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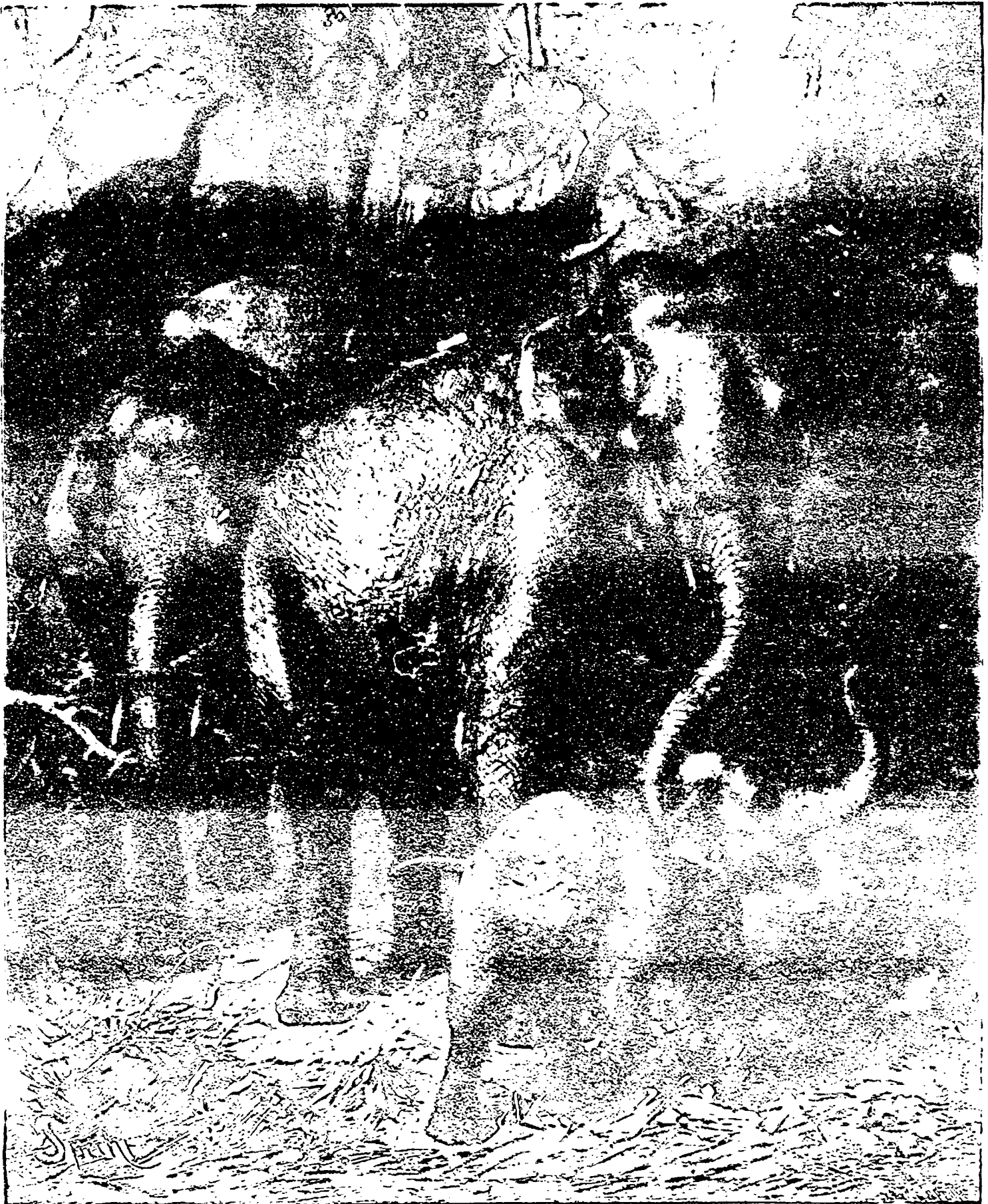
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THE
RURAL CANADIAN.

Vol. III. No. 6.

Toronto, June, 1884.

\$1 per annum, in advance.



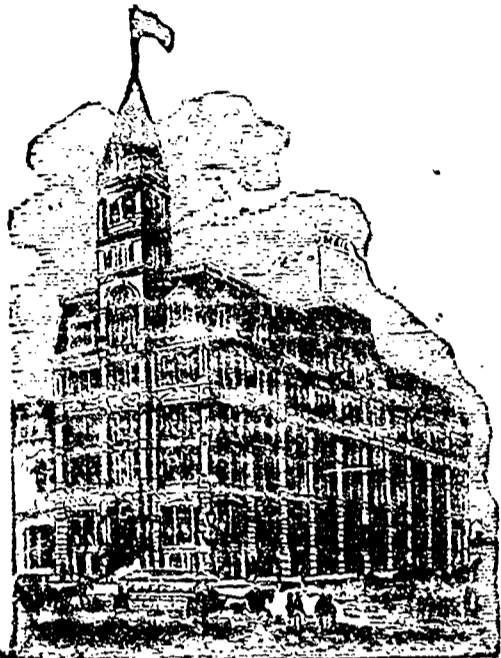
ELEPHANTS AT HOME.—TEACHING BABY TO WALK.

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OFFICES: "Mail" Building, Toronto, Ont.

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A Purely Canadian Institution, WHICH HAS NO CONNECTION WHATSOEVER WITH ANY SIMILAR INSTITUTION IN THE UNITED STATES OR OTHER FOREIGN COUNTRY.



The building in which the Association's Offices are located.

A Staff of Eminent Specialists, SUPERIOR IN EVERY RESPECT TO THAT EMPLOYED BY ANY SIMILAR INSTITUTION IN THE UNITED STATES OR ON THE CONTINENT.

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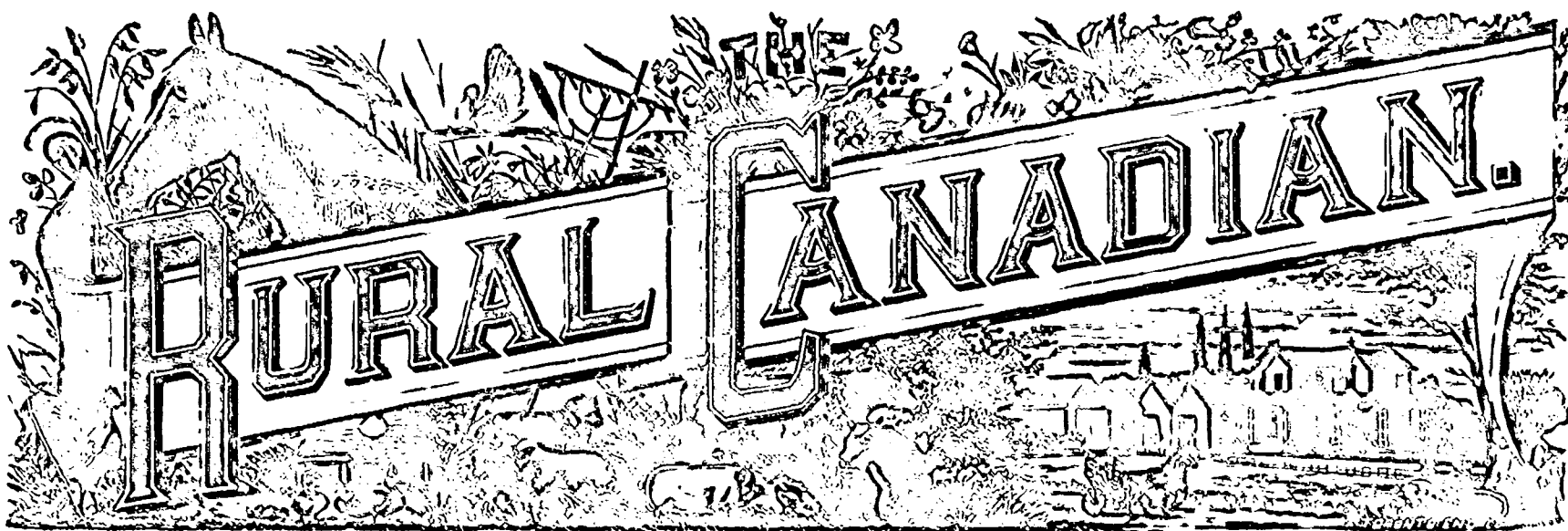
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Vol. III. No. 6.

Toronto, June, 1884.

\$1 per annum, in advance.

RURAL NOTES.

A FEW buckets of water in a dry season will add a year's growth to a small tree. Better carry a bucket of water than buy a new tree.

YOU want something real *substantial* in the winter squash lime? Then Hubbard, Marblehead, or Butnam will fill the bill. Either of the three is good, and the Hubbard, old as it is, will not be crowded out of public favour by the squash generation.

A MULCH of clean straw should be given to the strawberry vines when the fruit is about to ripen, so as to prevent the soiling of the fruit by rain. Straw is much better for the purpose than grass, as the latter mildews and imparts a bad flavour to the fruit.

FARMERS have on hand a large surplus of last year's crop of hay, and prices are so low that very few have any temptation to sell. There are indeed but few places in the country where hay can be grown and sold at a profit. Far better to feed it to some animal on the farm.

WE are in receipt of No. 2, vol. 1 of the *American Sheep-Breeder*, a neat, profusely illustrated monthly magazine, published at Chicago by the C. S. Baird Publishing Co., 48 pp., \$1.50 per annum. It should have a wide circulation. We shall be glad to exchange."

POTASH is an excellent fertilizer for the grape-vine. Fork in around the roots a few pecks of wood-ashes. Cow-dung contains a large proportion of potash and but a comparatively small amount of nitrogen, consequently it is a better fertilizer than horse manure for the grape-vine.

THE simplest and best remedy for the cabbage-worm is said to be to sprinkle air-slacked lime on the plants in the morning, on the dew, till the plants are white with it. One who has tried it for several years says that, at most, two applications are sufficient. The lime is also a good fertilizer for the cabbage.

THOSE who give time, money and care to the breeding and feeding of scrub stock are, says an experienced breeder, beaten from the start. The same feed and care bestowed upon fine stock would yield a profit. But few men

obtain riches or reputation as stock men, but there is a chance for both to the careful farmer.

EVERY farmer's garden should have strawberries, currants, raspberries, etc. All these may be planted in rows and cultivated with the horse; and the expense is nothing compared to the luxury they afford. Farmers eat too much salt meat and other coarse food. They should raise and eat more fruit.

STABLE manure undoubtedly answers the demands of the soil in fruit culture better than any annual application of a single special fertilizer, but still it should not be forgotten that an occasional application of potash in some form may be necessary. Muriate of potash is a good application now and then.

IT is found that the seeds of beets, turnips, etc., come up more quickly and regularly when rolled into the ground. This is especially the case when the soil is dry, as then moisture must be preserved about the seed to insure germination. Turnip ground should be well ploughed and cultivated, so that the seed-bed may be a fine mould, otherwise a good crop cannot be hoped for.

