bad for a horse as too little. Nature provides a covering for the horse, and any interference with its provisions should be judiciously made. When horse owners go to such lengths as to shear their animals, they may well be allowed to blanket them; but it does not seem as if it would promote either the health or comfort of a horse to have his hair removed and then be covered with a blanket. If any horse-owner thinks differently, let him have his own hair cut close to his head, and wear a hat when not at work. One practical trial of this nature will be sufficient for a lifetime.

However, as but few farmers have their horses sheared, it is not necessary to dwell on this point. The question concerning which farmers are most interested is whether, during the cold season, ordinary farm-horses need blanketing. If the stables are boarded as closely as they should be, it does not seem at all necessary to blanket a horse, unless he has been at work. While he is merely standing in the stable he does not need a blanket, any more than a cow needs to be covered. If the barn is so loosely boarded that a horse cannot keep comfortable while standing in it, the owner ought to repair his building. His call is to furnish boards rather than blankets.

When the horse has been driven any distance or has got warm while at work, he should have a blanket put on whenever and wherever he stops. Even if the stop is to be but a short one he should be covered. Many a horse has been seriously injured by standing a few minutes in the cold after having been driven.

When put into a stable, unless both stable and weather are quite warm, a blanket should be put on for a short time; but should not be allowed to remain a great while. When a horse has been exposed to a cold rain or has been out in a snow-storm he should be rubbed dry with straw or hay, and a blanket put on for an hour or two. But, unless the horse has long been accustomed to it, there seems to be no possible advantage in keeping him constantly covered with a blanket while he is doing nothing but standing in a barn.

Judgment is needed in selecting blankets as to thickness. With the design of getting the best one I could find for a reasonable price, I once bought a very thick and heavy blanket. I have often been sorry that I bought one so heavy, since during much of the time it is wholly unsuitable. In the spring and fall, when the weather is not extremely cold, and also when the horse is in a warm stable, the blanket is very much too thick and warm. If I put it on when the horse is sweaty or wet with rain or snow, he does not dry off well. There are but very few times in the course of a year when this heavy blanket is just right. While a very thin and light one is not desirable, yet one of medium thickness is much better than one which is extra weight. *American Cultivator.*

STALL-FEEDING CATTLE.

In a long article to the *New York Tribune*, Mr. Henry Stewart says that it is everywhere admitted by stockmen that the profit gained in rearing cattle for market is seldom less than 40 per cent. yearly, and figures are given to show that 75 per cent. is often realized. This is the result of feeding cattle from birth to maturity. There is a still greater profit in feeding a thin steer, costing 5 cents a pound alive, until it is worth 7 cents a pound; because there is not only a gain by the increase in weight, let us say of 200 to 800 pounds in three months feeding at 7 cents a pound, but also upon the 2 cents a pound of the whole weight of 1,000 pounds or more. This is, on the whole, equivalent to a much greater profit than could be gained from the sale of the crops that are fed. Many crops are costly, but costly crops cannot be produced under any other system than that of stall-feeding. Pasturage is not required, and as one acre of roots, with straw and linseed and cottonseed meals, will feed five head of steers for 150 days, the economy of land is very great, and root-growing is the key to the whole business. The bulky and least saleable crops are changed into valuable concentrated products, and at the same time there is returned a large quantity of valuable manure. A calf represents really more value per pound than an animal two or three years old, because it contains the initial force, so to speak, which brought it into existence, and a pound of flesh can be put into a calf at less expense for food and care than upon an older animal. It should follow, then, that these calves are disposed of by their first owners at considerably less than their value, and could be fed and reared to maturity with profit. Stall-feeding is applicable to the home-bred or purchased animal, and filling the stalls with either, and feeding to them straw and corn-fodder, which would be otherwise wasted, represents for each ton so many pounds of valuable flesh or fat, or, at least, so much heat and life-sustaining elements as will release the richer foods from the duty of merely sustaining life, that they may be devoted to the more productive effect of making flesh and fat. Winter feeding of stock gives employment to labourers who would otherwise have but little to do, and the preparation of cutting the feed and cleaning the stalls, entail but a small cost on that account. The system is thus more economical than might be supposed.

MISMANAGEMENT OF BULLS.

There are two very common mistakes, each about equally pernicious, one or the other of which will be made by a good many farmers who have resolved to raise a better class of cattle by the use of a thoroughbred bull which has been, or will be, bought at what is considered a tolerably high price. To one man, what is thought a high price may be \$50, and to another it may be \$500, but they will alike have a lively appreciation of the cost, and exalted opinions of what is to be accomplished by the new departure. One man will, with a generous spirit, take his new purchase home, tie him up in the barn, and provide him with the best the market affords—say plenty of corn-meal and good hay, in fact with every luxury except plenty of exercise. The result is the bull grows fat and sleek, but soft, sluggish, unreliable and without that hardy vigour he should possess if it is to be stamped upon his progeny. He will be fair to look upon, but the chances are that so many of the cows he has been regularly serving through the season will fail to have calves that the owner will be in much of a quandary as to whether the investment has really paid or the value of his herd been much

enhanced. Another man will turn his handsome young bull—perhaps descended from a long line of fine cattle that have been most carefully reared—on the range with the herd, to rough it as best he may, without grain of any sort, where his strength is likely to be exhausted much more in one day on a single cow than would be necessary in siring a dozen calves by one service at a time, at proper intervals. The result in this case is, the bull soon becomes a wreck in every way, while such calves as he gets are by no means what the owner expected, and a large percentage of the cows—like those bred to the pampered bull—do not have calves at all. To the farmer who has resolved to raise scrubs no longer, and for the first time invested a share of his savings in a thoroughbred bull, such an outcome is very discouraging; he fancies he has had experience with fine stock; that it is too delicate for him; in fact, "not what it's cracked up to be;" and after, perhaps, another year's unsatisfactory trial he is willing to take the best price offered for what is left of his "fancy" bull, and fall back on the use of one of the old sort, that he knows is tough, and sure as taxes. These mistakes, that are being committed all the time, have an immense influence in retarding the improvement of our cattle, and are all the outgrowth of mismanagement. A young bull should not be kept tied in the barn, and stuffed with meal and oil-cake, nor yet turned on the common, night and day, to run with a lot of cows. While he should have to eat and drink what will make him grow vigorously, he should also have plenty of exercise, and not be allowed to serve a cow more than twice, and, ordinarily, one service will be sufficient. If he can be kept in a pasture in summer, that is his proper place; but at all events he should neither be fed to excess nor starved; rightly managed, he will be capable of much valuable service, and return a bounteous interest on any reasonable cost.

We understand, of course, that the same systems that should be pursued by the average farmer are not wholly applicable to the herds and ranches of the western plains, and our remarks are intended more especially for the former.—*Chicago Breeder's Gazette.*

WHAT IS A GOOD PEDIGREE?

What constitutes a highly-bred animal, in the truest sense of the word? The answer will be: One with a first-class pedigree. What then constitutes a good pedigree? To this the only sensible answer is: One, all of whose ancestors for several generations back have been pre-eminently distinguished for excellence in the most desirable traits of the breed to which it belongs. The farther back this genealogy of good animals extends, and the more uniform the quality of the ancestry, the better; but the more immediate the ancestry in any given case, the more important does its quality become. Each immediate parent contributes one-half of the blood or pedigree inheritance of the individual; while each great-grandam or sire contributes one-eighth only; and the farther the removal the more unimportant does any given factor or cross become for good or evil in a pedigree. No pedigree can be a good one that does not usually produce good animals; no pedigree should be prized above other pedigrees unless it usually produces better animals. If, tried by this test, any pedigree fails, no matter how much it may have been idolized, its value is fictitious and its effect is hurtful rather than beneficial. The only true aristocracy of blood is one that brings superior merit, without this it is a delusion and a snare. No matter what it may have been eight or ten generations ago, if from a

wrong system of breeding, if from lack of care in selection, if from incestuous breeding, or from any other cause, any particular strain has ceased to be uniformly superior in itself, it has lost its patent of nobility. Let all young breeders, and old ones, too, for that matter, try "pedigrees," and "families," and "strains" by this test, without being dazed by some imaginary halo that attaches to a name handed down from the misty traditions of the past, and it will be the better for them, no matter what particular line of breeding they may be engaged in.—*Breeder's Gazette*.

GIVING MEDICINES TO ANIMALS.

Prof. D. D. Slade presents some valuable rules for administering medicines to animals, in the *American Agriculturist*: "In giving a drench to a horse, a horn should be used in preference to the bottle, for fear of breakage. Standing at the right shoulder, raise the head with the left hand under the jaw, and with the right hand pass the lip of the horn into the side of the mouth, and empty its contents, the head being kept up until they are swallowed. If the animal is violent, place a twitch upon the nose, to be held by an assistant; or if he refuses to open the mouth, the tongue may be gently held to one side, the horn introduced, quickly emptied, and the tongue liberated at once. Under all circumstances, the greatest gentleness must be exercised. Nothing can be gained by impatience or by harsh treatment.

"For the ox or cow, liquid medicine is preferable, given from the bottle rather than the horn. The bottle is more manageable, and one is less tempted to use it to pry open the jaws, and perhaps thus lacerate the tongue also. Elevate the head only enough to prevent the liquid running from the mouth. The bottle should not be pushed back far into the throat. The tongue should be left free. The following is a very neat and efficacious method: If standing, place the left side of the animal against a wall, and standing on the right side, seize hold of the upper jaw by passing the left arm over the head, and bending the latter far round to the right, slightly elevating it. With the right hand, pour the contents of the bottle into the mouth at its angle, using the least possible force.

"Medicinal substances can be readily given to the cat, after properly securing the animal. An efficient method is as follows: Grasp the hind legs above the hocks, between the little and ring fingers of each hand, the fore extremities above the elbow, between the other two fingers, and place the thumbs against the posterior-lateral parts of the head at the base of the ears. Being thus firmly held, the medicine, either solid or liquid, may be given from a common spoon."

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 wagon 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 commonly 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.

REFORMING A BAULKY HORSE.

"It was new to me," says a correspondent of the *Live Stock Journal*, "and was very effective in the one case in which I saw it tried, hence, I send you a description of an apparatus designed to induce a baulky horse to reform his bad ways. A light but strong pole has one end fastened to one end of a whiffletree—a steady horse being worked on the end. The other end of the pole extends to the head of the troublesome horse, and is fastened to a strap passing around the nose and through the bit rings. If the horse does not start promptly and keep abreast with his mate, he is pulled by the front and upper parts of his mouth. Whenever he starts forward he is relieved. In the case in which I saw this tried the horse hung back for some three hours the first day, perhaps an hour the next day, and gradually gave up after a shorter trial, until in about a month he showed no signs of his old habit."

A GENEROUS HORSE.

A pair of horses in an English stable, whose box-stalls adjoined each other, were firm friends. The one which finished its hay first invariably received from the other enough to keep it busy until both lots were consumed. One day, one of the horses made its way out of his own loose box, the door of which was unfastened, and found out a bucket of mash which was standing in the entrance of the stable, and, taking the opportunity, while the coachman was in the loft overhead, it was helping itself freely to its tempting contents. The other horse, which was fastened to its own loose box, caught sight of its friend's proceedings, and neighed loudly, evidently demanding a share for itself; and the servant was astonished to see the horse, which was enjoying itself, fill its mouth with the mash, and poke its nose through the bars of the loose box for its friend to take it from its mouth. This was done several times.