A GOOD many growers of cabbages and cauliflowers think they would sooner fight the cabbage worm than the little fly which destroys the plants when they are first set out. We have proved to our own satisfaction that if the plants be shaded on the south and east side with shingles the fly will never touch them, and they will grow strong and healthy. The shingles should be kept on till the plants have attained a good size.

WHAT does it cost to grow an acre of wheat? Here is one estimate, and we would be glad to have readers of THE RURAL CANADIAN give their opinion of its accuracy: Two ploughings, \$6, manuring, \$2, seed, \$2; drilling, rolling, and finishing, \$2, harvesting, threshing, and marketing, \$3, rent of land, \$3. Total, \$18. At these figures, and wheat at \$1 per bushel, there is no profit in growing wheat if the yield be less than twenty bushels per acre.

AN American exchange has this good word to say for pork production in Canada. "The flesh of hogs fattened in Canada contains a larger proportion of lean meat, because barley

and peas are mainly fed to produce it. These are nitrogenous rather than starchy foods, and hogs fed on these grains are less liable to disease than are those fed exclusively on corn." This is true. Hog cholera, for instance, is hardly ever heard of in Canada, and we believe never outside of the large corn-growing region of Essex county.

A SUCCESSFUL fruit-grower has great faith in pruning trees or thinning fruit for the equalizing of crop. His theory is that a large crop one year weakens the vitality of the tree, and that a season of rest is necessary for it to recuperate. To thin the fruit so that the tree may not lose its vigour, will generally ensure a fair crop annually; but pruning is easier work, and for that reason it is the plan most likely to be followed by the average cultivator. A fair crop every year is certainly a desirable thing to be attained.

THE dairying business demands cleanliness for very decency's sake; yet how rare it is to get a supply of milk from dealers in which there is not a fair quota of the proverbial peck of dirt. A few hints under this head will do no harm to the general farmer as well as the dairy farmer. (1) Arrange the stable so that cows cannot lie in filth. (2) Use a card and brush to keep the cows' skins clean. (3) The milker to be at least as clean as the cows. (4) The cows to be milked in a clean place, in the open air or under cover. (5) A clean and pure place for setting milk. If these hints are observed, the consumers of milk and dairy products will be much better satisfied than they often are.

EXPERIMENTS tried last year in pasturing clover fields until the 15th of June, and then allowing the crop to grow for seed, gave very satisfactory results. The brood of the clover midge, which usually destroys the seed, is hatched out about the 15th of August; but in the case of the experiments referred to, the seed was so far matured by the date of their appearance that no harm was done to it. A plan that does equally well is, to take off an early crop for soiling—and we are not sure but that on the whole this would be found more satisfactory than pasturing the field. In any case it is very desirable that the old system of taking off a first full crop should be discontinued by all who undertake to grow clover for seed, for so long as it is continued it will be impossible to get rid of the midge.

FARM AND FIELD.

A MODEL FARM.

NOTES OF A VISIT TO THE DRYDEN HOMESTEAD,
SOUTH ONTARIO.

We clip from the weekly *Globe* the following valuable facts relative to the grain and stock farm owned by Mr. John Dryden, M.P.P. one of the most intelligent, enterprising agriculturists in the Province. The writer closes a general description of Mr. Dryden's methods in terms following:—Agriculture in his hands rises to the dignity of a science, and combines theory with practice in a way which never allow methods to be followed blindly, or hobbies to set aside the dictates of practical common sense and the necessities of the farm. Money is not wasted in wholesale experiments; what experiments are made are made cautiously and on a small scale. Close observation, the study of the relation of cause and effect, with the careful elimination of what might be termed the accidental, are rather relied upon in the treatment which the land receives. Every field is studied, its capacities for different crops are known quite as well as the peculiarities of the different horses on the farm; and in the application of

A COMPREHENSIVE SYSTEM OF ROTATION

there is no blind and rigid following of routine, but the capabilities of particular portions of the farm, the necessities for further increase of fertility in particular fields, the character of the season and of the previous and present crop, and the demands of the market are all carefully taken into account. The last-named consideration, however, it is not allowed to interfere with his purpose of getting good results on the aggregate of years rather than great immediate profits. Many other farmers may in a particular season receive a greater cash return per hundred acres, but few can show a larger financial result when a term of years is taken, and at the end of that term the whole farm is found ready to repeat the same results, while the farm which has been managed with a view to immediate profits is fertile in parts, poor in others, the large extra results of one or two years having been a draught on the fertility of the soil. Of course Mr. Dryden has reached that position in which he is not pressed to depart from "long range" management. It is not every farmer who can afford to wait, but every farmer cannot too carefully bear in mind the general principle that excessive cropping means deterioration of soil, which has some time or other to be paid for, and is only justifiable when and so far as immediate necessities demand.

Thorough drainage, thorough tillage, liberal and discriminating use of manures and fertilizers, the application as far as practicable of green manuring, are important points in the management of this farm, and the largeness of the crops and available richness of the soil testify to the success which has rewarded the attention paid to them.

CLOVER—SURFACE MANURING.

The rotation of crops covers about seven years, but, as has been said, is not rigid, but is modified by various circumstances. Clover is, of course, one of the most important of the crops and fertilizers. It is sown with

wheat on land treated heavily with manure, which if for fall wheat is spread on the surface, and if for spring, turned under by very shallow ploughing. Surface manuring, or the nearest practicable approach to it, is strongly advocated, and is found to bring nourishment to the seed-bed immediately, and to the deeper soil in course of time, so that the full benefit of it is reaped. Manure heaps on the fields are avoided as much as can be; the immediate spreading secures greater uniformity and there is no appreciable loss of ammonia. Some trouble is found with surface manuring where the straw is not well rotted, as it then is apt to clog the seed drills; the remedy is the use of well rotted manure. The soil here being not very heavy, one of the advantages found in using coarse manure, making the soil porous, does not count for much. Mulching has been tried to some extent, and is found to be beneficial in protecting the young wheat from winter killing by exposure. Snow very rarely covers the ground deeply in this part of the country, but probably if it did the mulching would be rather advantageous than otherwise in preventing smothering. Alsik is found, as elsewhere, to stand the frost better than red clover, and is grown very extensively. Its permanence is favourably reported.

NATURE'S WAY OF SOWING TIMOTHY.

Timothy is sown in the fall with fall wheat without harrowing. This is nature's method and never fails to secure a good catch, while spring sometimes does fail. Then as soon as the ground will admit of it in spring the harrow is used and clover sown afterwards. There is no necessity for covering, as if sown early the clover gets a good start with the spring rains. The ground is left in sod for two years, and in ploughing care is taken to plough under as much grass as possible—sometimes the whole growth. The very best results are secured by this manuring. The ground does not run together, but is porous and open, with all that that implies in the way of easy working, easy access of roots to the soil, and the conversion of the richness of the subsoil into available plant food. Wheat is greatly preferred to barley for sowing with the grass crops, as its stubble is stiffer, and being left tall, collects the snow and protects the grass during the first winter's exposure. Grass seed is used liberally in the proportion of one pint of timothy to two pints of clover. Mr. Dryden thinks that grass is sown by himself and others in quantities rather smaller than should be, but says that he finds thorough preparation of the seed bed of more importance in securing a large catch than is the quantity of seed sown.

ROOTS.

Roots follow sod wherever practicable. A skimmer plough, is used in the fall, then a gang plough in spring, working the ground to a depth of two or three inches. When the sod is thoroughly rotten a single plough is used, then the gang plough once or twice. The land should be in good tilth by the middle of May. Then comes early sowing in drills twenty-eight inches apart. The scuffler is used before thinning, and in the middle of June the roots are thinned to about fifteen inches apart. A good scuffler specially adapted to the necessity of the root crop is consi-

dered invaluable. There once were thinning matches in this part of the country, but they are now discontinued.

EARLY SOWING OF BARLEY—NO DANGER OF FROST.

Barley follow roots. "No cereal," says Mr. Dryden, "will give more satisfactory results from early sowing than barley. The notion that it will be in danger from early frost is a delusion." This accords with the opinion and experience of many of the farmers, but I have heard it repeatedly contradicted by others whose lands, however, were not tile drained. Therein may lie part of the difference in results. Fine tilth prevents destruction of the roots by frost, which, when the land is well drained, merely increases the fitness of the seed bed and prevents the baking under spring suns which is often experienced on wet lands. Mr. Dryden adds an interesting experience: "Some four years ago," says he, "we had a little field of three acres well drained, which, in consequence, we were able to sow very early, in fact before any others in this neighbourhood. The ground being in good condition, the barley came up in short time and looked well. When about two or three inches high—in its most, tender state—a very severe frost occurred, crusting the ground sufficiently to bear. If frost, injured barley, this crop should have been seriously affected, and believing at that time that there was some truth in the prevailing notion about frost injuring barley, I expected it would be cut to the ground. As the sun rose I hastened to the field, and was astonished to find the blades looking, if possible, greener and fresher than before. Not a particle of injury could be discovered, and no signs of yellow were ever seen on this field during the season. We had at least forty bushels to the acre. The same season one of my neighbours sowed a field of barley after the frost, and indeed, after all frost, for no frost whatever occurred after the time of his seeding. This barley was very yellow when about the same height as mine was when the frost referred to occurred. As no frost could have touched it some other explanation of the yellowness must be given. That and subsequent experiences make me think that 'be blade turns yellow because the soil is too wet, cold, and poor, but never because of frost. If you sow early you will get more bushels and more pounds to the bushel.

HOW BARLEY SHOULD BE HARVESTED.

"Barley should be harvested," says Mr. Dryden, "before it is really ripe, as after a certain stage even the heavier dews will colour it. It should be bound up where practicable at once and well shocked. If this is well done it will stand almost any amount of rain without being affected. Of course the outside heads will be coloured, but the discoloration does not seem to be noticeable amongst the other heads. If it were well capped and the cap sheaves threshed separately, and the grain from them used for seed, the harvesting of barley would be a more perfect job, and a fine quality would be available for marketing. When the grain is too much lodged to be bound (as mine frequently is), we cut it with a self-rake machine, so as to leave the sheaves as much in winrows as possible. We then leave it in the sun for half a

day, or sometimes a whole day, if the weather warrants that exposure. Then with steel barley forks we put it in cocks as we would hay. If this is well done, and the cocks are once well settled, the rain will scarcely penetrate them, unless in the case of an incessant down-pour for several days, which, however, very rarely occurs. In draining the loose barley two men are placed in the field to pitch, and we unload with a horse-fork. Should a heavy wind displaced the cocks they are re-arranged."

LASTING EFFECTS OF PLASTER.

Mr. Dryden sows 300 lbs. of salt to the acre, and finds that it adds materially to the brightness and weight of his barley. He finds, too that salt varies greatly in apparent effects, according to the season: sometimes it seems to be of no use at all. It takes best in a dry season. Plaster is found to be one of the best fertilizers, especially for grasses, and is sown as soon as the ground permits. It must get into the ground. He finds its effects long after use. He used it with corn, dropping it in hills three feet apart. Spring wheat, seeded with grass followed, but the following season he found the grass along the corn rows much more luxuriant than where no plaster had been sown. This is one of the most interesting testimonies to the value of plaster I have known. Of course the preparation of the soil for barley is made thorough by many working—as for barley, of all grain, a very fine seed-bed for its fine rootlets is desirable. "One or two inches deep is quite deep enough to place the seed."

PEAS ON STUBBLE PREFERRED.

Barley is followed by wheat—fall or spring. If the wheat is not in good condition, or it is desirable to increase fertility, a light dressing of manure is applied, and timothy and clover are seeded in. If the wheat is in good condition, oats follow, then peas, which Mr. Dryden finds from his own experience and that of his neighbours, does much better on stubble than on sod. Marrowfats are chiefly grown, and yield thirty bushels and over to the acre.

TILLAGE.

To enumerate the ploughings, cross-ploughings, and harrowings of the soil for the crops on this farm would be giving a repetition of the practices of the most careful cultivators in the Province. The importance of thorough cultivation for every crop is fully appreciated. The roller is used in spring to break the lumps left after fall ploughings and winter settling, and to secure a fine seed bed and even deposition of the seed. The rolling after seeding as on loose soils, or after the grain is up as on many soils liable to baking, is not here necessary owing to the condition of the soil, and is seldom practised. The maintenance of fertility in every part of the farm is an ever present consideration, and as might be expected the crops show a high average yield. Wheat gives an average of thirty busels per acre, peas rather more, barley runs near forty, roots about 800, and even Indian corn surpasses the average of Missouri, though of course this acreage planted is small where other grains pay so much better. Wheat is the leading grain crop; sixty to seventy acres being usually devoted to it. Barley occupies nearly sixty acres; oats, thirty to forty; peas, twenty-five roots, twenty-five. Eight acres are in orchards.

MONEY IN SUNFLOWERS.

Much has been written during the past few years about the value of sunflower seed for feeding to fowls and sheep. The value of the leaves of the plant for feeding to horses has also been favourably noticed. A correspondent of the *Toronto Globe* calls attention to the value of the seed for making oil. In his communication he writes:

Care should be exercised in selecting sunflower seeds, as there is a very great difference in the number of flowers, and consequently in the number of seeds produced, at least so I have proved in my own garden, some varieties ranging from one to three flowers, while others will produce as many as fifty, sixty, and seventy flowers on one stalk. When the object is to provide feed for cattle and fowl, the last variety mentioned will doubtless be found the best paying; when the purpose is to secure oil, only the best oil seed variety should be selected; and, as I have not experimented in this line for oil, I am at a loss which variety to recommend. Experienced farmers and gardeners already know that the plant will readily grow in almost every soil, but prefers light, calcareous land, unshaded in every respect. The quantity of seed required for an acre is from four to six pounds. In some cases the seed is drilled into lines eighteen inches apart, and the plants are subsequently thinned out to thirty inches apart in rows, thus giving about eleven thousand plants to an acre, and each plant produces about one thousand seeds—the better sorts would probably produce many more. In England it is recommended that the sunflower be earthed up when about one foot high, but it will require no further attention. It is said the yield is much increased by the use of a fertilizer, and old mortar is regarded as one of the best. The sunflower has long been grown for its oil seeds in India and Russia, and more recently its cultivation has been taken up in Italy and Germany. In China and Tartary it is produced in immense quantities, and why not equal quantities, as cheap food for cattle and in henneries, if for nothing else. In Russia, where the production of seed is very large, the oil is expressed on the spot, and is largely employed for adulterating oil, while the purified oil is considered equal to olive and almond oil for table use. In India one acre of land is stated to yield eleven and a-half hundredweight of seed, which in the press gives out forty-five gallons of oil, and is there compared with ground nut and applied to the same uses. I think Canada, including the North-West, can produce oil in this way quite as well as India or Russia. I also find that experimental culture in France gave 1,778 pounds of seed, yielding fifteen per cent. of oil (275 pounds) and eighty per cent. of cake; but the product (according to the French report) varies considerably according to soil, climate, and cultivation, and that the average may be roundly stated at fifty bushels of seed from an acre, and one gallon of oil from one bushel of seed; also, that the percentage of oil to seed ranges from sixteen to twenty-eight and that of husk to kernel from forty-one to sixty; but this may be in some measure attributable to the varieties used though none of the reports speak of the varieties grown.

THE VALUE OF GREEN MANURES.

Farmers have an exceedingly inadequate idea of the value of green manures. One who will sow his seed and wait patiently for the crop will be too impatient to grow a crop of rye or corn or clover to be ploughed under to enrich the soil, and return its rich harvest another year. Another will spend hundreds of dollars for purchased manure or fertilizers, but will not spend tens in growing a crop to plough into the soil for the same purpose. And there are farmers who have determined to plough under a clover sod and have top-dressed in the fall or winter with this intention, but who have lost heart when they have seen a luxuriant growth on the ground, which seems to be "a waste of good fodder," as they have said, and so they have waited and have either pastured it or mowed it off and robbed the soil of food which it sorely needed. This would seem quite different if farmers would think of their soil as something to be fed and supported to enable it to yield its produce, as much as a cow that yields milk or a sheep that yields wool. There are some close analogies between our fields and our animals. An animal is a machine—if we like to call it so—by which we make salable products from raw materials. It is inexhaustible for its term of life so long as it is fed; but it is really inexhaustible in fact, because, before its useful life ends, it reproduces itself several times and simply becomes a link in a chain which we may draw out indefinitely without reaching the end of it. So that in this view of it even an animal is inexhaustible so long as it is fed. And so is the soil and no more and no longer, and, indeed, if it is not fed, a field will be mere dead useless matter just as a starved cow or sheep will be. The farmer must learn to think of his land in this way or he gets a wrong idea of it. He must not neglect to study up the science of feeding his field as he reads up that of feeding his live stock. He must become acquainted with feeding tables and rations and kinds of food for the land as well as for animals and must provide them liberally. As clover is accounted an excellent food for stock so it is an excellent food for land. But, at the same time, as there are other fodders which can be used along with clover, or as a substitute when helped out by more stimulating food, so there are other crops besides clover which may be made to serve as food for the soil. Indeed, the soil is not very exacting in this respect, although it will never give something for nothing, and always returns freely in exact proportion to what it receives and no more; but it is omnivorous and has an exceedingly strong digestion. So that the farmer cannot go astray if he will always provide something for it. It may be weeds and no more, but it is better if it is a crop of buckwheat, and better still if it is rye or corn or even turnips or rape, but best of all if we can give it rich clover which goes down deeply and draws food from the subsoil and opens its broad leaves to the air and gathers from that source too, as well as others, which other plants cannot reach, and so gives to the farmer a hundred-fold in return for the seed and labour he has expended. There are other ways of manuring the soil, but among them ploughing in of green crops has no superior.

HORSES AND CATTLE.**HEREFORD GRADE STEERS.**

We have already placed before our readers engravings of six out of the nine steers upon which feeding experiments are now being made at the Ontario Experimental Farm. On this page will be found a good representation of the Hereford grades. Their average weight on the 1st December last, when the steers were a year and four months old, was 1,054 pounds. When the contest is concluded we shall give the result for the information of breeders and others.

BLINKERS AND CHECKS.

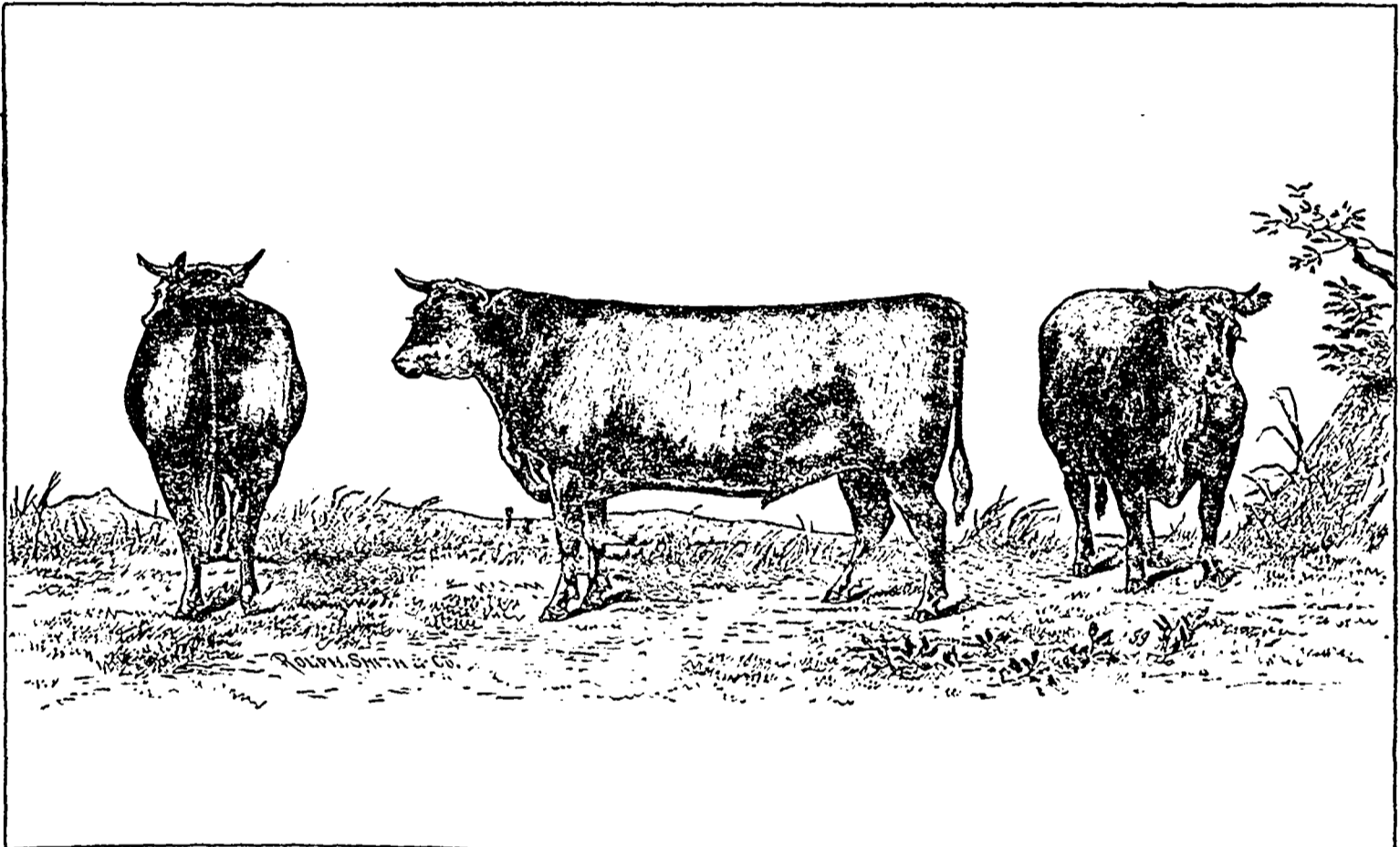
The *Lancet* says that blinkers and checks are exploded in London, but this news is almost too good to be true, as deeply rooted

ance, but usually is the result of bad management. Of the cruelty and stupidity of making the bit an instrument of torture, and of chucking the reins, we need not speak. The two first mentioned appliances we consider contrary to common sense, good taste, and humanity. Viewed dispassionately, blinkers are clumsy, disfiguring, and injurious. Were it to become the fashion for men and women to wear such incumbrances, we soon should have a realizing sense of their awkwardness and inconvenience. To the eye of taste, a horse's eye is a beautiful and admirable object, which should be seen, and not hidden, and it certainly is an injury to be deprived in any degree of sight, or to have snow and dust conducted into these delicate organs. The idea that a horse should not see his driver, or know what is behind him, is ridiculous, and the cruel wish to be able to punish or whip an

nct made too fat, as such a condition is unfavourable to the development of muscle or lean flesh, as it is certainly detrimental to their fertility.