GENERAL L. F. ROSS, of Avon, Ill., introduced Galloway and Norfolk polled bulls in his herd, with the virtual effect, the *Drover's Gazette* says, of "knocking the horns off the Devons."

AN exchange says:—"It has time and again been truthfully asserted that the bull is half of the herd." We will add, that the ram is half of the flock, the stallion half of the stud, and the bear half of the herd. Bear these three facts in mind, and when purchasing males for breeding purposes, purchase only the best, and thus will the value in the live stock of the Dominion be greatly enhanced.

THE benefit derived from the introduction of a fine breeding animal into any given community is not as remote, nor as indefinite as many seem to think. In fact, the good results are immediate and lasting. Elevating the quality of the breed is not the only consequence to be noted in such a case, but it serves as an active factor to stir up healthy competition among one's neighbours, which is the life of the stock trade as truly as of others.

SAYS the *Breeder's Gazette*: Last week mention was made of the income received from a herd of grade Jerseys in Virginia, and now we have an account of the income from ten Jersey grade cows, owned in Johnson Co., Ind., which for cream and butter amounted to \$813.84, or an average of \$81.38 per cow, besides the calves and milk. With eleven cows the average receipts per month for the first four months of this year were \$97.95, or an average of \$8.90 per cow per month. This is at the rate of \$108.85 per year."

CURRENT NEWS ITEMS.

D. D. WILSON's teams, of Senforth, have drawn 1,200,000 dozen eggs during the past season.

A FARMER of Garafraxa obtained 800 bushels of mangolds from a little over a quarter of an acre, about 1,000 bushels per acre.

MR. GEO. DOBSON, whose farm is just outside the corporation, on the south-west, had the enormous yield of 1,500 bushels of mangolds off one-and-a-half acres of land. Who can beat this?

As a sample of the wheat that is raised in Essex County it is mentioned that Jasper Gordon, this fall had 50 bushels of wheat, which, when weighed, came to nearly 8,500 lbs. A bushel weighs 60 lbs., so that in 25 bags of 2 bushels each by measurement he had 7 bushels extra.

A LITTLE SON of Mr. D. B. Campbell, of Park-hill, playing among some hives the other day, was attacked by bees, and would undoubtedly have been killed had not assistance soon arrived. The little fellow was unconscious from the effect of the stings before the bees were driven off.

SOME farmers, says the *Port Elgin Free Press*, are keeping back their potatoes, expecting better prices. They were never further mistaken. The New York and Boston markets are glutted, the crops all over the country are enormous, and there will be no demand in the States this year for Canadian potatoes.

THE Canadian apple trade is more active it is reported, and advices from England are said to be favourable to shippers. We hear of 8,000 barrels being shipped this week by one firm of the Baldwin, Spitzenberg and Northern Spy varieties. For such the market here is \$3.50 to \$4. English market 20 to 25 shillings.

THE rot in potatoes has done much less injury than was feared in August. It was caused doubtless by the heavy rains of that period, and the subsequent drouth effected the cure. The chief injury was done in undrained loamy and clayey soils, where, in some localities, half the crop was destroyed. Farmers are every year being taught new lessons on the value of underdraining, but, like the lessons of experience, they are often very dearly bought.

THE *Arthur Enterprise* says: A very malignant looking disease, by some called the "Head Murrain," has appeared on the 16th con. Peel. Mr. Philip Farley lost two calves one day last week, and his neighbour, Edward Gainer, lost another a few days afterwards. The animals appear to become affected very suddenly. They swell in the throat and side of the head, and discharge a bloody froth from the nostrils. As the disease is not common in this section it is probable that a few isolated cases may be the last of it here. Mr. Farley had in addition nine very fine ewes killed by dogs a few days previous."

MR. F. W. STONE, Guelph recently made the following sales:—To Mr. John Dillman, Oakwood, Ont., yearling Shorthorn bull, *14th Seraph*. To Mr. D. Johnston, Campbellford, Ont., shearling Southdown ram. To Sir John W. Walrond for Mr. A. M. H. Walrond, near Emerson, Manitoba, Hereford bull, *Cherub 2nd*, Hereford cow, *Dainty 2nd* (imported); also *Dainty 2nd's* bull calf; Hereford heifer, *Perfection 10th*, two years; Hereford heifer, *Hazel Duchess*, also five Berkshire pigs. To Mr. J. T. Sifton, Wallacetown, Ont., one shearling Southdown ram. To Mr. F. Bonnycastle, Campbellford, Ont., one shearling Cotswold ram; Shorthorn cow, *Polyanthus 2nd* (imported in dam); Shorthorn bull calf, *Barrington Duke*, two months; Shorthorn heifer, *Anchovy 2nd*. In addition to the above Mr. Stone sold four Cotswold rams at the Provincial Exhibition, Kingston.

GOOD PAY TO AGENTS.

Agents wanted in every village, town and township, to make a thorough canvass for the RURAL CANADIAN. Liberal inducements. Work to commence at once. For full particulars address

C. BLACKETT ROBINSON,

5 Jordan Street, Toronto.

Publisher.

LETTERS on business should always be addressed to the PUBLISHER; while communications intended for insertion in the paper, or relating to the Editorial department, to ensure prompt attention, must be addressed to EDITOR RURAL CANADIAN.

The Rural Canadian.

TORONTO, NOVEMBER 15TH, 1882.

A WORD IN SEASON.

The time is approaching when our readers make up their list of papers for the ensuing year. Of course the RURAL CANADIAN will form one of the number. We have reason to know that it is already a favourite in many quarters; and the improvements we intend making in all departments of the paper, commencing with the first issue in January, are sure to increase its popularity and extend its sphere of usefulness.

We invite our friends everywhere to help in enlarging our list of subscribers; this can easily be done without much labour. Let every reader ask a neighbour who is not already on our list to take the paper for 1883.

The price of the RURAL CANADIAN for the ensuing year will be \$1; it will be sent to clubs of four for \$3, and to clubs of ten for \$7.

During the coming month we expect to have numerous renewals; and, if agents push the canvass with vigour, we hope to add thousands of names to our subscription list. Let the work be done without delay; balance of year free to new subscribers.

VALUE OF STRAW TO THE FARMER.

For cattle and sheep, straw of any kind, if it is bright and in good order, is excellent food for them when properly prepared, and horses will also eat it and look quite as well as they do when fed on hay. But in addition to hay or cut straw mixed with bran or meal, horses that are used steadily for work should be fed plenty of shelled oats or corn, as they cannot stand hard usage without such grain. We do not pretend to say, either, that straw alone should be fed to cattle or sheep, as there is too much bulk and not enough of strength in it to insure the greatest satisfaction; but along with it should be fed a small quantity of wheat bran and middlings mixed, or corn-meal—making what is familiarly known as "chop." Without so preparing it, it is doubtful about them eating enough of it, if nothing else is fed in connection, to keep in as good condition as is desirable.

If a farmer has room in his barn, he should store his crop of straw therein as he threshes his grain, and then with a good straw cutter, run by horse power, the work of manufacturing it into number one feed is easily accomplished, and this can be done in stormy weather or when it is too unpleasant to work out of doors. Straw prepared and fed in comfortable stables will be found fully as valuable for stock as hay of good quality, and will take cattle, sheep, and colts through an ordinary winter, without necessarily using any other kind of food, and bring them out in the spring in good condition. By making a good crop of straw of value as food for stock, and feeding the hay,

fodder, etc., of the farm as is usual, double the amount of stock can be kept through the winter, that is kept when it is not used, and at a very little increase of cost.

Straw is of great value to a farmer even if it is not wanted for stock food, when used as a manure and for bedding down animals. The most difficult thing connected with housing farm animals to feed them through the winter season, is to keep the stable floors in a nice clean condition, and, as this is positively necessary, there is nothing so good as a litter for the stables as finely cut straw. It is a splendid absorbent and makes a bedding for stock to lie down on, quite superior in our estimation to any other material in use, while its value as an addition to the manure is much superior to sawdust, tanbark, and such articles. It should be cut quite short for this purpose, and a large quantity can be prepared at a time and be piled up in the barn, where it will be convenient for use as it is needed. Enough should be thrown in the stalls every morning to keep them dry, and at the end of every week they should be thoroughly cleaned out throwing their accumulations into the manure cellar, or, if there is no manure cellar, it should be thrown in a heap under cover, and occasionally have a quantity of water poured over it to hasten decomposition. If piled up out in the weather it is liable to receive too much water and the strength soak out and wash away. Unless the straw is cut short, it is not advisable to use it as an absorbent or stable litter, as it cannot be conveniently removed from the stalls on account of it clinging together and forming a solid sheet of manure. When the straw is cut up short, it is easily removed from the stables and is always easily handled afterwards.

ROOTS VS. ENSILAGE.

BY E. W., WHITEVALE, ONT.

Noticing your paper on ensilage it struck me that in our interest in the new we are apt to forget our old friend—the root crop. I have read a great deal for and against ensilage, and have followed its history from the beginning, but have failed to discover anything to induce me to make a trial of it.

In taking anything new in hand, especially in farming, we should study every point in connection therewith, climate, soil, our requirements, and last but not least, have we no crop that fills the same place in our farm economy.

W. M. White, correspondent of the *Country Gentleman*, says: "The southern white dent tooth-corn, with drill cultivation, will yield from ten to twenty tons to an acre." "Ensilage should not cost more than two dollars a ton." "A ton a month is full feed for a cow." Having, however, no practical knowledge of ensilage, I can do nothing but theorize concerning it. Corn will not—judging by the growth of our common yellow corn—yield as heavily with us as in the United States, without cultivation at a greater expense than the crop would afford. As for clover, millet, Hungarian, etc., the extra value will not pay for the extra expense. A chemical analysis of ensilaged corn and cured corn makes no material difference in nutritive values in either, the additional weight in the ensilage being mainly water; but practical experience shows ensilage to have the greater feeding value. The difference seems to be this: The particles of nutrition in ensilage must be mainly held in solution by the water, and thus when taken into the stomach is in the best possible state for digestion. This seems to be the reason for the greater

feeding value of all green foods. Thus grass fattens faster than the same grass made into hay; but the proportionate difference between grass and hay is far less than between ensilage and cured corn, the difference seeming to be in the fact that corn contains more water, and therefore requires more woody matter to carry the water. The same fact applies to roots, their value resting on the same principle as that of ensilage, only to a greater extent. And also when fed in connection with dry feeds, the water contained in roots assists digestion to a greater extent than the same amount of water taken by drinking. This then is the reason for their greater feeding value; that they approach nearer to the character of grass.

Now for a few facts about roots. Our root crop this year was all Swede turnips. Sixteen acres averaged 750 bushels per acre at sixty pounds to a bushel, making a yield of thirteen and one half tons an acre. The cost is as follows. Ploughing three times, at \$3 per acre, \$9; harrowing, rolling, etc., \$8; hauling manure, \$3; manure, fourteen loads, at 25 cents, \$3.50; seed, 27 cents; pulling, \$2; hauling, \$8; total cost per acre, \$28.77. Thirteen and one half tons cost \$1.76 a ton, and when once harvested no weighing or other expensive labour is required. A ton of turnips is therefore cheaper than a ton of ensilage corn. A ton a month is sixty-six pounds a day, which is a good average ration. It is true, roots cannot be fed with good results alone. It is also equally true of ensilage, hay, bran, or meal of some kind, must be fed in connection therewith. I do not disparage ensilage in the least, for I believe where roots cannot be grown it will fill their place, but as an entire food it can no more be depended upon than roots, as any one can perceive who has studied all the practical experience of those who have tried it; all admitting that meal, bran, or hay, must be fed in connection therewith.