At the age of eighteen to twenty months the young heifers should be put to the bull. If allowed to run longer there is danger of uncertainty in their breeding as they will usually at this age get in high condition on good grass. Besides, heifers put to breeding at this age are likely to prove better milkers than if allowed to have their first calves a year later, or say at the age of three years.

The cows and the heifers that are in calf will have the best of hay, with an allowance of grain, bran or meal during winter. When the breeder keeps a few pigs, corn in the shock may be fed with advantage to the cattle, as the pigs will pick up the corn not digested by them, so that there will be very little wasted.



HEREFORD GRADE STEERS.

abuses are not to be eradicated in a few years. Mr. Flowers waged a steady war against the latter, but, strange to say, as steadily used the former. In the *Humane Journal*, U.S., Mr. DeWitt insists that it is inhuman to use over-checks or blinkers, as well as to jerk the bits, and to whip for shying, stumbling, or balking. The *Girl's Own Paper* says bearing reins are both absurd and cruel, and among other cruel or injudicious practices, adduces jerking the reins, sharply pulling up, and cutting away the natural frog, or sole of the foot, under the foolish impression that we can improve upon the work of its Maker. This consensus of opinion tempts us to say something upon the same subject. To strike a horse for shying but adds an additional cause for dread, and is certainly not the way to teach him confidence. To whip for stumbling is likely to be an injustice, as the fault is often traceable either to obstructions on the road, unseen from the position of his head, or to the insecurity caused by the two common paring away or the sole, and high shoeing. Balking, again, often proceeds from pure ignor-

animal unawares is simply cowardly. Besides, when from one-half to two-thirds of the range of vision is intercepted, the animal is far less able to guide himself aright, and is very generally punished for what is his misfortune, and not his fault.

CALVES AND HEIFERS.

The heifer calves, in like manner, have their dam's milk until weaning time. But it should be mentioned here that the calves for from one to three months will not require all the milk that good Shorthorn cows usually yield, and it is quite important that proper attention should be given to milking them, as the calves, being let to their dams but twice a day, frequently gorge themselves with so much milk as to occasion derangements of their bowels.

The heifer calves will, of course, have the best pasture, and be furnished an allowance of meal, bran, etc., from weaning time to the next spring. They should be kept in good growing condition from the beginning, but

While it is injurious to allow breeding cows to become *fat*, their calves being small and wanting in robustness, it is unquestionably bad policy to suffer them to become thin in flesh before calving time. No animal pays better for the food necessary to maintain it in proper condition than the milch cow, and it is unaccountable that so many intelligent people should fail to understand a matter so self-evident.—*Breeder's Gazette, Chicago.*

WHEN weaning animals always warm the milk. This will tend to prevent scours.

No cattle beast whatever will pay for the direct increase to its weight from the consumption of any kind or quantity of food—the manure must be properly valued.

It is very important that farm horses be trained to be good walkers. A very fast gait can be obtained if the proper means are taken. Next to strength, speed is wanted in a draft horse. There is no need that teams should crawl along the road and in the furrow at the snail's pace. Fast or slow walking is a matter of habit.

THE DAIRY.**WHY CHEESE IS POOR.**

A correspondent of the *Country Gentleman* answers the questions. Where has all the good cheese gone? and why has the standard of excellence not been kept up—recently propounded by Judge Jones. He says: "Briefly I may express my opinion. Recently at Columbus, O., at dinner the Judge and myself were discussing a specimen of very poor cheese—good material, spoiled in manufacture—and I told what my opinion was in the matter. It was too much acid in making; nothing else. Good cheese is composed of water, fat and casein. When cheese is scalded or cooked in the whey, an acid is developed that destroys fats and results in making the cheese dry when cured, sharp in flavour, salvy, and when cut soon losing its flavour. This is not the whole damage from the sour whey. The acid liberates the phosphates, which elements are valuable in promoting digestion, and also in preventing this excessive sharpness. One other thing is also of great damage in cheese making, and that is too rapid cooking of the curds at the start. If the steam is turned on, and the requisite heat quickly attained, the outer surface of the curd is cooked at once and before the surface is warmed up, and thorough cooking is thus prevented. This partially cooked curd does not cure even in the subsequent curing of the cheese, which all tends to make a poor cutting cheese. It is not wholly the wholesale use of the skimmers in the factories that is the cause of poor cheese, but the very causes I have pointed out. If the milk is coagulated with a minimum quantity of rennet, the curd finally cut and gradually warmed up to the scalding point, and the whey drawn at the point (or before) of the appearance of acidity, and after salting this curd it is exposed to the air, until it gets an "acid" from this source, rather than from the whey, the elements wanting in the other cheese will not be found wanting in this one. This "dry" acidity (it might be so called) does not afford any chance for the acids to "eat" out the fats or cut out the phosphates, but leave them both intact. This results in a cheese of nutty flavour, buttery quality, easily digested, and when cut, does not quickly dry up and lose its flavor. This is denominated sweet curd cheese, which it is in one sense, but in another it is not, for the sweet curd cheese is put to press as soon as salted, but in this case the curd is salted, but in this case the curd is "broken down" by the action of the air, which gives it no after chance to develop gases while curing, as it would if put immediately to press. There was never any good reason which there should have been such an employment of excessive acidity in the manufacture of cheese in our factories. The rule of extreme acidity is being rapidly abandoned or modified in Ohio, which is proof that it was radically wrong.

POOR STOCK ON THE FARM.

Few farmers consider with sufficient care the losses which accrue from the keeping of poor stock. This applies to all the varieties of domesticated animals, but especially to cows. A cow is the most costly animal to keep of all the farm stock. It is kept because of the valuable product of the milk and butter.

But one that produces half a pound of butter a day will cost as much as one that will produce three times as much. The better cow may cost a little more originally, but its progeny will cost no more to rear than the poorer one, and the feed and the care will be the same for both. The difference may seem small when the daily quantity is considered, but the yearly difference is very much, amounting to between one hundred and three hundred and fifty pounds, for the better cow will not only yield more, but will produce it longer. A cow that yields only one hundred pounds of butter worth \$20 in a year, is kept at a loss of at least \$10, while one that yields two hundred and fifty pounds pays a profit of \$20, and one that produces three hundred pounds pays \$30 over and above the cost of keeping.

The difference in a herd of twenty cows is as an income of \$400 a year is to one of \$1,200. It is sufficiently large to make all the difference to the farmer's family between poverty and wealth. And yet there are thousands of farmers who have been content to remain in this condition of poverty because of their unprofitable stock, year after year without making an effort to relieve themselves from it. The way out of it is not difficult, and if a start is once made the rest is easy. All then that is required is time, and to let the thing run itself along. This is to select the best one has, if no better can be procured, and to breed the cows to a better breed. A pure bred animal of almost any kind will make a good start in the way of improvement, and when this is once undertaken the progress is made continually.

MEASUREMENT OF MILK.

If the tests of noted cows were made known in quarts instead of pounds, the experiments would be more easily understood. It may be supposed that every farmer knows how many pounds of milk are contained in a gallon, but the common custom of measuring with the liquid system is not easily usurped, and we may safely assert that there are hundreds of farmers who read of the yield of cows, given are so many *pounds* of milk, and yet do not feel competent to state what that quantity should be in liquid measure. The method of weighing by the scales also misleads, as the quantity is usually seeming larger than that from good dairy cows; but give the record in quarts, and every farmer understands the quantity at once.

Milk does not weigh the same under all conditions. A gallon of new milk should weigh eight pounds and eight ounces, or two pounds and two ounces per quart. It requires a pencil and paper for the farmer to reduce a certain number of pounds to the more familiar quarts, owing to the weight of a quart exceeding two pounds, and with a fraction to contend against. Again, skimmed milk weighs an ounce more to the gallon, or eight pounds and nine ounces, while cream weighs only eight pounds and four ounces. Buttermilk, however, weighs eight pounds and eight and a half ounces, and the fraction in that case is a bother. Few farmers read milk records closely when pounds are given, for they do not wish too much arithmetic in simple state-

ments, although the weight system may be preferable at times; but give the production in quarts, and greater interest will be created in the tests, for the easier and more thoroughly understood the experiments, the better for those who make them and for those who are indirectly interested.—*The Farm, Field, and Fireside.*

DAIRY DOINGS.

THE whey or buttermilk should be utilized before an excess of acid has consumed the better portion of it, as it invariably does when stored in large quantities.

NOTHING should be given a milch cow that, so far as quality is concerned, we would not be willing to eat and drink ourselves. Pastures should be free from weeds, brush and rank grasses, also from bitter herbs and low-growing deciduous and evergreen trees.

EVERY housewife should have a jar exclusively set apart in which to keep cream. It should not be allowed to remain any length of time in a jar which has previously contained vinegar, apple butter, pickies, etc., unless it has undergone a thorough washing and airing.

THE proper way to do where cream that has been skimmed at different times is to be churned, is to thoroughly mix it by stirring several times during twelve hours, keeping it in a temperature of sixty degrees, and it should not stand longer than that if the temperature is lower and less if temperature is higher.

THE great flow of milk of cows is truly artificial. In a state of nature the cow gives only the necessary quantity, and gives it only the necessary time to sustain the calf. The greater and longer yield of milk is the result of better feeding, better treatment, and longer manipulation of the teats. Hence, to increase the yield of milk, feed and milk well.

WHILE calves will eat a little hay or straw when two or three weeks old, it is doubtful if the stomach is able to digest such food at a less age than five or six weeks. The juice of hay or hay tea causes no evil effects, but the hay or straw is too harsh for their digestive organs and is believed to cause scours or looseness of the bowels, and is detrimental.

A VERY persistent effort is making to boom the new mechanical device for separating the cream from milk by centrifugal force. No doubt it can be done, but as a steam engine is required to operate it, and few dairymen have such a thing in their dairies, the new machine is of very limited use. But while a new thing may be good in its limited way it is wrong to malign all other methods for the purpose of favouring the new one, and yet there are frequent statements published to the effect that cooling milk by means of ice is exceedingly injurious to the butter made from it, and no really good butter can be made without a centrifugal separator. Dairymen should not be misled to abandon their common sense. Coolness is beneficial to milk and cream raising in the hot weather, and the very finest qualities of butter have been made by cold setting. It does not matter how the low temperature is produced, whether by cold air, cold spring water, or by ice. The effect is the same with all.