Let us then think twice before we convert, at a great expense, our cellars into a silos, before we purchase expensive machinery to perform the labour of cutting and moving; and let us not forget an old friend, before we have taxed his utmost capabilities—an old friend which has often helped us through a season of short hay crop, and also of short money crop.

At Mr. T. Tim's sale in East Nissouri, the other day, this year's calves sold at \$16.

SOME fine Arab horses were sold at auction, a few weeks ago, in London, England. About two hundred persons were present at the sale, among them Lord Bradford, Lord Rosslyn, Lord Hardings, and Mr. Percy Wyndham. Eleven horses were offered, and the total proceeds were \$7,750. Pharaoh, a pure Arab stallion, brought \$2,265 from Count Potoki, who takes him to Poland. Brood mares averaged \$600 each, and a two-year-old filly went for \$750.

THE REV. MR. GILLESPIE, secretary of the Galloway Cattle Society of Scotland, said at the last annual meeting of Dumfries that, while the Polled Angus was a magnificent breed for particular circumstances, Galloways, he believed, were the best adapted of all breeds for the purposes of Canadian American breeders who wished to rid their horned cattle of these needless appendages. He ventured to affirm that were a pure, well-bred Galloway bull was put to cows of any horned breed, the produce in ninety-nine cases out of every 100 would be Polled.

A VALUABLE REVIEW.

In order to make room for the summary of the report from Bureau of Industries for November, we leave over several editorials which should have appeared in this issue. Mr. Blue's report is reasonable and suggestive. The portion referring to the average yield of certain cereals in Ontario and nine States of the American Union must be very gratifying, and should have the effect of making Canadians more than ever satisfied with their own country. Altogether the summary given below will well repay careful perusal.

We have now reached the close of the growing season. It is a fitting time to review the results of farm operations for the year; to note the progress made in threshing and marketing grain, and in gathering the fall crops of fruit and roots; to give an account of the condition of live stock and the supplies of animal products, the breadth and appearance of the new crop of fall wheat, and the preparation of land for next spring's seeding.

The November Report of the Bureau of Industries deals with these and other subjects, the main object kept in view being to narrate facts rather than to draw inferences or express opinions. Additional statistics are also given, and the tables published in earlier Reports (having been carefully revised with the aid of more complete data) are reproduced. They show in concise form the extent and results of agricultural industry in Ontario this year,—the area of occupied and cleared lands, the acreage and produce of crops, the numbers of live stock, and the values of farm property.

The early part of the season gave but a faint promise of the rich harvest that has been gathered. April was dry and cold, with raw winds from the north and east, and sharp frosts almost every night. The temperature continued low until late in May, easterly winds prevailing, but with a marked increase in the rainfall. Forest trees were not fully out in leaf at the end of that month, and spring grains and grasses showed only a short and sickly growth. The fall wheat and clover had suffered greatly by the alternate freezings and thawings, and the fruit crop was ruined in the blossom by the conjoined effects of frost, wind and chilling rains.

But a marked change came with the month of June. There were warm days and genial showers, and under these influences grass and grain crops made vigorous growth, steadily improving until they were ready for the mower and reaper. Indeed it is doubtful if better crops all round have ever before been produced in the country, the only failures worthy of mention being orchard fruits and clover. Some damage and considerable delay were caused in western counties of the Province by the heavy rains of the wheat harvest season; but compensation was made in the benefits to corn, roots and pastures, which had suffered by the drought of July.

The bountiful nature of the harvest has been referred to. But this good fortune was not given to Ontario alone; large crops have been the rule nearly all over the continent,—a fact which must not be lost sight of when comparisons are made.

The reports of correspondents show that all late ripening crops have been favoured by the fall weather. There was generally just enough rain in August and the early part of September to promote healthy growth, and over a large part of the Province there was no frost to hurt vegetation until the 19th of October.

Corn, which fared badly throughout June and July, was greatly improved in the latter part of the season. It is an excellent crop in Essex and Kent, and fairly good in portions of Lambton, Middlesex, Oxford, Brant, Elgin, Norfolk and some of the Lake Ontario counties. In the counties of the St. Lawrence and Ottawa group it is a light crop and poor sample, having been caught in an immature state by fall rains and frosts, and in other parts of the Province little is grown.

Field beans are grown mainly in the counties of Kent and Norfolk in the west, and in the counties along the Ottawa river in the east. In the latter district there has been an excellent yield, though in some localities injury was done by frost. There has been also a good crop in Norfolk, but in Kent it ripened unevenly owing, doubtless, to the excess of August rains.

There was a large area under buckwheat in the eastern counties of the Province, towards the lower end of Lake Ontario, and between the St. Lawrence and Ottawa rivers. It ripened well, and is reported to be the best crop in many years, but some fields were partially destroyed by the gale of September 14th, and others by early frosts and wet weather at the reaping season. The largest and best crops in the west were grown in the county of Norfolk.

In all parts of the Province clover was seriously injured by winter exposure and spring frosts, and the comparatively few fields that were kept for seed have produced inferior or worthless crops. The best reports come from

Essex and Kent, but even in those counties the seed is found to be small and shrunken. Elsewhere it has been almost wholly destroyed by blight and the mildew.

The root crops have been variously affected. In some districts, as in the Niagara peninsula, in the Georgian Bay counties, along the shore of Lake Ontario and in the St. Lawrence and Ottawa counties, the effects of summer droughts were felt, and the heavy rains of a later period were followed over large areas by the appearance of the potato rot. Then the potato beetle and the turnip fly were busy everywhere, and for a time the outlook was not very cheering. But the rot soon ceased to cause anxiety, and under favourable fall weather late potatoes, and especially turnips and mangolds, satisfied the most sanguine hopes of the husbandman. A larger or better crop of field roots has never been grown in the cattle-feeding counties of western Ontario.

Meagre crops of orchard fruits are the rule in all the best fruit-growing counties, and good ones are reported only from the poorest—a result partly, no doubt, of climatic causes. Vegetation is several days earlier in the western portion of the Province than in the eastern, and this year a severe frost occurred soon after the blossoming of fruit trees in the former district and before they had blossomed in the latter. But while orchards were healthy in the east, and trees made good growth, they were stricken with a blight in the west that blasted both leaf and fruit, from which they did not recover until late in the season. The cause of the blight is not well understood, although many theories are advanced, but the opinion is generally expressed that it was temporary as well as local in its character. The codling moth was also a worse pest among the apple trees than usual, and by the gale of September 14th nearly the whole of the affected fruit was blown down; in many districts a fourth of the crop was stripped off by that storm. Peaches were a small crop, owing partly to the effects of an ice-storm last winter and partly to frost at the flowering season. There was an average supply of pears in the country, and in the western counties grapes were plentiful and ripened well.

With the exception of three or four counties where local droughts prevailed pastures have been fresh and rich all the season, and live stock are reported to be healthy and in good flesh. Sales of store animals have been active for some time, and it is specially noticed that the stock of mature steers for stall feeding is much lower now than two years ago. The practice in the best grazing districts is to give cattle meal on the grass, and large numbers fitted in this way are sold to dealers in the summer and early fall. An instance of the extent of this trade is furnished by the county of Middlesex, where it is stated that more than 8,000 have been sold for export this year at an average of \$80 per head. Many farmers, however—encouraged by the high price of meat, the abundant crop of the roots and the low price of coarse grains—are buying up second and third class cattle to feed all winter for the spring markets. Hogs are scarce, but a large percentage of the whole has been shut up for fattening. A fair surplus of sheep and lambs is held in the inland counties, where there is a growing preference for Downs; in the Lake Erie and St. Lawrence counties drovers buying for the American markets always keep the supply low. Fine pastures, steady demand and good prices combined to favour the cheese industry this season, and a very large quantity has been made and exported. The butter supply is consequently below the average of former years, but it will increase as the factories close.

The bulk of this year's grain crops is no doubt in farmer's hands, and a large proportion of it is yet unthreshed. The late harvest, the sowing of fall wheat and the taking up of root crops have operated to some extent to delay marketing, but the principal reason is the lowness of prices; farmers are only selling enough to meet pressing demands. A good deal of the fall wheat threshed after harvest to make room for the spring grain found its way to market, but little has been sold since. The good quality of the barley grown in the Bay of Quinté region—where it was reaped and housed in fine condition—has induced buyers to offer good prices there. In the western counties on the other hand, where it was discoloured by rains, prices rule low, and there is reason to believe that a large part of it will be fed at home.

The Tables of Statistics show what the farmers of Ontario have done, and are doing. The total number of farms in the Province is 201,766, embracing an area of 19,602,387 acres, of which 10,211,960 acres are cleared. The value of farm land is set down at \$651,882,030, and the total of land, buildings, implements and live stock at \$882,023,400.

The area under grain crops this year was 5,002,067 acres, or 48 per cent. of all the cleared land. The acreage and production of each crop are given as follows. Fall wheat, 1,188,520 acres, 31,255,402 bushels; spring wheat, 536,817 acres, 9,665,999 bushels; barley, 848,617 acres, 24,284,407 bushels; oats, 1,375,415 acres, 50,097,997 bushels; rye, 189,031 acres, 3,549,899 bushels; peas, 557,157 acres, 10,943,357 bushels; corn, 206,924 acres, 13,420,984 bushels (in the ear); buckwheat, 49,536 acres, 1,247,943 bushels. The total of spring and fall wheat is 1,775,337

acres, yielding 40,921,401 bushels, or an average of 23.05 bushels per acre.

The produce of each kind of grain is based on the returns of threshers and the reports of correspondents—the method adopted by the Department of Agriculture at Washington and by several State Bureaus. The following table gives the average of bushels per acre this year for the Province of Ontario and for nine of the principal wheat-growing States, the figures for the latter being taken from the October Report of the United States Department of Agriculture.

	Fall Wheat	Spring Wheat	Barley	Oats	Rye
Ontario	20.3	16.5	28.0	36.4	18.8
Ohio	16.7	19.0	25.2	33.3	17.0
Michigan	17.8	24.0	27.0	16.1	15.5
Indiana	15.7	22.5	37.4	16.6	15.5
Illinois	16.0	23.0	34.5	22.3	18.0
Missouri	14.0	23.7	38.1	14.3	18.0
Kansas	19.5	11.0	21.7	40.0	20.0
Iowa	13.3	23.3	40.0	18.0	20.0
Minnesota	16.7	29.2	45.0	20.0	
Dakota					

It is only necessary to add that in the American States the grain crops are regarded as exceptionally good this year. The comparison of averages therefore makes a remarkably good showing for Ontario.

The total produce of beans is computed to be 409,910 bushels; of potatoes, 18,432,145 bushels; of mangold wurtzels, 7,711,420 bushels; of carrots, 4,009,975 bushels; and of turnips, 35,359,341 bushels. The area under meadow and clover was 1,825,890 acres, and the produce 2,090,626 tons, being an average of only 1.14 tons per acre. The damage done to clover by winter exposure and spring frosts accounts for this poor result. Orchard and garden embrace an area of 213,846 acres, and vineyard 2,098 acres. The returns for the latter are doubtless imperfect.