SHEEP AND SWINE.**LONG-WOOLS.**

To Messrs Bakewell, Culley, Charge and Webb, etc, we chiefly owe the perfection of our present breeds, and to the first is due the famous Leicester.

There are three varieties now, the original or Bakewell (once called Dishley), the Border and the Yorkshire. The origin of the breed is not known, but from the earliest times it has dwelt on the rich low lands of the Midland counties of England, which give a plentiful supply of rich and sweet grass.

There were two varieties of the old Leicesters, called the Forest sheep and the Old Leicester. The first, so called from Charwood Forest, and probably the original breed were generally polled (though some had small horns), and mostly white, but sometimes grey faced and legged. The second was either descended from it (improved by Lincoln crosses) or from a large-boned, coarse-woolled breed, common to the Midland counties.

The Old Leicesters were large, heavy animals, and slow feeders, with long, thin, flat sides, large bones, and thick legs; their meat was coarse and without much flavour or delicacy. The ewes weighed eighteen or twenty pounds a quarter; the wethers from twenty to thirty, at two or three years old. The wool was ten to fifteen inches long, and of variable quality, though generally coarse, and eight to fourteen pounds.

Some breeders sought large bodies and heavy fleeces, and used large, heavy boned stock, but Mr. Bakewell went quite an opposite course. In 1755, at Dishley, in Leicestershire, England, he began to improve the old Leicester, and though he kept his methods secret, yet keen watchers inferred a good deal. He thought even bodies and early maturity of first importance, and found them among the smaller animals, of medium fleece, as the latter fatten and ripen quicker than heavy wools. If he neglected the wool thereby, it was because a couple of pounds more of it did not pay for a year or so added to the sheep's maturity period. He selected the best Leicesters he could find, and seemed to use any sheep, regardless of breed, colour, or relationship. He thus used six or seven different breeds to reach his aim, and one visitor said he saw a splendid black ram at the stables, but the result is a good illustration of his success. In 1760 the yearly rental of his ram's services was \$4 each, but in 1789 one ram was let for one year at \$6,600.

After Mr. Bakewell's death the close inbreeding followed made the Leicester rather delicate, of weaker constitution, smaller body, less prolific, and less careful mothers, but a cross with the Cotswolds has restored these points.

Rapid fattening and early maturing are not, as a general rule, attendants of great fertility, in any animal.

The improved Leicester of to-day is hornless has a small, fine head, bare poll, large, bright prominent eyes, a clean white face and legs a square, deep neck and shoulders, a straight flat broad back a deep body, fine bones flesh tender and juicy, very fat outside, but not much inside the body. The fleece is fine silky glossy and white of moderate

length, and weighs from seven to nine pounds. The skin is soft, thin and elastic, and of a delicate pink tinge when the animal is in good health.

The Leicester has been widely used to improve other breeds, long and short wool. It matures rapidly and early, if well fed, dressing at one year 100 pounds, at two years 150 pounds, and a four-year-old ram has weighed 380 pounds alive. They need good keep, care and shelter, for the best results, and are said not to resist sickness very strongly. They are capable of quick improvement, while their proportions of good meat to offal, and of returns for cost of keep are very large. They are said to be the quickest growers and earliest maturing of all sheep, reaching the greatest weight, in shortest time, of wool and mutton—points that render the long-wool breeds profitable.

We may classify the present long-wools into those which remain on their original home, the rich, low lands and drained marshes of the Midlands, and those which are now common features of dry uplands devoted to mixed farming.

To the first belong the Lincolns and Romney Marsh sheep, while the second (Leicesters, Cotswolds, and Oxford Downs), have had their numbers largely increased, quality improved, and sphere widened, under improved methods of farming that allow the growth of large crops of clovers, roots and grasses, and the use of concentrated foods, as oil cake, etc. Every farm in Canada of 100 acres, in mixed farming, can carry thirty such sheep profitably.

Leicester or Cotswold ewes crossed by black-faced Down rams (Southdown, Hampshire, or Shropshire) give the best general-purpose sheep, and suitable to the English markets, where black-faced mutton is preferred. The first cross is preferred by butchers, who give more for it, especially wethers, in any number, and these crosses ought to weigh, at two years, 150 pounds. A demand for this wool has also risen in the past five or six years in Canada and the United States, improved machinery now handling it perfectly, and using it for underclothing, tweeds, serges, etc.

In Ontario long-wools sell for twenty-eight cents a pound, while Southdown and cross-bred wool brings thirty-eight cents. But we trust our farmers will take better care to keep their sheep-fleeces cleaner than is done there, where a buyer states that twenty per cent. is injured by burrs, chaff, seeds, and bad washing, while only two per cent. of the imported wool (English, Irish and Scotch) is so injured.

BERKSHIRE.

This is claimed to be the foremost and best of all, and even the original Berks were noted for hundreds of years.

They had long, crooked mouths, upturned muzzle, ears large and heavy and rather hanging forward, body long and thick-set on short legs.

They were of very large size, colour, black and white, or reddish spotted, and were large boned. Upon these sows were crossed the small and highly refined boars of China, and the grade boars from this union were next used on the old sows (it is probable), as being a less violent cross than the pure Chinese.

The latter is seldom or never used now, by English breeders.

From here, then, sprang our Improved Berks, and to Lord Barrington (who died in 1829) much of the credit is due, as the greater part of the best blood traces back to his stock.

Neapolitan blood has also been used with good effect, though as far back as 1796 Berks were said to give more profit at nine months old than the old white breeds would at two or three years old.

Berks are now classed as medium and small breeds, though they often reach great weights. Their style is attractive and spirited, showing thorough breeding and constitution. Their body colour is black, of a slaty, blue or plum colour tinge, white feet and tip of tail, also dash of white on face, and perhaps nose, or joint, or arm, but nowhere else. The skin is smooth and pliable, hair black, fine, soft, rather thick and silky, face fine and well dished and broad between the eyes, with short snout. Eyes very clear, rather large, dark hazel or gray; ears almost erect but sometimes incline a little forward from age, of medium size, thin and soft, joints full and heavy, running well back on neck, neck short and broad on top. Shoulders thick and even, broad on top and deep through chest; back broad, short and straight; ribs well sprung, close coupled to hips; sides deep and well let down, with straight lower line; flanks well back and low down on leg, making nearly a straight line with lower part of side. Loins full and wide, hams deep and thick, running well up on back, and holding thickness well down to hocks; tail well set up on back, tapering, and not coarse; legs short, straight and strong, set wide apart, with hoofs erect, and capable of holding good weight.

The above are the standard points of the American Berkshire Association, and any reader owning a Berk, can scale it by this description, and the nearer the animal approaches it the better its breeding.

The Red Berks are an offshoot of the old breed, imported to America early in this century, and are said to be great bacon hogs, at eight or nine months old dressing 300 or 350 pounds.

Some object to black pigs, but the colour is only skin deep, and their pork is as white as any other.

The Berks and their crosses are suited to all parts of this country, and every one of our farms of 160 acres, under mixed crop system, could yearly fatten thirty of them, and winter as many more.

Berk boars crossed on the coarse, common sows of Ontario, or large, improved white sows of the United States (Chester County and Cheshire, etc.), would give a splendid breeding pig.

The Berks are hardy, prolific, good foragers and splendid graziers, and with great tendency to fatten.

There are some good instances of the result of such crosses as above. In one case, at eight months old, the pig weighed 404 pounds, and at fourteen months, 536 pounds. In another case a pure Berk, at one year old, dressed 400 pounds, and another gained 496 pounds in 166 days' feeding. But any of them, or their grades, can be made to weigh from 180 to 250 pounds at seven to nine months old, and many

say this is about the most profitable age for any market pigs. These are about the weights now in best demand for packing, with plenty of lean mixed among the fat, and young pork costs less to grow than older pork.

There is money to be made here in feeding large and small numbers of pigs, if the right breed is chosen and well managed. It is difficult to say which is the best breed, as that depends on locality, feed, markets, tastes, etc., but the best breed is the one with least offal, is compact, with most meat of best quality, and matures the quickest.

One acre of good clover will pasture ten pigs of 200 pounds each, and more, if it is cut and fed to them with a little meal slop.

The waste in killing well-bred pigs is about one-fifth or one-sixth, very much less than the "racer" breeds.

PESTS OF THE LAMBS.

When the sheep are sheared the annoyance which they have been suffering for months back from ticks may be realized. Few owners of flocks take the trouble to examine their sheep to know in what condition of misery they may be, or to discover the reason why they pine slowly away until they perish in the fence corners where they have secluded themselves. No other domestic animals suffer so much from parasitic pests as sheep, and of these pests, ticks are one of the most annoying. We have heard of a lamb which had been sheared in the fall having more than 3,000 of these blood-sucking pests upon it, and it only weighed twenty-six pounds. This number is sufficient almost to cover the whole surface of the wretched animal, and its sufferings through the winter can scarcely be realized, thus made a prey by the careless neglect of its owner to these tormentors. No wonder that sheep should be subject to so many ailments when this, the most conspicuous one of these many pests, is permitted to prey upon it in this injurious manner.

This season is a very fit and proper one for considering this subject, because the young lambs are now about to become subject to a variety of pests, and if they are to be saved from them immediate steps must be taken to this end. As regards the ticks, a remedy is quite easy, because when the sheep are shorn these creatures gather upon the lambs for their needed shelter in the wool. Then, if the lambs are properly treated, the ticks may be completely destroyed. This treatment consists in dipping the lambs in a preparation of tobacco and sulphur made as follows: Four ounces of coarse tobacco or of the stems are steeped in one gallon of boiling water; one ounce of flowers of sulphur to this quantity of tobacco is added, and the liquid covered up until the heat is reduced to 120°. A sufficient quantity is made to dip the lamb entirely, all but the head, and the lamb is kept in the liquid about ten seconds, the wool being rubbed with the hand, so as to bring the liquid in complete contact with the skin. This kills the ticks instantly, and as the lamb is turned loose the dead insects will be seen dropping from the fleece. The liquor should be kept up to the above temperature to maintain its efficacy. For a small number the liquor may be poured into the wool along the back, and guided through it on the sides

and flanks, but dipping is the most effective method of applying the remedy.

Another destructive enemy of young lambs is the throat thread worm, a small white worm known as the thread strongyle (*Strongylus filaria*), and a related creature to the gap worm of young chickens. This worm inhabits the bronchial tubes and the air passages of the lungs and produces the disease known as "paper skin" or "pinning," and professionally known as anæmia, or bloodlessness. The animal becomes emaciated and its skin white and transparent; the blood has not its healthful red colour, being deficient in the red corpuscles for want of the necessary oxidation in the lungs, and the lambs gradually pine away until they are found dead. This pest inhabits the older sheep, but it is not so frequently fatal to them, although it interferes considerably with their thrift. As the worms mature and die in the intestines of the old sheep, they, with a large number of eggs, are discharged in the excrement. When this is dropped upon the grass and the dung is moistened and dissolved the eggs are released and hatched into minute worms, which become attached to the grass and are thus taken into the stomachs of the sheep and lambs that are pastured on fields where sheep have run the year before, or which have been top-dressed with manure from the sheep-pens. To avoid the trouble it is only necessary that the lambs should be kept from such fields and provided with clean pasture. As a relief from the disease when it has invaded the flock, small doses of turpentine are given daily for several days in succession, and at least one hour before the lambs are fed. The dose for a three or four months' old lamb is one teaspoonful, given in as much molasses to soften its irritative effect. But as with all other disorders of sheep and lambs, prevention is the most effective cure.

BREEDING SWINE.

Phil. Thrifton, in the *Breeders' Gazette* says sows more frequently take the boar within a few days after farrowing than they do when suckling pigs three weeks or more old, and as a rule, if sows pass the first week after farrowing without being served, they seldom come in again until they have weaned their pigs. By the time the pigs are five or six weeks old the sow will, at best, even if well and regularly fed, be so worn down in flesh and spirit as to be in no fit condition for breeding.

We must not forget that the final outcome of an animal depends largely on the start it has in life, and that this start may not improperly be counted as dating sometime prior to actual birth. In fact, care should be taken that both sire and dam are in the best possible physical condition at the time of mating. Temporary debility on the part of either may cause entire failure to breed, or if not, the offspring may be deficient in constitutional vigour, or it may inherit any special defect or impaired condition affecting sire or dam at time of service. Hence it is well, for the good of each successive generation, that when the physical energies of the dam are necessarily directed so entirely to the secretion of milk for her dependent offspring, her repro-

ductive functions should for the time remain inactive.

A sow that suckles her pigs well, has enough to do in the conversion of what she eats into milk for the youngsters that hang upon her for supplies. She cannot successfully grow two litters at the same time—one within and the other without. It is possible to crowd three litters within twelve months, but like the twenty-seven pounds or more of butter in one week from the cow that eat one hundred and forty-two pounds of feed per day, their cost would be greater than their worth.

CARE OF BROOD SOWS.

From the time the sows are bred until after they have dropped their pigs is the only time they require different care from what they do the rest of the year. To raise the most pigs from the least number of sows is where some of the profit comes in in raising hogs.

At the time the sows are bred they must not be too fat, or they will only have a few pigs a piece. They are sure to be small and weak if the sows are kept fat until the pigs are dropped. The sow is more liable to lie on them, and smother them, as they are not as careful of their young when they are fat. Fat sows that are to come in the next sixty days should have their rations cut down so that they will only be in good stock condition when they drop their pigs.

A week or ten days before the pigs are dropped the sows should be put in a yard by themselves with a shed in which to place their nest, being careful not to give them too much or too coarse bedding. After they have had their pigs "give them a good letting alone" for at least two days. By that time the sow will leave her pigs to get her feed. To disturb a sow before that time is often fatal to some of the young by their tramping or lying on them. For a week or so feed the sow plenty of milk or bran slop, and but little corn, as corn makes the milk so rich that some of the pigs are liable to have sore mouths. After that feed the sows all the corn they will eat, with a good pasture to run in, and my word for it you will raise pigs that will do your hearts good to look at, and plenty of them if you have the right breeds.—*Cor. Prairie Farmer.*

It is now the proper time to tag sheep. Especially should ewes with lambs have the filthy locks clipped off, and many of them need the shears used about the udder. The longer wool there often interferes with suckling the lambs, and they are also liable to sicken, from the filth they take in.

An English flockmaster says he prefers to castrate when the lambs are about a month old, because when treated in this way they become fuller in the leg and more fleshy in the back as they grow up. This is an important consideration, as it gives a more valuable leg of mutton for roasting or boiling, and a fuller, more tender and juicy saddle. He also keeps his nursing ewes in rather high condition, contending that fat dams make fat lambs. Thus treated, the ewes not only give a larger quantity of milk for their offspring, but it is also of a more nourishing quality. This renders the treatment better all around.

GARDEN AND ORCHARD.

CULTIVATING THE ORCHARD.

There is a great variety of opinion among farmers concerning the best way of managing an orchard. Nearly all agree that at first—during the first three or four years—the orchard should be cultivated; that is, some crops should be planted which would in some measure keep the soil stirred, whether the crop be corn, oats, wheat or potatoes. Rye and corn are hardly the best for the first year, especially for a very young orchard where the trees are small; and again with a cultivated crop, like corn or potatoes, there is always more or less risk of damaging the trees with the chains, single-tree or plough. Some plant in potatoes and then cover with straw, but so far as my experience goes this is a very poor plan.

I had a neighbour once who nearly ruined a fine young orchard of fruit set out that spring. The soil was first well ploughed and put in a good condition before the trees were set out. Later in the spring the whole was furrowed off in rows three feet apart, one way, running the plough as close to the trees as possible. Then the whole plot was planted in potatoes, in drills, the hills eighteen inches apart. After they had sprouted well, or in about ten days, the whole was covered with straw from twelve to eighteen inches apart. The orchard had been set out near his house and barn buildings. The trees seemed to do first-rate during the summer, but late in the fall, when the potatoes were dug, the trees showed the effect, as fully four-fifths of them were ruined by the mice. They had burrowed under the straw and had stayed all the time, living on the potatoes and the bark of the young trees. Although a fine crop of potatoes was raised, yet the damage to the orchard was greater than the profit on the potatoes.

In two or three instances I have noticed a crop of vines such as watermelons, pumpkins, etc., raised in a young orchard to a good profit, and without damaging it. Oats or sweet corn are good crops, as neither occupy the land for any considerable length of time, and yet long enough to keep down the greater part of the weeds.

The usual practice is to plant to some crop for two or three years, and sow to grass. This plan is a very good one if in following it out we do not neglect the orchard. If we want to secure two crops in this way from the same land in one year, we must care for it in such a manner that the land will be able to do this, and the only way to accomplish the result we seek is to manure.

A good top-dressing should be applied if possible every fall; a light dressing of well-rotted manure spread evenly all over the surface—that, too, without any lumps to damage the grass, will prove better and give more profitable results than a heavy dressing given every three or four years in such a way as to damage the grass.

The trees should have the soil for a considerable distance around the trunk stirred up and good fertilizers applied, for this purpose wood ashes unbleached are very valuable. The worst objection to seeding down an orchard is the tendency to let it take care of itself, after a good stand of grass is obtained. I

know of an orchard that had been neglected until it was worse than unprofitable, it was an expense. The owner first ploughed up the whole plat as well as he could, and then gave a heavy application of manure early in the winter; this was spread evenly, not all around the trunks of the trees, but all over the ground. Twice during the winter the plat was well harrowed, so as to incorporate the manure into the soil; early in the spring, as soon as the soil could be worked well, the whole was ploughed again, harrowed as fine as possible, then rolled and seeded to clover. Since then the owner has realized four fine crops of apples, and has a tip-top clover pasture besides in which he keeps his sheep or hogs.

I know of another orchard—and it is a good one—that the owner acknowledges has paid him better than any plat on the farm. He manages it in this way: after the orchard became established he ploughed the land in strips, but only ploughed between the trees, never running nearer than four feet on either side of the trees; that is, he left a strip about eight feet wide one way of the orchard that was left unploughed. Potatoes were planted and covered with straw; in the fall the straw was piled in long rows opposite to the ground ploughed and planted the year before, and the potatoes dug the next spring. This soil was ploughed crossways, and in the same manner as before, and planted to potatoes. This old straw was used to cover again. The next fall the straw was thrown off the same as before, and the potatoes dug; after this the land was well ploughed, and at each round of the plough the furrows were filled with the straw, and then covered up the next round. During the twelve years the orchard has been treated in this way, but two applications of other manure—rotted manure from the stable—have been applied. The rotting straw has been of considerable benefit.

The fertility of the soil has been kept up, a fair crop of potatoes raised, and the owner, of course, thinks it an excellent plan. One thing is certain we must enrich the soil if we expect an orchard to prove profitable. The idea that an orchard after it once gets started will take care of itself is a decidedly mistaken one, and if we expect to raise some other paying crop in the orchard extra care in this respect must be given.

Taking all things into consideration, I prefer to cultivate an orchard at least three years after setting out, and then give a good application of manure, put in good condition, and seed to clover, using it then for hog and sheep pasture. In this way the fertility can in a great measure be kept up without extra application of manure, and although we may not find the clover a profitable crop for hay, yet it will furnish a very large amount of the best of hog feed, and then, too, at a very low cost, and by using it in this way we will be able to make the orchard yield as great profits, taking one year with another, as any other part of the farm.—*N. J. Shepherd, in Prairie Farmer.*

You will find your apple and pear trees, which you mulched heavily last summer, to have survived the winter in much better condition than those you left unmulched. Note the difference, and see that they are all well mulched, as soon as you can attend to it.

APPLE GROWING IN CANADA.

A south Ontario apple grower gives the *Globe* the following points from his own experience. He has upwards of 3,000 apple trees, chiefly the Baldwin, Russet, Greening, King of Tompkins County, Northern Spy and Belleflower, with also a few Duchess of Oldenberg and Red Astrachans. The trees are admittedly too closely planted, the distance between them being only twenty-two feet. The trees are trained umbrella fashion. An effort has been made to keep the lowest limbs sufficiently high to allow of easy cultivation with a horse. Injuries from bruising or broken limbs are simply plastered over with manure and tied round with pieces of canvas. An experiment has been tried of bolting together with iron bolts a few trees or limbs that were split. They were apparently as healthy as the other trees, and the iron seems to have had some effect upon the sap in checking borers.

The bark of the trees is kept clean by reason of the thorough washing with soap suds which they receive once every two years. Extra rapid growth of young trees has been secured by manuring every year with stable manure. Not only may larger trees and quicker returns be secured from liberal manuring, but the fruit is improved both in flavour and appearance. It is claimed that scabbiness of fruit may be prevented by liberal manuring. Little trouble has been experienced from mice, partly from the fact that the young orchard has not been kept in grass. Pinching back is practised to some extent, so as to thoroughly ripen the wood against the winter frosts. Frequent applications of stable manure are not recommended in the case of mature trees, since a slower growth of wood is then desired. Instead of the usual rotation of crops and summer fallow pursued in the case of young orchards, the mature orchards are seeded down and manured as found necessary, the grass kept closely cropped to prevent harbourage for mice.

A market for these apples is found chiefly in the United States, though early apples are sold in Canada, and considerable quantities of later fruit find sale for export to Liverpool. It is found that the Americans take an apple chiefly on account of its flavour and keeping qualities, while to the English buyer appearance seems to be a more important consideration. The demand in Liverpool is for red-checked apples, which command higher prices than green or white apples of superior flavour. By thinning the branches toward the sun, thus admitting the sun's rays to all parts of the trees the requisite colouring of the fruit is advanced.

Our best tomato varieties are nearly alike in point of earliness. The difference in time of maturing the fruit is so insignificant to be taken into consideration.