The tables of live stock show that the number of farm horses in the Province on the 31st of May was 503,604; of cattle, 1,586,312; of sheep, 1,915,303; of hogs, 850,226; and of poultry, 5,352,120. The number of milch cows was 665,382, and of thoroughbred cattle, 23,629; the returns of the latter, however, were incomplete. Of sheep one year and over 933,143 were returned as coarse-woolled, and 178,299 as fine-woolled; the average weight per fleece of coarse wool was 5.19 lbs., and of fine wool 5 13 lbs. The number of hogs one year and over was 232,415, and under one year 597,811. The number of turkeys was 310,058; of geese, 533,357, and of other fowls, 4,508,705.

A large breadth of fall wheat has been sown, but it was got in late and much of the ground was in poor condition. The rains of August prolonged the harvesting season, and farmers were not able to give the usual care to fallows. Besides, as an increased acreage almost invariably follows a good crop, quantities of indifferently tilled and manured stubble land have been pressed into service. In many parts of the country—especially in the western counties—the ground was hard to work, owing to the drought of September, and some fields were sown as late as the 20th of October. The young plant has in these districts made slow growth, for want of stimulating rains, and has neither rooted nor tillered well; yet it looks healthy and has a fairly promising appearance. In the eastern counties, where the September rainfall was greater, the land was in good tilth and the crop is in fine condition. A few reports make mention of injury done by the Hessian fly, the wire-worm and the white grub, but it has been in no instance serious.

It appears from the reports of correspondents that much attention is being paid to underdrainage and to manuring the soil. The value of drainage has been strongly enforced by the experience of this year, and in many sections the work is only limited by the scarcity of labour and of tiles. Large quantities of salt and plaster are used on grain, root and grass crops, but there is a growing opinion that the best way to keep up the strength of the land is to increase the manure heap,—which means, to quote the remark of a Wellington correspondent, that "there is nothing like plenty beef and mutton to the acre." Salt is less used as a fertilizer this year for the reason that manufacturers have doubled the price, and phosphates are generally used in limited quantities only by way of experiment.

Slow progress has been made with fall ploughing, the ground being generally too hard and dry; but the prolonged season has been a boon to all who were behind with this important work.

MORE than half the newspapers in the world are printed in the English language.

IN Bristol and Clifton, England, nearly 9,000 persons have signed requests to the local postmaster that their own letters may be retained at the post office during the Sabbath. This has so far diminished the work of the letter-carriers that every other Sunday they are permitted to be "off duty."

SHEEP AND SWINE.

THE COTSWOLDS.

Mr. Stone, of Guelph, claims to have been the first in his section of country to introduce the Cotswold sheep. He had, he says, at first a difficulty in inducing anyone to look at them, but by degrees that prejudice vanished, and now no sheep has among its breeders more enthusiastic admirers than the Cotswold. Mr. Stone is a man however, who looks at everything in a most practical manner, and is no more prejudiced in favour of his Cotswolds than of his beautiful white-faced cattle. As regards wool, he says:—

'We find it difficult to keep up the same quality of wool here as they do in England; our climate is too dry and hot. I fancy that the Southdown would keep up its quality of wool better than the Cotswold in this country. If the farmers would use a Cotswold ewe with a Shrop-

shire or Southdown buck I think they would have better wool.

for a medium wool very favourably coincides with the requirements of the market for mutton. Mr. Douglass, of Percy Township, Northumberland, keeps both pure-bred Cotswolds and Leicesters. He says:—

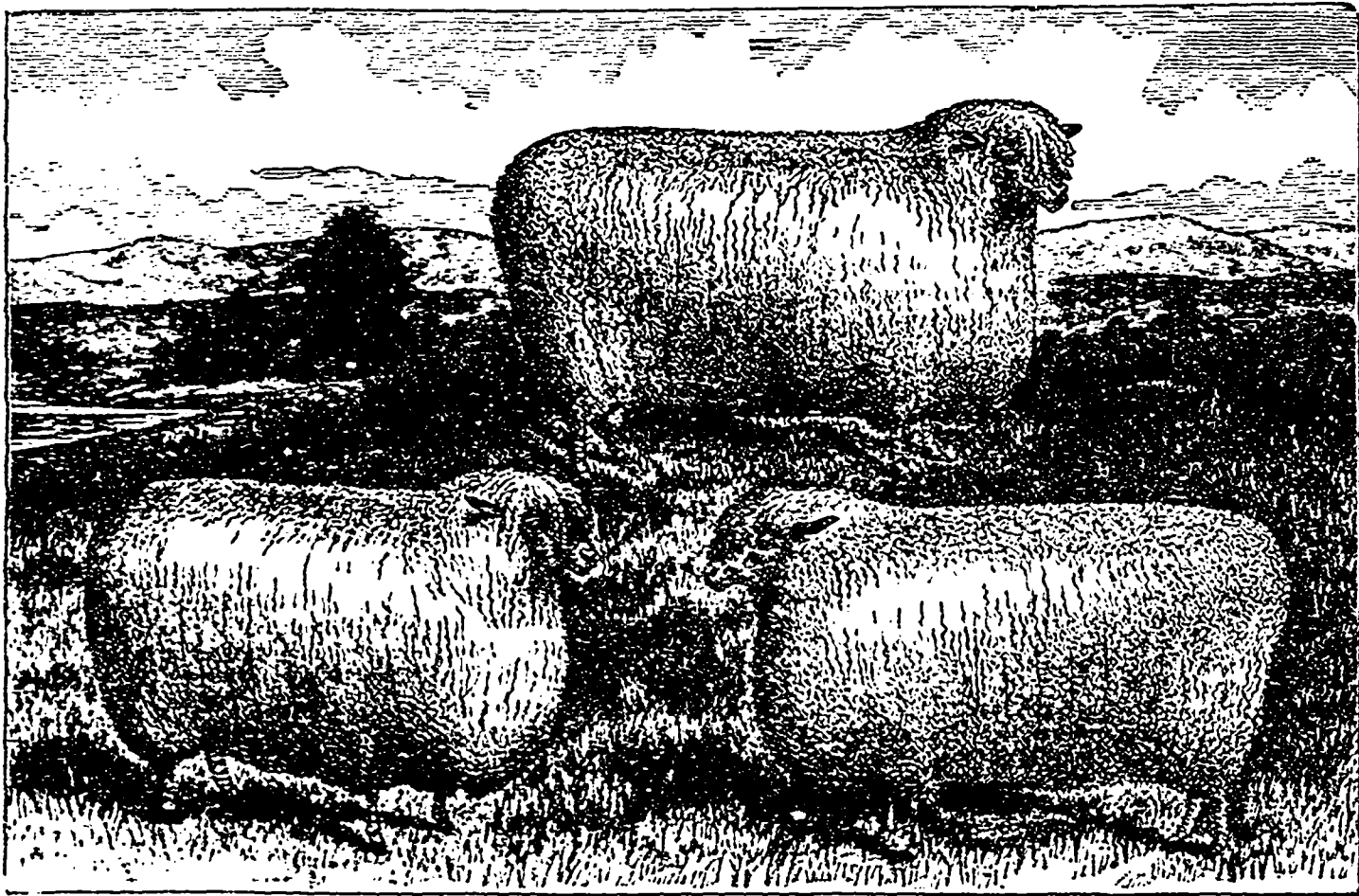
"I generally get a clip of ten pounds washed wool from Leicesters or Cotswolds, though I have a Cotswold ewe which sometimes gives sixteen pounds. The Cotswolds give a little more wool than the Leicesters, and we get about the same price for the wools. The Leicesters of my flock are the Border or large Leicester breed."

Mr. Smellie, of Vaughan (York), says of the Cotswold:—

"From the Cotswold I get seven or eight pounds of wool. I have always been able to sell my wool, but not at a very high figure. This year after clipping time was over, I think it was twenty-seven cents I got for mine, and last year the price was not so high. Of course if the sheep are better fed the wool is more abundant."—*Report of the Ontario Agricultural Commission.*

SWINE RAISING.

Pure air helps to make pure blood, which, in the course of nature, builds up healthful bodies. Out-of-door pigs would not show so well at the fairs, and would probably be passed over by judges and people who have been taught to admire only the fat and helpless things which get the prizes. Such pigs are well adapted to fill lard kegs, whereas the standard of perfection should be a pig which will make the most ham with the least wast of fat, the longest and deepest sides, with the most lean meat; it should have bone enough to allow it to stand up and help itself to food, and carry with it the evidence of health and natural development in all its parts. Pigs which run in a range or pasture have good appetites—the fresh air and exercise give them this—hence they will eat a great variety of food and much coarser than when confined in pens. Nothing need go to waste on



COTSWOLDS.

But now there is not so much demand for wool of the length that there formerly was. With the machinery now in use, wool four or five inches long can be worked as well, provided it has the same texture, as that eight or twelve inches long. I am quite satisfied that if I had a large quantity of wool from a cross of a Southdown on the Cotswold, I could command three to five cents a pound more for it than for the very coarse wool of the other breeds.

"I don't think that cross reduces the quantity very much. I have seen some fleeces in which the wool, though not so long, was thicker. The weight was pretty nearly the same. The quantity of wool depends very much on the weight of the sheep.

"The tendency of the market is at present towards shorter wool; there is a better demand for Southdown wool now than there has been for some time."

This points to two conclusions. First, that, no matter what the demand for, or increasing popularity of, the Downs, the Cotswolds may still, even from a wool dealer's point of view, be bred to advantage; and, secondly, that the present demand

IMPORTANCE OF USING GOOD BOARS.

December is the month when the coupling will mostly be done for next spring's crop of pigs, and next winter's crop of fat hogs. Their value will depend in a great degree on the quality of the boar by which they are sired; and if he is well bred, well shaped and prepotent, he will do much to overcome defects in the sows, and beget pigs of good form, stamina and uniform excellence—and the latter is really all the "uniformity" worth anything. If the boar is of mixed breeding, doubtful quality, and has a good deal of daylight under him, some of his pigs will inherit one or more of his shortcomings, and some others, or all of them, no two of which will be like, except in worthlessness, the results will be in no wise satisfactory, from the time they are farrowed to the day when they are weighed up to their—in too many instances—unfortunate purchaser or consumer. In hog raising, the only way to go right, is to start right, and no man can do that with a poor, or so-called "cheap" boar.—*Live Stock Journal.*

the farm for lack of a market. They will consume all the refuse fruit, roots, pumpkins and all kinds of vegetables, which will make them grow. By extending the root patch, and planting the fodder corn thinner, so nubbins will form on it, and by putting in a sweet variety, the number of pigs may be increased in proportion. A few bushels of corn at the end of the season will finish off the pig. The pig pasture will be ready the next year for any crop, and ten times the advantage accrue to the farm than if the pigs are confined in close pens, for, as pigs are usually managed on the farm, but little manure is ever made from them.—*Col. F. D. Curtis, in American Agriculturist for October.*

An old and distinguished breeder of sheep of all improved breeds says it has been his unvaried experience that a yearling lamb is less useful and profitable than a lamb or two-year-old sheep. Having bred sheep for years, our informant is in a position to know. He prefers a good, strong ram lamb, to a ram of any other age, and believes that the product of the former will prove better than the latter.

THE DAIRY.

TREATMENT OF MILCH COWS IN EARLY WINTER.

At no season of the year do milch cows need better and more generous diet than in early winter. The change from grass to dry fodder is of itself sufficient cause to produce more or less derangement of health. But when the animal's tone and vigour have been lowered by a long period of milking, and she is then subjected at the same time to the rigours of winter and a change of food from nutritious herbage to dry, coarse, and often innutritious fodder, a severe tax is laid on her system. Yet on many farms it is the practice to feed to cattle in early winter only coarse and inferior fodder and the poorest hay, because these articles have been stored last in the barn or on the tops of the mows, and must, therefore, be disposed of before the better portions of the supply can be reached. This, however, is a great mistake, as the best food should be given when the cows first go into winter quarters. Afterward, when they have been dried of their milk and have grown accustomed to the change of diet, the poorer food may be used; or, better still, as animals, like men, are fond of variety in their diet, the coarser and less nutritious fodder may be advantageously used in conjunction with that of a better quality.

Through neglect of this precaution, however, it frequently happens that cows in milk loose flesh during November and December, and sink into a bad condition to endure the still more severe weather yet to be expected. To avoid this misfortune, in cases where poor or damaged fodder has necessarily to be given out first, the feed should be supplemented with rations of ground grain, oat and cornmeal mixed, bran, or ship-stuff, to add a proper amount of nutriment to a given bulk of fodder. Compelling cows to consume an excessive bulk of inferior food in order to enable them to support life and yield milk overloads the stomach, tends to derange health, and is by no means a rare cause of serious ailments. Among these, not the least disastrous is a serious liability to abortion, caused by an undue pressure of the food upon the parts. Moreover, on the score of self-interest, as well as of humanity, cows should not be allowed to lose flesh in early winter; for it would require much more food to restore them to good condition in cold weather than in summer. Besides this, as lean animals are more susceptible of cold than those in flesh, and a proportionately larger amount of the food they consume is, therefore, expended in generating a sufficiency of animal heat, it would require considerably more food to carry a poor beast through winter than a fat one, even though nothing may be added to the animal's condition.

The necessity of shelter for all kinds of stock from the storms, frosts, and inclemency of this bleak season has been frequently dwelt upon in these pages, and its economy, as well as its humanity, fully demonstrated.

Another cause of injury to cows is that they are often milked too long in the season. Every cow that drops a calf annually should go dry, for the purpose of rest and recuperation, not less than six weeks before calving; and in many instances this time should be extended to ten or twelve weeks. If the animal is in full flesh and about to come in during the pasturing season, she may, as a rule, be milked ten and a half months in the year; whereas, when the same cow is expected to calve during the foddering season she ought to go dry at least for two months, and an animal in thin flesh should have three months for recuperation and rest. This interval allows her time to make up the wastes of the system, so

as to produce a healthy offspring and be in a condition to yield a full supply of milk the following season. Cows that do not readily dry of their milk will, of course, require to be milked somewhat later; but these are exceptional cases. If a cow in poor condition is milked during most of the winter months, more will be lost in the production of butter and cheese the following summer than was gained by milking her through the winter.

In drying cows care should be taken that all the milk should be drawn at each milking. The habit which some have of only partially emptying the udder, from time to time, when drying cows, is highly objectionable, as the milk left in the bag becomes thick and putrid, causing irritation and inflammation, and not infrequently resulting in the loss of a teat or a portion of the bag the next season. When cows are being dried off, they should be examined at intervals of a few days, and every drop of the accumulated milk should be drawn from the udder. Indeed, with cows that are supposed to be dry, it is advisable to try their teats at least once a week, to see if there be any accumulations of milk.—*Rural New Yorker.*

FOOD FOR DAIRY COWS.

Rich old grass is the most natural and best of all cattle foods for producing milk of good quality. It is a grave mistake, practised by many intelligent farmers, to keep cows on poor, bare pasture, without any assistance in the way of house-feeding. Many seem to imagine that land which has been tilled for many years without recuperation, until it has become useless for grain growing, is quite good enough for pasture purposes, and therefore stint their cows of a proper quantity of nourishment. Nothing could be more shortsighted and unprofitable. It requires, in the first place, a large proportion of food to keep the animal in a strong, healthy condition, and it is the surplus assimilated after making good the natural wastes that goes to increase the animal or for the production of milk. An animal of sound constitution, healthy digestion, and well-developed lacteal organs will prove a good milker.

Those who wish proper returns from their cows should, therefore, see that they are properly supplied with healthy food and plenty of good, pure water. The quality of milk varies with the different breeds of cattle, their age, the food eaten, and at different periods of the year. The milk of old cows is much thinner than that of young ones of the same breed.

SALTING BUTTER.

Butter is usually salted in accordance with the demands of the market to which it is to be sent. American butter is generally salted at the rate of about one ounce to the pound. Perhaps the greater part of the sweet-cream butter has half or less than half that quantity. In the south of Europe, indeed all Latin countries, oil is in more general use than butter, and unsalted butter is preferred. The Parisian custom of serving butter entirely unsalted is sometimes aped in England and some of our American cities, but, as a rule the markets demand that the butter shall carry more than half an ounce of salt.

Unsalted butter will keep forever—provided it is butter and only butter. But the butter of commerce is never pure. It retains more or less of the other properties of the milk, and it is these which, while they add very much to its value, are subject to almost immediate deterioration, and in turn tend to injure the butter itself. Even salt will not long preserve them. Unsalted butter does not "keep." The use of salt in butter is more for flavouring than for preservative purposes.

The protection and preservation of butter are due far more to the package than to the salt which is put in it.—*Dairyman.*

FEEDING COWS.

The *Live Stock Journal*, in regard to feeding cows well, says:—"There is less excuse for feeding a good milch cow stingily than any other farm animal. She does not ask any credit, she makes prompt daily payment, and her produce is a cash article. If he has not the food at hand, prudence and good judgment, as well as humanity, require him to furnish her full rations at all times, without regard to a favourable or unfavourable season. We always counsel dairymen to make an earnest effort to produce all the food for their herds upon their own farms, but the first principle of profitable dairying requires that they give abundant food to keep up an even flow of milk, whether they produce or purchase the food."

It is well for the practical dairyman, when selecting animals for dairy use, to consider well the merits of the Ayrshires. Holsteins are noted for the great yield of milk, and Jerseys are equally noted for quality, while the milk of the Ayrshire cow may be said to be between these two extremes—that is, a fair yield and a good quality.

The highest bred cows, it must be remembered, are not often the best milkers, and often the ugliest looking cow in the herd yields the most milk. Good milkers invariably show very angular outlines, for it cannot be expected the cow should be yielding a large quantity of milk and putting plenty of flesh upon her bones at the same time.

Fine butter can only be obtained by churning at a favourable temperature. If the temperature of the cream is too low, the butter will be long in coming and will be hard in texture. If the temperature is too high, the butter will come very speedily, but the product will be greasy, destitute of grain, and deficient in quantity.—*Farm, Herd and Home.*

A writer in the *New York Times* emphasizes the fact that the profit of the dairyman comes wholly from his good cows, and that many a dairy might be reduced one-half in number of its cows and the dairyman make more profit than he may have done from the whole original number; because one poor cow will not only "eat off its own head," but will eat off that of another and a better one, too, before it has equalized the profit and loss of the keep of the two.

An exchange says: "Were we proposing to build a new dairy-room on an extended scale, we would, with our present views, have a large work-room where the milk could be skimmed, the cream churned, and the butter worked and packed. In this room we would have a chance for a fire, and plenty of water, both hot and cold; also plenty of light from large windows, protected in summer by blinds and screens. Trees and climbing vines should keep off the direct rays of the summer sun, so that cream could be churned and butter worked in summer without being carried to the cellar."

HON. X. A. WILLARD, of Little Falls, N.Y., is afraid that United States dairymen will be injured by Canadian competition in the British markets, if Canadian butter and cheese-makers continue to progress as they have done in the past few years. In a letter to the *American Agriculturist*, he says: "Canada has become a formidable competitor with us in export of dairy produce. Canada now makes goods of the finest quality, and cheese-dairying is rapidly developing in the Dominion. At the present rate of increase she will be able, at no distant date, to supply England with all the cheese needed, provided the dairy industry of Britain is kept up."

HOME CIRCLE.

A QUEEN'S TENDERNESS.

There is so much cruel forgetfulness of the rights of inferiors and servants, on the part of the "privileged classes" generally, that we are always pleased and refreshed to read the stories which are told of Victoria's good heart and kind consideration. Grace Greenwood relates the following:

When I was in England I heard several pleasant anecdotes of the queen and her family from a lady who had received them from her friend, the governess of the royal children. The governess, a very interesting young lady, was the orphan daughter of a Scottish clergyman. During the first year of her residence at Windsor, her mother died. When she first received the news of her mother's serious illness, she applied to the queen to be allowed to resign her situation, feeling that to her mother she owed even a more sacred duty than to her sovereign.

The queen, who had been much pleased with her, would not hear of her making this sacrifice, but said, in a tone of the most gentle sympathy:

"Go at once to your mother, child; stay with her as long as she needs you, and then come back to us. Prince Albert and I will hear the children's lessons; so, in any event, let your mind be at rest in regard to your pupils."

The governess went and had several weeks' sweet mournful communion with her dying mother. Then when she had seen that dear form laid to sleep under the daisies in the old kirkyard, she returned to the palace, where the loneliness of royal grandeur would have oppressed her sorrowing heart beyond endurance had it not been for the gracious womanly sympathy of the queen—who came every day to her school room—and the considerate kindness of her young pupils.

A year went by, the great anniversary of her great loss dawned upon her, and she was overwhelmed as never before by the utter loneliness of her grief. She felt that no one in all the great household knew how much goodness and sweetness passed out of mortal life that day a year ago, or could give one tear, one thought, to that grave under the Scottish daisies.

Every morning before breakfast, which the elder children took with their father and mother in their pleasant crimson parlour looking out on the terrace at Windsor, her pupils came to the school room for a brief religious exercise. This morning the voice of the governess trembled in reading the Scriptures of the day. Some words of divine tenderness were too much for her poor, lonely, grieving heart—her strength gave way, and laying her hands on the desk before her, she burst into tears, murmuring, "O, mother, mother!"

One after another, the children stole out of the room, and went to their mother to tell her how sadly the governess was feeling; and that kind-hearted monarch, exclaiming:

"Oh, poor girl, it is the anniversary of her mother's death," hurried to the school room, where she found Miss — struggling to regain her composure.

"My poor child," she said, "I am sorry the children disturbed you this morning. I meant to have given orders that you should have this day entirely to yourself. Take it as a sad, sacred holiday—I will hear the lessons of the children." And then she added, "To show you that I have not forgotten this mournful anniversary, I bring you this gift," clasping on her arm a beautiful mourning bracelet, with a lock of her mother's hair, marked with the date of her mother's death. What wonder that the orphan kissed with tears this gift, and the more than royal hand that bestowed it?

HINDOO MANNERS AND CUSTOMS.