To protect the currants from insect ravages, the insect's first appearance should be met with free sprinklings of the bushes when the dew has disappeared, of whale-oil soap and water, made quite strong, say a pound and a half of the soap, to three or four gallons of water, or, in place of this, carbolic soap and water may answer equally well.

Miscellaneous.

Advertising Cheats!!!

"It has become so common to write the beginning of an article, in an elegant, interesting manner,

"Then run it into some advertisement that we avoid all such,

"And simply call attention to the merits of Hop Bitters in as plain, honest terms as possible,

"To induce people
"To give them one trial, which so proves their value that they will never use anything else."

"THE REMEDY so favourably noticed in all the papers,

"Religious and secular, is
"Having a large sale, and is supplanting all other medicines.

"There is no denying the virtues of the Hop plant, and the propriety of Hop Bitters have shown great effectiveness.

"And ability
"In compounding a medicine whose virtues are so palpable to every one's observation."

Did She Die?

"No!
"She lingered and suffered along, pining away all the time for years,"

"The doctors doing her no good;"
"And at last was cured by this Hop Bitters the papers say so much about."

"Indeed! Indeed!"
"How thankful we should be for that medicine."

A Daughter's Misery.

"Eleven years our daughter suffered on a bed of misery,

"From a complication of kidney, liver rheumatic trouble and Nervous debility,

"Under the care of the best physicians,
"Who gave her disease various names,
"But no relief,

"And now she is restored to us in good health by as simple a remedy as Hop Bitters, that we had shunned for years before using it."—THE PARENTS.

Father is Getting Well.

"My daughters say:
"How much better father is since he used Hop Bitters."

"He is getting well after his long suffering from a disease declared incurable."

"And we are so glad that he used your Bitters."—A LADY of Utica, N.Y.

RICE AND APPLE SOUFFLE.—Boil two tablespoonfuls of rice in half a pint of milk until soft; sweeten, and add the beaten yolks of two eggs. Pare and core some apples and stew them until they are soft but not broken. Make a wall of the rice around the edge of your dish; put the apples in the centre; fill up between the apples with rice, and put a bit of jelly in each place. Cover the whole with the whites of the eggs, well beaten and made stiff with powdered sugar. Brown lightly in the oven and serve with cream.

DR. J. COLLIS, St. Thomas, writes:
"During ten years' active practice I have had occasion to prescribe Cod Liver Oil and Hypophosphites. Since Northrop & Lyman's Emulsion of Cod Liver Oil and Hypophosphites of Lime and Soda came under my notice, I have tried it, and take great pleasure in saying that it has given great satisfaction, and is to be preferred to any I have ever used or recommended. I have used it in my own family almost as a beverage during heavy colds, and in every instance a happy result has followed. I cheerfully recommend its use in all cases of debility arising from weakness of the muscular or nervous system."

AN IRISHMAN on board a vessel when she was on the point of foundering, being desired to come on deck as she was going down, replied that he had no wish to go on deck to see himself drowned.

REMARKABLE RESTORATION.—Mrs. A. O'Brien, 372 Exchange Street, Buffalo, was supposed to be dying with consumption and abandoned by her physician. She suffered terribly and was reduced in flesh to ninety pounds. In this condition she resorted to Burdock Blood Bitters, and now enjoys perfect health and weighs one hundred and forty-six. She will gladly answer enquiring sufferers on receipt of U.S. postage stamp.

CRUMB GRIDDLE CAKES.—Two cups sour milk, or buttermilk, two cups stale bread-crumbs, one-half cup sifted Graham flour, one egg well beaten, one teaspoonful soda dissolved in boiling water. Soak the crumbs in the milk till soft; then work till smooth, and add enough flour to bind the mixture together. Stir in the beaten egg and dissolved soda, beat very hard, and bake to a good brown; the griddle should be well oiled. If preferred, use part sour cream and leave out the egg.

CUCUMBER CATSUP.—Grate two dozen grown cucumbers and six silver-skinned onions. Sprinkle half a tumbler of salt upon them. Prepare them in the evening, and early in the morning lay them on a sieve and let them drain. Sook a tea-cup of white mustard seed, drain them from the water, and add to the cucumbers a wine glass of whole peppercorns. Put all in a jar and cover with vinegar. Keep in a wide-mouth jar, cork well, and put away in a cool place.

JOHN HAYES, Credit P.O., says: "His shoulder was so lame for nine months that he could not raise his hand to his head, but by the use of Dr. Thomas' Electric Oil the pain and lameness disappeared, and although three months have elapsed, he has not had an attack of it since."

Mr. X's son (just returned from abroad, to new Irish butler, engaged during his absence: "Do you belong here?" Butler: "Bedad, sir, I do; an' if I didn't belong here, sure I wouldn't be long here."

MR. PARPETUS BOILAU, Ottawa, says: "I was radically cured of piles, from which I had been suffering for over two months, by the use of Dr. Thomas' Electric Oil. I used it both internally and externally, taking it in small doses before meals and on retiring to bed. In one week I was cured, and have had no trouble since. I believe it saved my life."

TO TEST THE PURITY OF WATER.—A French journal gives the following simple method for testing the purity of water: In an ordinary quart bottle three parts filled with water dissolve a spoonful of pure white sugar, cork it well and put it in a warm place. If at the end of forty-eight hours the water becomes turbid and milky there can be no doubt of its impurity, but if it remains limpid it may be considered healthful and safe to drink.

HOLLOWAY'S CORN CURE is the medicine to remove all kinds of corns and warts.

A FASHIONABLE lady, in boasting of her new "palatial residence," said that the windows were all stained glass. "That's too bad!" cried her mother, "but won't soap and turpentine take the stains out?"

DANGER IN THE AIR.—The recent strange planetary movements and electrical phenomena have developed the fact that the earth is passing through a dangerous period when atmospheric influence will seriously affect human health. Fortify the weakened system with that grand tonic regulator, Burdock Blood Bitters, and avoid malarial blood poisons.

GREEN PEA SOUP.—Boil soft a peck of peas, mash, and strain through a sifter; add a slice of onion, chopped fine, pepper, salt, a little thyme and parsley. After the soup is well boiled, strain it, and let it stew until ready to serve. Reserve a few whole peas, and put them in the soup. To a peck of peas add three quarts of water.

SAVED FROM THE SCALPEL.—A Toronto lady, Mrs. Berkenshaw, contracted a disease of the knee joint and was advised to submit it to a surgical operation by the best physicians attending; all other treatment having failed, when Haggard's Yellow Oil was tried and speedily effected a cure. It is the unfailing remedy for accidents and emergencies, and is for external and internal use.

It is related of a Lancashire young woman and a Chinese lady that on being introduced they looked at each other's feet, and then both fainted dead away, the former from mortification, and the latter from fright.

THERE IS NOTHING EQUAL TO Mother Graves' Worm Exterminator for destroying worms.

SWEET PUDDING.—Six eggs, three cupfuls of sugar, four of flour, one teacupful of buttermilk, one teacupful of butter, half a teacupful of soda, and one teacupful of cream of tartar.

PREMONITIONS OF APPROACHING DANGER, in the shape of digestive weakness, lassitude, inactivity of the kidneys, pains in the region of the liver and shoulder-blades, mental depression coupled with headache, furred tongue, vertigo, should not be disregarded. Use Northrop & Lyman's Vegetable Discovery and Dyspeptic Cure, and avert the peril to health. It removes all impurities and gives tone to the whole system.

EPITAPH.—Here lies John Fallows, who lived at All Hollows. He was a maker of bellows. But though he made bellows, he couldn't make breath; and for the want of that it brought on his death.

MR. GEORGE TOLES, Druggist, Gravenhurst, Ont., writes: "My customers who have used Northrop & Lyman's Vegetable Discovery and Dyspeptic Cure say that it has done them more good than anything they have ever used." It has indeed a wonderful influence in purifying the blood and curing diseases of the Digestive Organs, the Liver, Kidneys, and all disorders of the system.

THE BUSIEST PLACE IN OHIO.

Any person who visits the Advertising Agency of Lord & Thomas, McCormick Block, will not doubt that they are transacting an immense business with the newspapers of the country. A thorough knowledge of their business, coupled with energy and a liberal use of their own medicine, has placed them in the front rank of advertising agencies in the United States.

We will not state the exact amount, but we will say that during the past few weeks they have closed contracts which will aggregate hundreds of thousands of dollars, and this business has been secured in competition with the Eastern agencies, thus demonstrating their claim of possessing unequalled "facilities."

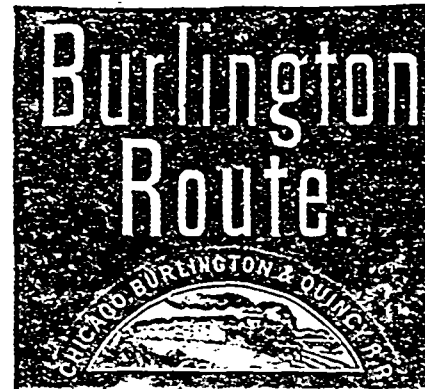
Their business offices are veritable hives of industry, every member of their efficient corps of employes being furnished with work enough to develop their working energies. We think this firm might well adopt as their motto "Courtesy and Energy." The Herald congratulates them on their merited success.—Chicago Herald, May 10.

IMPORTANT TO TOURISTS.

Commencing May 15th and continuing until October 1st, round trip tourist tickets, good going fifteen days from date of sale and good returning until October 31st. Can be purchased at very low rates, to Denver, Pueblo, Colorado Springs, and other Colorado Tourist Points, via the BURLINGTON ROUTE (C., B. & Q. R.) This famous line is the only one extending from Chicago, Peoria or St. Louis, direct to Denver, and the only one running through trains without change every day in the year between Chicago and Denver. In addition to above trains which run via Pacific Junction, it also runs over its own lines, through daily trains between Chicago, Peoria, Kansas City and Atchison; and through daily trains between Kansas City, Atchison and Denver, thereby enabling it to offer the tourist the option of purchasing tickets by a greater variety of routes than any other line. Remember these facts, and when ready to start call upon any railroad ticket agent in the United States or Canada for tickets, rates and detailed information, or address FREDEWALD LOWELL, General Passenger Agent, Chicago.

HELP WANTED. Agent wanted in every place to sell our new goods Big Pay. 40 samples only 10c. None free. Cut this out. ACME NOVELTY CO., Clintonville, Conn.

THE LINE SELECTED BY THE U. S. GOV'T TO CARRY THE FAST MAIL



GOING WEST.
ONLY LINE RUNNING TWO THROUGH TRAINS DAILY FROM CHICAGO, PEORIA & ST. LOUIS,

Through the Heart of the Continent by way of Pacific Junction or Omaha to DENVER,

or via Kansas City and Atchison to Denver, connecting in Union Depots at Kansas City, Atchison, Omaha and Denver with through trains for

SAN FRANCISCO, and all points in the Far West. Shortest Line to KANSAS CITY,

And all points in the South-West. TOURISTS AND HEALTH-SEEKERS

Should not forget the fact that Round Trip Tickets at reduced rates can be purchased via this Great Through Line, in all the Health and Pleasure Resorts of the West and South-West, including the Mountains of COLORADO, the Valley of the Yosemite, the

CITY OF MEXICO, and all points in the Mexican Republic.