The London "Times," in reviewing a recently published book by Shib Chunder Bose, "Hindoo Manners and Customs," says:

"Wealthy Hindoos are often lavishly ostentatious when a death, a marriage, or one of the annual religious festivals offer them an occasion for parading their generosity. They illuminate gardens that reflect the pleasures of their paradise; they throw their mansions open to all comers; they feed troops of beggars and priests for days, and sometimes for weeks. And although a Bengali, as a rule, is frugal to stinginess, looking closely to the expenditure of each rupee, the observances of his faith must be a heavy tax on him. As the Brahmins live at the expense of the laymen, it is to their interest to see that these observances are maintained. The great Doorga Poojah festival in itself must be a fruitful source of embarrassments and insolencies. Everybody is bound, if possible, to live in luxury for the time, to indulge in merry-making that degenerates into orgies, and dress in new and sumptuous clothing from head to foot. Persons in straitened circumstances, who actually live from hand to mouth, deposit their hard-earned savings for a twelvemonth to be spent on this grand festival. The beggars have their wants freely relieved, and it is the season to which mendicant Brahmins look forward as the occasion for replenishing their empty purses. According to the author, it has been roughly estimated that \$50,000,000 are spent annually in Bengal alone, directly or indirectly; and the Doorga Poojah only represents on an exaggerated scale a waste that is going forward at intervals through all the rest of the year. Either on religious grounds or on the occasion of family ceremonies, there are many days when a circle of acquaintances must be entertained, and when offerings which must become the perquisite of the officiating priest must be laid before the shrine of the tutelary idol. So the Brahmins victimize the superstitious community, and yet the members of the sacred caste are so great that most of them barely keep body and soul together. This is a common saying that a Brahmin is a beggar, even if he possesses a lac of rupees, and 'if an officiating priest can make ten rupees a month he considers himself very well off.' Naturally, they cannot afford to be scrupulous, and it seems strange that, with their unblinking mendacity and their open disregard of morality, they retain their hold even on their ignorant devotees. The author relates facts to show that the most sacred laws of the caste are sacrificed to pecuniary temptations. The heads of the order have consented to condone the most flagrant offences when the culprit could afford to bribe them sufficiently."

WE'VE ALWAYS BEEN PROVIDED FOR.

"Good wife, what are you singing for? You know we've lost the hay,

And what we'll do with horse and kye is more than I can say; While like as not, with storm and rain, we'll lose both corn and wheat."

She looked up with a pleasant face, and answered low and sweet:

"There is a Heart, there is a Hand, we feel, but cannot see; We've always been provided for, and we shall always be."

He turned around with sudden gloom. She said: "Love, be at rest;

You cut the grass, worked soon and late, you did your very best,

That was your work; you've naught at all to do with wind and rain,

And do not doubt but you will reap rich fields of golden grain;

For there's a Heart, and there's a Hand, we feel, but cannot see;

We've always been provided for, and we shall always be."

"That's like a woman's reasoning; we must because we must."

She softly said: "I reason not; I only work and trust: The harvest may redeem the day, keep heart what'er betide; When one door shuts, I've always seen another open wide. There is a Heart, there is a Hand, we feel, but cannot see; We've always been provided for, and we shall always be."

He kissed the calm and trustful face; gone was his restless pain,

She heard him with a cheerful step go whistling down the lane,

And went about her household tasks full of a glad content,

Singing to time her busy hands as to and fro she went:

"There is a Heart, there is a Hand, we feel, but cannot see; We've always been provided for, and we shall always be."

Days come and go, 'twas Christmas tide, and the great fire burned clear.

The farmer said: "Dear wife, it's been a good and happy year;

The fruit was gain, the surplus corn has brought the hay, you know."

She lifted then a smiling face, and said: "I told you so!

For there's a Heart, and there's a Hand, we feel, but cannot see;

We've always been provided for, and we shall always be."

POISONS AND ANTIDOTES.

The following list contains some of the more common poisons, and the remedies likely to be at hand in households:

Acids—These cause great heat and sensation of burning pain from the mouth down to the stomach. Remedies, magnesia, soda, pearl-ash or soap dissolved in water; then use the stomach pump or emetic.

Alkalies—The remedy is vinegar.

Ammonia—Remedies, lemon juice or vinegar.

Alcohol—First clean out the stomach by an emetic, then dash cold water on the head and give ammonia (spirits of hartshorn).

Arsenic—In the first place, evacuate the stomach, then give the white of eggs, lime water, or chalk and water, charcoal, and the preparations of iron, particularly hydrate.

White lead and sugar of lead—Remedies, alum, cathartic, such as castor oil and epsom salts especially.

Charcoal—In poisons by carbonic acid gas, remove the patient to the open air, dash cold water on the head and body, and stimulate the nostrils and lungs by hartshorn, at the same time rubbing the chest briskly.

Corrosive sublimate—Give white of eggs and emetic.

Belladonna, night henbane—Give emetics, and then give plenty of water and vinegar, or lemonade.

Mushrooms—Emetics, and then plenty of vinegar and water, with doses of either, if handy.

Nitrate of silver (lunar caustic)—Give a strong solution of common salt, and then emetics.

Snake bites, etc.—Apply immediately strong hartshorn, and then take it internally; also give sweet oil stimulants freely; apply a ligature above the part bitten, and then apply a cupping glass.

Tartar emetic—Give large doses of tea made of galls, peruvian bark or white oak bark.

Verdigris—Plenty of white eggs and water.

White vitrol—Give plenty of milk and water.

Opium—Give a strong emetic of mustard and water, then strong coffee and acid drinks; dash cold water on the head of the patient.

Nux vomica—First give emetics, then brandy.

Oxalic acid (frequently mistaken for Epsom salts)—Give chalk, magnesia, or soap and water, and other soothing drinks.

Prussic acid—When there is time, administer chlorine in the shape of soda or lime. Hot brandy and water, hartshorn and turpentine are also useful.

A CENTURY OF PROGRESS.

The last hundred years have seen the most sudden change in the British material and external life that is, perhaps, recorded in history. It is curious how many things date from that 1770 or 1780. The use of steam in manufactures and locomotion by sea and land, the textile revolution, the factory system, the enormous growth of population, the change from a rural to a town life, the portentous growth of the empire, the vast expansion of sea power, of commerce, of manufacture, of wealth, of intercommunication, of the post; then the use of gas, electricity, telegraphs, telephones, steam presses, sewing machines, air engines, gas engines, electric engines, photographs, tunnels, ship canals, and all the rest. Early

in the last century Britain was one of the lesser kingdoms in Europe, but one-third in size and numbers of France and Germany. Now it is in size twenty times—twenty twenty times as big as either, and six or seven times as populous as either. London then was only one of a dozen cities in Europe; hardly of the area of Manchester or Leeds. It is now the biggest and most populous city in recorded history, nearly equal in size and population to all the capitals of Europe put together. One hundred years ago to have lit the theatre as it is now lighted, would have cost £50, and the labour of two or three men for an hour to light and snuff and extinguish the candles. It is now done for a shilling by one man in three minutes. A hundred years ago to have taken us all to our homes at night would have cost on an average 5s. a head and two hours of weary jolting. We may get home now for 4d. or 6d. a head at the most in half an hour. If you wanted an answer from a friend in Dublin or Edinburgh it would have cost by post (one hundred years ago) about 2s. in money and a fortnight in time. You now get an answer in thirty hours for twopence, or a penny if you are as brief as the Prime minister. A hundred years ago, if you wanted to go there, it would have taken you a week, and you would have to make your will. You can now go in a day, and come back the next.—*Fortnightly for April.*

THE CHILD IN THE PRINTING OFFICE.

Who is the Man that is looking so hard at the Piece of Paper? He is an Intelligent Compositor. Why does he hold the Paper so close to his Eyes? Because the Correspondent who wrote it makes Hen-tracks. What is he saying? He is saying, "I can't make out this stuff." And who is the Other Man going to the Case? That is the furious Foreman. What does he Want? He is going to Help the Intelligent Compositor decipher the hen-Tracks. Do you Think he Can do it? I don't know. he can do most Anything, but I Guess that will be Too Much for him. Now I see an Other man Coming. What is he Going to do? That is the Precise Proof Reader. He is Going to Cast his eagle Eye over the Hen Tracks to See where they Lead to. Do you think He can Find it out? No; not without a Guide or a Calcium light. Now, here comes Another man—who is the Man? That is the Able Editor. Where did he come From? From his Den. Now all the Men are close together—see! their Heads most touch—and they are Looking every One of them at the Piece of Paper. What do they do That for? Because they Are Concentrating their Giant intellects upon the piece of Paper to see What the hen-Track Correspondent means by his Hieroglyphics. Have they Found out? No, they are stumped. Now they are going Away from the Case. Yes, And one of the Men has chucked the Piece of Paper into the Stove. Why does he do That? Because he can't read the hen-Tracks. Who is the Small Boy that has a Grin on his face, and his Hat turned up in Front? He is the Office Boy. What is the Able Editor Saying to him? He is telling him to go after the Long Range shot Gun. What for? Because the Able Editor wants to go hunting after the hen-Track Correspondent. Will he hurt him? Yes he will, if he Catches him. Do you think the Correspondent ought to be Killed? Certainly.

"AS SAFE AS THE BANK OF ENGLAND."

"As safe as the Bank of England," is an assurance of safety which is never questioned. No one ever lost money in the Bank of England. Its notes are good all over the world. Many strangers go to see it. Only a few persons can go around at once, with a guide. In one room notes that have been paid have the corners torn off and holes punched in them. Over fifty thousand notes, worth a million pounds, are paid every day, and thus cut out. They are kept five years, and if you give the number and date of a note, in less than three minutes it can be found; so that if you paid a note you owed and a man said you did not do so, you could prove that you had paid it. The largest note is one thousand pounds. One hundred and twenty men are in the room where paid notes are clipped, and 1,200 in all the bank. All the notes used are printed in the bank, and the printing machines keep register of every one. Here pensions are paid to crippled soldiers. Here gold and silver plate—private property—is kept. Two things I heard interested me. "Gold is very brittle," said our guide. "If you throw it about upon a counter—that is a number of gold pieces—and then sweep it off the counter, you will find that the fragments count up. We are very careful with them in the weighing room. All the gold sovereigns that you put in your pockets in the morning with other pieces of coin, at night will not be just the same. We know that and weigh every sovereign that has once been out of the house. We have sent boxes of gold coin by express that have come back to us unopened, yet the rubbing of the gold has worn off five pounds' worth." We came away, agreeing that this great bank is one of the world's wonders.

TEA.

It is estimated that tea is habitually consumed by not less than 500,000,000 people, or about one-half of the human race. Amongst the Chinese and the inhabitants of Japan, Thibet and Napan it is drunk by all classes three or four times a day. In Asiatic Russia, in a large portion of Europe, in North America and in Australia it is a favourite beverage. In China tea has been used as an article of diet from a very remote period of antiquity. Curious enough they have no record or tradition respecting its first introduction. The Japanese, however, tell us that in the year 519 a holy man named Darma, the son of an Indian monarch, took refuge in China, and publicly taught that the only way to obtain happiness was to eat nothing but vegetables and go without sleep. This enthusiastic vegetarian and antimorphenian was, however, on a hot summer's day, overcome by drowsiness, and faintly nodded before his congregation. When he awoke to a knowledge of his violation of his own precept, great was his self-reproach, and being determined that he

would not transgress the second time, he cut off his eye-lids and threw them on the ground. In due time they took root, and gradually developed into the plant now known as tea. Tea was probably first introduced into Europe about the middle of the seventeenth century, for in 1661 Pepys writes in his Diary: "I sent for a cup of tea (a Chinese drink), of which I had never heard before." At first its use was not very common, as in the same century the East India Company considered it a rare gift to present the King of England with two pounds two ounces of tea. The plant which yields the tea leaves is a native of China, and still grows wild on the hills both of that country and Japan. The tea plants are raised from seed, which is sown in March. When a year old the young bushes are planted out, and when placed in rows three or four feet apart have some resemblance to gooseberry bushes. The season for gathering varies in different districts, but the principal leaf harvest is in May or June. The leaves are plucked by women, and are usually gathered at three successive periods. The youngest and earliest leaves are the most tender and delicate, and gives the highest flavoured tea. The second and third gatherings are more bitter and woody, and yield less soluble matter to water. The refuse and decayed leaves and twigs are sold under the name of "brick tea."

ESQUIMAUX DOG-TEAMS.

The dogs are attached to the sledge by harness made of either reindeer or seal skin. One loop passes around the neck, while each leg is lifted through a loop, all three loops joining over the back and fastened to a long seal-skin line. These lines are of different lengths, so as to allow the dogs to pull to a greater advantage than if all the traces were the same length, causing the dogs to spread out like a fan. At every few miles the traces have to be unloosened and extricated from the most abominable tangle that it is possible to conceive. This comes from a habit the dogs have of constantly running under and over the other traces to avoid the whip, or, in some cases, merely from a spirit of pure deviltry.

The leader of the team is a dog selected for his intelligence, and is one known as setting an example of constant industry under all circumstances. You will always see the leader of a team of dogs working as if the load was being drawn by him alone. He goes along, his head bent over, and tugging in his harness, his mouth open and his tongue lolling out, while his ears are ever ready to hear the word of command from the driver. To go to the left the command is given, "A-root," and to the right, "Why-ah-why-ha." Then he sometimes, to encourage or urge to greater exertion, says, "Ah-wah hagh-oo-ar." To stop the team, he says, "Whoah," as one says in driving horses. It is the noisiest method of travel yet invented, for the driver is always talking to his team, calling each by name, and usually following the word by a blow of the whip, so that the next time that dog is spoken to he will understand that it means to "hurry up." The work of the driver is not confined to his team. He has constantly to keep watch over the front of the sledge, to turn it to the right or left in order to avoid hummocks or stones that would upset the load or tear the ice from the bottom of the runners.

Innu are fond of riding on a sledge while travelling, and as long as there is a spot that will hold them they will pile up there. But should there be no place for them, they will run alongside without any apparent discomfort for almost any length of time or distance. This is equally true of the children of both sex, and when any are compelled to walk for lack of dogs or room on the sledge, it is the women and girls who have to give way to the men and boys. With a light sled, and from nine to fifteen good strong dogs, the Esquimaux of Hudson's Bay will sometimes make a journey of from eighty to one hundred miles during the long days of spring.

HELEN CHALMERS.

Helen Chalmers, the daughter of the great Free Church leader, sacrificed the bloom of her life and her womanly hopes to care for her venerable father in his declining years—a care which she continued until his death. Subsequent to this she took quarters in the worst district known in Edinburgh, and devoted her life and being to the reformation and salvation of the masses around her, who had been, to human appearance, ruined for both worlds by the demon of strong drink and accompanying vices. On her way to her temperance meeting one evening, she called upon a family to persuade the intemperate husband and father to accompany her to the place referred to. She found there a visitant deeply intoxicated. As soon as he saw her, he began of course "to talk religion," ending with the complacent remark, "Well, it will all come out right at last, and I shall find myself in the better land, as well off as any of you. Wont it be so, Miss Chalmers?" She promptly opened her Bible, and with an emphasis peculiar to herself, read the passage, "No drunkard shall inherit the kingdom of God." The man was sobered in a moment, accompanied her to the meeting, signed the pledge, and was saved. Many have been and are living thus saved through the prayers and influence of this saint of God. The life of even Florence Nightingale waxes dim when compared with that of Helen Chalmers.

THE HIGHLAND TARGET.

Many readers will be surprised to learn how moderate were its dimensions. The specimens here figured are not more than twenty or twenty-one inches in diameter—somewhat about half the width of the great round shield borne by the Homeric heroes. Probably the Highlandmen were in the right of it; their target made up in handiness what it abandoned in area. Being of no great weight, it would be readily movable, and to a certain extent it could even be a weapon of offence, for in several of these examples a formidable spike may be affixed to the central boss. When this is not in use, a case is provided for it in the deer-skin lining of the inner side. The material of the target is wood covered with leather; the metal-covered or metal shields are found

only as exceptions. Mr. Drummond has figured one bronze shield dug out of a marsh, and ornamented in a thoroughly archaic style, and one plain iron one, of whose date nothing is stated or conjectured. The regular covering of leather gave occasion for excellent ornamental work. It is best explained in bookbinder's language as blind tooling; and indeed there are many patterns on these targets from which the modern bookbinder might well take a hint. The flowing interlaced curves of some of them show a really admirable decorative taste and execution. We likewise find—sometimes together with this kind of ornament, sometimes instead of it—symmetrical arrangements of nail-heads and metal studs, and now and then of larger brass plates. These additions would to some extent increase the strength of the target, but their first purpose was evidently decoration. It was not until the seventeenth century that shields were fairly discarded in the rest of Europe. The swordsmen of Italy and France made the discovery, which at the time must have seemed a paradox, that the sword is stronger without the shield than with it. But the discovery was long in travelling northward; the Highlandman clung to his target for more than a century later, and its final disappearance from the Highland regiments is not much beyond living memory. Certainly one who possessed an ancestral target like those figured here might be excused for not willingly putting it aside as obsolete.—*The Saturday Review.*

THE BETTER LAND.

I know not where that city lifts
Its Jasper walls in air,
I know not where the glory beams,
So marvellously fair;

I cannot see the waving hands
Upon that farther shore,
I cannot hear the rapture song
Of dear ones gone before;

But dimmed and blinded earthly eyes,
Washed clear by contrite tears,
Sometimes catch glimpses of the light
From the eternal years.

—L. M. Latimer.

IN THE MORNING SOW THY SEED.

Sow, though the rock repel thee
In its cold and sterile pride;
Some cleft then may be given
Where the little seed may hide.
Fear not for some will flourish:
And though the tares abound
Like the willows by the waters
Will the scattered grains be found.
Work while the daylight lasteth
Ere the shades of night come on,
Ere the Lord of the vineyard cometh,
And the labourer's work is done.

EFFECT OF THE BIBLE.

Taine's "English Literature" has a remarkable passage, with reference to the effect of the Bible on the English people, as read and learned for the first time from Tyndal's Translation:—

"One hid his book in a hollow tree; another learned by heart an epistle and a Gospel, so as to be able to ponder it to himself even in the presence of his accusers. When sure of his friend, he speaks with him in private; and peasant talking to peasant, labourer to labourer, you know what the effect could be. It was the yeoman's sons, as Latimer said, who, more than others, maintained the faith of Christ in England, and it was with the yeoman's sons that Cromwell afterward reaped his Puritan victories. When such words are whispered through a nation, all official voices clamour in vain. The nation has found its poem, it stops its ears to the troublesome would-be distractors, and presently sings it out with a full voice and from a full heart. But the contagion had even reached the men in office, and Henry VIII. at last permitted the English Bible to be published. England had her book. Everyone, says Strype, who could buy this book, either read it assiduously or had it read to him by others, and many well advanced in years learned to read with the same object."

DOMESTIC HABITS OF VARIOUS NATIONS.

When a Japanese woman reaches her house, she takes off her sandals, pushes aside the sliding doors of paper and enters in her stocking feet. The rooms are softly matted, but contain no furniture. The houses are built of wood, and among the poorer classes have but two or three rooms. In the kitchen is a large stone box with ashes and burning coals in it. This is called the hibachi, and over it the rice is cooked. There is no chimney in the kitchen, but the smoke goes out either through the broad open door or through an opening in the roof. After the rice is cooked, it is put into a small, unpainted wooden tub. At dinner-time, the mother brings out a little table, two feet square and one foot high, with dishes and food upon it. The family sit upon the mats, the tub of rice is in the centre, and each one dips into a bowl, rice sufficient for himself. They often pour cold tea over the rice, and always eat it with chop-sticks. Fish, sweet potatoes and pickle are sometimes served with a dinner.

Japanese houses often have but one sleeping-room, which is occupied by the entire family. When guests come they share it with them. The beds consist of heavy comforters. They are spread out on the mats at night, and put away in the closets during the day. Each person lays his head on a little wooden pillow, constructed with a hollow place in which the head rests. In some rooms in the house is a closet containing a shelf for gods, and upon this shelf stand all the household idols, which have come down as heirlooms of the family from generation to generation.

FAMILY LIBRARIES.

Every family should be supplied with books, and each household should, as far as their ability will allow, procure a family library. There is no estimating the value of a few well-selected books. Children should be induced to begin early to improve their minds, and nothing draws them more to study than good, sound periodical literature, and well-selected books—books adapted to their age and progress in their education. Money cannot be better expended. Instead of toys and perishable gifts, purchase books for your children. Every few months add something new to the library, and be sure to preserve the old works. Let there be in the house a book-case, shelves, some place where the books and papers are deposited; have them carefully preserved, and soon a little handful will swell into armfuls, and the minds of the children will expand with the increase of the library, until a good store will be found in the house, and much knowledge will be gained by the growing children.

Good books, a taste for reading, will keep the children at home and make them happy in the family circle, when otherwise they will be straying off, hunting society, looking for something to engage the mind and satisfy the cravings of a hungry intellect. Games and worldly amusements are substituted for books and intellectual culture, where there is no library at home, no food for the inquiring mind. Let parents think of these things. Much, very much, depends on the early training of the child in regard to study, as well as other things.

MACAULAY.

As soon as he had got into his head any particular episode of his history, he would sit down and write off the whole story at a headlong pace, sketching in the outlines under the genial and audacious impulse of a first conception, and securing in black and white each idea and epithet and turn of phrase, as it flowed straight from his busy brain to his busy fingers. His manuscript, at this stage, to the eyes of anyone but himself, appeared to consist of column after column of dashes and flourishes, in which a straight line with a half-formed letter at each end and another in the middle did duty for a word.

As soon as Macaulay had finished his rough draft, he began to fill it in at the rate of six sides of foolscap every morning; written in so large a hand, and with such a multitude of erasures, that the whole six pages were on an average composed into two pages of print. This portion he called his "task," and he never was quite easy unless he completed it daily. More he seldom sought to accomplish; for he had learned by long experience that this was as much as he could do at his best; and except at his best he never could write at all. He never wrote except he was in the humour, and stopped as soon as his thoughts ceased to flow fast. He never allowed a sentence to pass until it was as good as he could make it. He would recast a chapter to obtain a more lucid arrangement, and reconstruct a paragraph for the sake of one happy stroke or apt illustration. He spent nineteen days over his description of the Massacre of Glencoe, and then expressed dissatisfaction at the result.—*Youth's Companion.*

BE STUDIOUS.

Whitfield was poor, and in "service," but he managed to get education; and both England and America have felt his power for good. William Harvey did not find out the circulation of the human blood by a lucky accident. He was a hard student at home and abroad, and taught the doctrine to his classes for ten years before he published it to the world.

Young men ought to remember that there are still splendid services to be rendered. All the discoveries have not yet been made. The field is now the world, as it never was before. The best books can now be had, as never before. Education of the highest kind in physiology, mental philosophy, engineering, chemistry, is accessible as it never was before. An empire with an emperor has grown up on this continent, and much of the soil is yet without occupant and master. Other empires are open to educated ability, and will become more so every year. There is a legitimate sphere for splendid ambition.

Let our boys forego the cost of tobacco and catch inspiration from the best books. Let them turn their backs on the tempting glass, and spend their money in stimulating the mind. Even fashion "parties" and pleasure may be put in the background, that the time and thought required for them may be given to getting that mental habit and furniture that will make its possessor a helper to his race, and a capable servant of that Creator—the "Father of Lights"—who has given us brain and heart, with capabilities, that we may be lights, benefactors, and conquerors, on fields where no life is lost, and even the vanquished are gainers.—*Dr. John Hall.*

It is said that President Arthur weighs exactly 250 pounds.

The electric light has been introduced into Shanghai, China, and is exciting much enthusiasm among the Chinese.

The village of Grindelwald, in Switzerland, so familiar to tourists, has been almost entirely destroyed by a hurricane.

At Ayr hiring fair last week, some farmers offered an addition to the wages of men who promised to abstain from the use of strong drink for a year.

At a Stenographic Exhibition in Paris, twenty-four different systems of shorthand are on view. Among other curiosities, there is a post-card containing 44,000 words.

The Duke of Edinburgh is about to become a tenant of the home farm at Eastwell, Eng., and of the extensive pasturage of Eastwell Park, hitherto farmed by local agriculturists.

An English company offers to drain the waters of Lake Geneva, in Switzerland, into the River Rhone, and to pay \$1,000,000 for the privilege, provided they can have the land that will thus left dry.

YOUNG CANADA.

LITTLE GOLDENHAIR.

Goldenhair climbed upon grandpa's knee;
Dear little Goldenhair, tired was she,
All the day busy as busy can be.

Up in the morning as soon as 'twas light,
Out with the birds and butterflies bright,
Skipping about till the coming of night.

Grandpa toyed with the curls on her head.
"What has my darling been doing," he said,
"Since she rose with the sun from her bed?"

"Pitty much," answered the sweet little one,
"I cannot tell so much things I have done—
Played with my dolly and feeded my bun ;

"And then I jumped with my little jump-rope,
And I made out of some water and soap
Bootiful worlds—mamma's castles of hope.

"Then I have roaded in my picture book,
And Bella and I, we went to look
For smooth little stones by the side of the brook.

"And then I comed home and eated my tea,
And I climbed up on grandpa's knee,
And I's jes as tired as tired can be."

Lower and lower the little head pressed,
Until it had dropped upon grandpa's breast ;
Dear little Goldenhair, sweet be thy rest !

We are but children ; things that we do
Are as sports of a babe to the Infinite view,
That marks all our weakness, and pities it, too.

God grant that when night overshadows our way,
And we shall be called to account for our day,
He shall find us as guiltless as Goldenhair lay.

And oh, when weary, may we be so blest,
And sink like the innocent child to our rest,
And feel ourselves clasped to the Infinite breast.

THE DOG AND THE STEER.

Harry, Lizzie, and Milly lived with their parents on a farm in the country.

Not far from their house were fields and meadows in which grew grain and grass, and sometimes also dandelions and buttercups. Here they used to play in summer, and sometimes they carried luncheon to their father and his men when at work in the fields.

Beyond the fields were the woods, where they often went to pick berries or gather nuts. They had a friend that nearly always went with them. His name was Bull. He was no bull-dog, however. He was a mastiff, and considered it his duty to take care of the children. He allowed no strange dog to come near. If any person whom he did not know approached, he soon told him, in dog language, not to touch or harm the children. If he came across a snake he would seize it with his teeth and shake it to pieces before it had time to bite.

The dog had very good manners. When told to shake hands, he would politely hold out his paw. He never went where he was not wanted, but kept at a respectful distance until called, or until he saw that there was something for him to do.

One day as the children were crossing the fields, a furious steer came rushing after them. A steer is a young ox. The children ran as fast as they could, but the steer ran much faster. Before they reached the fence he overtook Milly, who was the smallest, and was about to attack her with his horns. Just then the brave dog caught him by the tail and bit him so hard that the steer turned on him and Milly had time to get through the fence safely.

But the poor dog was tossed upon the horns of the steer until some men, who ran to his assistance, drove the steer away and fastened him in the stable.

Little Millie was saved, but poor Bull was hurt so badly that he could not walk for a long time.

The children brought their little waggon, lifted him gently into it, and took him home. They made for him a soft bed of straw in the wood-house, and fed and nursed him until he was well again.

He continued to live with the children and their parents until he was very old.

This is a true story. Bull had one fault. He would tear up the children's school books whenever he could get them. Perhaps he did not like to see the children go away to school, where he was not allowed to follow. Perhaps he thought (if dogs can think) that if there were no books the children could no longer go to school.

At least little Milly said that was his reason, and she seemed to understand him best.

PETTING THE TIGER.

I remember reading of a mother visiting a menagerie with a lovely infant in her arms. As they stood by the tiger's cage, the animal, apparently quiet, permitted the caresses of the babe. The mother, thinking it under the control of its keeper, and caged in iron bars, relaxed her vigilance, when suddenly the tiger seized the child, and in one fatal moment made it its prey.

I thought as I read the paragraph, how many worse than tiger's cages we have all over this loved land of ours. They form almost an unbroken network from ocean to ocean. It is a palace-like building here, a less pretentious one there, and a shanty down by the railroad. Each holds alike the same enemy, the sparkling wine-cup.

Do you see those two friends shaking hands so heartily on the steps of yonder grand hotel? They have not met since boyhood's days, and now middle age claims them.

"Come in, Fred. With a social glass between us, we'll talk over by-gones. Waiter, some of your best champagne. No shaking of your head, Fred."

The champagne is brought, and the friends are quickly reviewing the past.

"Have your glass filled again, Fred; 'tis really worth your while to take a draught from these glasses. The design is a triumph of art. We have lived thus long without any harm from the cheerful glass. We have wills strong as iron bars, and they can guard with master-like vigilance our failings—if we have any."

A third time the glasses were filled, and, "Here's a double health to thee," was sung with the vim of college days.

Then they parted. But mark the sequel. The appetite, which they boasted was caged with strong wills, had not then been caressed. The desire became a tiger, and ere long one of the jolly friends filled a drunkard's grave, and the other, a wreck, dwelt in a maniac's cell.

PAWS AND CLAWS.

"Mother," said little Nannio, "sometimes pussy has paws, and sometimes she has claws. Isn't that funny? She pats with her paws and play prettily; but she scratches with her claws, and then I don't love her. I wish she had no claws, but only soft little paws; then she would never scratch, but would be always nice."

"Well, Nannie, dear," said her mother, "remember that you are very much like pussy. These little hands, so soft and delicate, when well employed, are like pussy's paws—very pleasant to feel; but when they pinch or scratch or strike in anger, then they are like pussy's claws."

"Well, that's funny enough, mother. I never thought that I was so much like pussy."

"You love pussy much," said her mother, "and you may learn a good lesson from her. When you think kind thoughts, and speak gentle, loving words, then you are like pussy with her nice, soft paws, and everybody will love you; but when you think bad thoughts, or give way to ugly tempers and speak cross and angry words, then you are like pussy with her sharp, scratching claws, and no one can love you."

Nice soft paws are much pleasanter than sharp, tearing claws. And so gentleness is much pleasanter than anger or wrath, and this is a good reason why we should try to learn this lesson.

HOW CHICKENS GET OUT OF SHELLS.

Take an egg out of a nest on which a hen has had her full time; carefully holding it to the ear, turning it around, you will find the exact spot which the little fellow is picking on the inside of the shell: this he will do until the inside is perforated, and the shell is forced outward as a small scale, leaving a hole. Now, if you will take one of the eggs in this condition from under the hen, remove it to the house or some other suitable place, put it in a box or nest, keeping it warm and moist, as near the temperature of the hen as possible (which may be done by laying it between two bottles of warm water upon some cotton or wool), and lay a glass over the box or nest, then you can sit or stand, as is most convenient, and witness the true *modus operandi*. Now watch the little fellow work his way into the world, and you will be amused and instructed, as I have often been. After he has got his opening, he commences a nibbling motion with the point of the upper bill on the outside of the shell, always working to the right (if you have the large end of the egg from you and the hole upward) until he has worked his way almost round, say with one-half an inch in a perfect circle; he then forces the cap or butt end of the shell off, and then he has a chance to straighten his neck, thereby loosing his legs somewhat, and so by their help forcing the body from the shell.

MAN will feel himself an orphan in the world, and cut off from the hope of a solution of his destiny, unless he may believe that there is a tie of sympathy and relationship between himself and his Master.

TORONTO WHOLESALE MARKETS.

OFFICE RURAL CANADIAN, Toronto, Nov. 16th, 1882.

CATTLE.—There is very little activity; no animals are offering for export, and even good butchers' heaves are low; those sold at 4 1/2c. to 4 3/4c. Ordinary or inferior at 3c. to 4c. per lb., live weight. Sheep in moderate supply, but choice ones scarce, \$4 25 to \$5 are ruling prices. Lambs bring relatively better prices, ranging from \$3.50 to \$4.50. Hogs coming in freely, fat ones bring \$6 to \$6 25 per 100 lbs. alive, hogs for fattening sell at about 95.

GRAIN.—The quantity of various grains in store at Toronto wharves and elevators on the 13th inst. and at other dates, was as under in bushels:

Table with 4 columns: Grain type, Nov. 13 '82, Nov. 6 '82, Nov. 14 '81. Rows include Fall wheat, Spring wheat, Barley, Rye, Peas, and Total bush.

Fall wheat is quiet since shipments via St. Lawrence route are over for the season; prices remain without change from last week. Spring wheat is scarce, and wanted by the millers. No. 2 is moving slowly at \$1, and there is very little No. 1 to be had. Barley continues to move out freely; the bulk of the supply consists of Nos. 3 and 3 extra, which we quote 57c. and 64c. respectively. The price may fall below these figures by reason of higher freights, the canals freezing up usually at this time. Oats are in demand, with almost no stock; 89c. would be paid for good No. 1. Peas are firm at last week's prices. Rye quiet and rather easier. There is a local demand for Corn, the Street Railway Company being in the market as buyers at 72c. to 75c.

Wool.—There is a good demand from the factories for medium and fine, with no movement in fleece. Canadian pulled lamb and super., 27c. to 29c.; pulled extra, 33c. to 35c.; fleece clothing fine downs or cross breeds, 32c. to 38c.; pulled combings, 20c. to 21c.; fleece combings, 18c. to 20c.

Provisions.—We have to report a quiet week's business. Prices are for the most part unchanged in hog products although there is a weakening tendency. We quote mess pork \$23 to \$24, but can hear of no stock on hand. There has been a fair jobbing demand for long clear bacon, and sales have been made at 13 1/2c. to 14c., though there would be now some difficulty in getting the outside price. Smoked meats have proved in good request, breakfast bacon selling at 15c.; spiced rolls, 14c. to 14 1/2c. The receipts of dressed hogs in the market continue limited, and heavy weights are bringing 8 1/2c. A sharp decline is expected when any quantity reach the market. Butter—Choice grades are still in active demand, while poor quality has few admirers. Cheese continues quiet and steady, with only a jobbing trade passing. Factory min hold for 12c., having refused 11 1/2c., hence out of 1,350 boxes offered on 14th, at the Ingersoll market, none were sold. Hops—Every holder is buoyant, and none willing to sell; there was a sale here last week to a country brewer at 85c., and best new Canadian have since brought 90c. and 91c., indeed dealers would pay 90c. for choice, but no quantity offers.

Wool.—There is a good demand from the factories for medium and fine, with no movement in fleece. Canadian pulled lamb and super., 27c. to 29c.; pulled extra, 33c. to 35c.; fleece clothing fine downs or cross breeds, 32c. to 38c.; pulled combings, 20c. to 21c.; fleece combings, 18c. to 20c.

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