HOME-SEEKERS Should also remember that this line leads direct to the heart of the Government and Railroad Lands in Nebraska, Kansas, Texas, Colorado and Washington Territory.

It is known as the great THROUGH CAR LINE of America, and is universally admitted to be the Finest Equipped Railroad in the World for all classes of Travel.

Through Tickets via this line for sale at all Railroad Coupon Ticket Offices in the United States and Canada.

T. J. POTTER, Vice-Pres. and Gen. Manager. FREDEWALD LOWELL, Gen. Pass. Agt. Chicago. JNO. G. A. BROWN, Gen. Eastern Agt. 57 Broadway, New York. and 20 Washington St. Boston.

SPECIAL OFFER.

To encourage settlement and cultivation of the Company's lands in the Red River Valley, all of the lands (not timbered) now owned by the

ST. PAUL, MINNEAPOLIS
—AND—
MANITOBA Ry. Co.

IN THE COUNTIES OF
NORMAN, POLK, MARSHALL, KITSON, in Minnesota, outside of a five mile limit from the road, will, during the year 1884, be sold to

ACTUAL SETTLERS

in lots of not less than 160 acres, nor more than 320 acres at the

Low Price
—OF—
\$3 PER ACRE.

The terms of payment will also be very liberal, only 50 CENTS an acre down, the balance in six annual payments at 7 per cent. interest. This offer will be open only between the 1st day of March and the 31st day of December, 1884.

First applicants will have their choice from the entire field without reserve.

FIRST COME, FIRST SERVED.

At these prices and terms, EVERY FARMER, EVERY FARMER'S SON, EVERY CLERK, EVERY MECHANIC, EVERY LABOURING MAN, can secure a home with the smallest possible outlay.

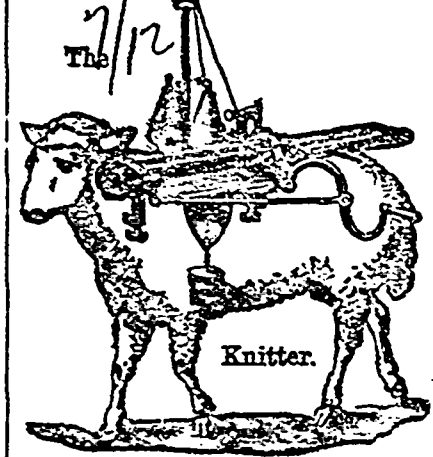
It presents the opportunity for every one to secure 160 acres of his own choice of land for only \$50 down and six annual payments of \$6.67 with interest.

It is the most liberal offer ever made by any Railroad Land Grant Company. The terms are better than can be obtained from the Government, and the lands included in the offer are the most productive of any unoccupied lands in the United States.

They are the cheapest lands, considering location and quality, in the United States, and every home seeker should take advantage of this offer without delay.

Write for Maps, general descriptive matter and other information, to

J. B. POWER,
Land and Immigration Commissioner,
ST. PAUL, MINN.



Lamb Knitting Machine,
The family favourite and standard manufacturing machine.

The LAMB KNITTING MACHINE makes all sizes of socks and stockings, cardigan jackets, shirts, drawers, combination suits, scarfs, caps, mitts, and in fact anything a family would want. It is not a common circular machine making only one size. You can make any size, narrow and wide, the same as in hand knitting. It is as far ahead of the common circular machine as the binder is ahead of the old cradle. It always ready to do any kind of work, is complete, neat, and everlasting; knits over twenty patterns in ten different stitches. On receipt of \$1 we will send you one pair full fashioned ladies' stockings, narrowed on the back, and one pair ladies' mitts. You can then see the actual work of the most wonderful and perfect knitting machine ever invented. Send for catalogue and price list.

J. H. STANTON,
Sole Agent for the Dominion,
44 CHURCH STREET, TORONTO.

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

O. BLACKETT ROBINSON,

Jordan Street, Toronto.

Publisher.

The Rural Canadian.

TORONTO, JUNE, 1884.

SPARE THE BUMBLE-BEE.

In the early days of settlement in Australia, farmers were greatly puzzled to find that red clover failed to mature little or no seed. Crop after crop was sown with seed imported from England, and still the clover heads were barren. What could be the cause? Was it something in the soil? or was it in the climate? No one could answer, and it seemed probable that the farmers of the great Australian continent must continue for all time dependent on foreign countries for their seed supply. But in the course of years a student of natural history observed that there were no bumble-bees in Australia, and knowing their important office elsewhere in conveying the fertilizing pollen from the anther to the ovule of the clover—which are rarely, if ever, in the same flower—he advised that the experiment be tried of importing female bees from England. His advice was so eagerly followed that for a time a bee and her brood fetched all prices from half-a-guinea to a guinea. The result was soon visible, for wherever a colony of bumble-bees was hatched out, the clover was found to mature its seed, and at the present day Australia produces a large surplus of clover seed for export.

We may explain that the bee in dipping her long proboscis into the deep flower-cup of the clover, and going rapidly from one flower to another, distributes the pollen which impregnates the seed and imparts to it the vitalizing quality of reproduction. The common honey bee has no part or lot in this office, for the reason that the honey in the flower is too deep to be reached by it; nor does there seem to be any other insect than the bumble-bee fitted to assist in this operation of nature's economy.

In a few days our clover fields in Ontario will be in full bloom, and the hum of the bumble-bee will arise with the fragrance of the flower. In a few days more and the mowers will be busy in the same fields, and many a nest of industrious bumbles will be pillaged by the farmer's boys for its little pots of honey. The larvæ, too, which in good time, if left alone, would multiply the number of bumbles many times, will be scattered and destroyed; and so it shall come to pass that, when the second crop of clover has reached the stage of fecundation in the fall, sterility will be the rule and fertility the exception. When we consider that under favourable conditions one seed should mature from every flower in a clover head, and how rarely the number reaches the proportion of one to four, we can understand how important it is that nature's agencies should be dealt with as friends, not as enemies.

Therefore we say of the farmer, and to the farmer's sons, "Spare the Bumble-bee." His office is a very useful one at all times, and it is doubly useful now when the clover midge

is working so much havoc in the clover fields. There is law for the protection of birds and for the protection of game, but knowledge without law should suffice for the protection of the bumble-bee.

FARM PROSPECTS IN ONTARIO.

So far this season has been very favourable for farming operations and for the growth of cereal crops. It is well known that land can never be profitably worked unless it is moderately dry; if sodden with rain no amount of cultivating or harrowing can get it into fit state as a seed-bed, and if sown at all it is sown at a risk. But this year the snow disappeared gradually and early, and throughout the greater part of April and the first days of May there were no rains to interfere with thorough tillage. The ground was consequently fine and friable as a general thing, and reports from all quarters indicate that the outlook was never more cheering for spring crops, unless the situation has been greatly changed by the cold dip of the last two or three days. The moderately cool weather and frequent rains of the last three weeks have greatly improved the appearance of the fall wheat, and in spite of the poor start it made in the fall, we shall not be surprised if the average yield for the Province reaches eighteen bushels per acre. It appears from the report of the Bureau of Industries that the acreage is considerably lower than last year, but it also appears that there is a marked increase in the acreage of spring wheat. This is only what might be expected to follow a poor crop in one case and a good one in the other; and if only a good yield of spring wheat is obtained, the compensation will be ample. It is, indeed, a question whether the farmers of Ontario have not, in the past, been paying too much attention to wheat growing, and too little to coarse grains, roots and live stock. The settlement of the western and north-western prairies is bound to tell on the wheat markets of the world; and we are beginning to realize also that we have formidable rivals in Russia, India and Australia. The failure of wheat in Canada and the United States last year led many farmers to hope that prices would go up to good paying figures; but it turned out that the deficiency on this continent was more than made good elsewhere. India was enabled to double her exports, and on the vast plains of Russia enough was produced to furnish nearly 200,000,000 bushels for the markets of western Europe. We are inclined to think, therefore, that the time has arrived for Ontario farmers to consider whether they cannot turn their fields to more profitable account than the growth of wheat for shipment abroad. To consume on the farm what is grown on it is the surest way to maintaining and improving the fertility of the soil; and the rapid increase of our export trade in cattle and sheep during the past eight years is a great encouragement to our farmers to engage more generally in this line of husbandry.

Gas for fuel is now made from sawdust. FLOUR is to be made from pea-nuts soon. AN American Shropshire Registry is started.

WALKS AND TALKS AMONG THE FARMERS.—NO. I.

It is generally supposed that the prejudice against book-farming, once rife in agricultural communities, is a thing of the past. There are hopeful signs of its disappearance, but, like all prejudices, it dies hard and slowly. It seldom ventures to make itself heard now, but it can be plainly seen in the scarcity of agricultural books and papers in rural homes. Only a small minority of farmers take a journal specially devoted to the interests of their calling. The majority seem content to plod along in the old rut, relying on the traditions of the past, and their own personal experience. I was talking with a farmer the other day about grass culture, the necessity of more care in laying down meadows and pastures, the wisdom of substituting varieties of improved grasses for the spontaneous herbage that generally occupies the land used for cattle runs; and so forth. I naturally referred to Prof. Brown's advices on the subject, when I at once got the reply: "Science is well enough, but it is experience that teaches." This remark is highly suggestive of comment. It seems to imply that science and experience clash, which is a great mistake. True science is always harmonious with experience. But the main point raised in my mind by this farmer's answer was whether a man should limit himself to the lessons of his own experience, or seek to profit by the experience of others? Agricultural journals are largely occupied with detailed experiences of practical farmers, and he who reads them has the advantage of adding the wisdom gained by others to his own stock, which is, after all, only limited. Your neighbour knows something that you do not. On the whole he may be less intelligent than yourself, but if you can add his store of wisdom to your own, you are that much richer, and he is no poorer. There is no cheaper or easier method of doing this than by taking an agricultural journal. The journal must be a very poor one, or its reader a great fool, if more than a dollar's worth of practical wisdom cannot be got out of it in the course of a year.

The reserve of wood-land on Canadian farms is commonly a sort of jungle. Old logs, brush heaps, and brush not piled, lie here, there and everywhere. With a little trouble, these "woods" might be converted into fine parks, pleasant to walk in, and useful for cattle runs. Why should they not be cleaned up? Many of the old logs, though partly decayed, would make firewood, and much of the brush would pay for the cutting up into fuel. It is questionable if even the twigs, are not worth more than it would cost to make them into faggots, after the old country fashion. How handy a bunch of dry hardwood twigs would be for making summer fires. Many a farmer's wife, scarce of kindling wood and perhaps condemned to the use of green fuel even in summer, would bless the provident economy that piled a supply of this kind in the woodshed for the time of year when quick, transient fires are needed for various domestic purposes. The woods, cleared of old decaying rubbish, and thinly seeded to grass would furnish a large area of pasturage. Orchard grass, which flourishes in partial shade, is the best kind to

sow in such places. It is greatly relished by stock, and far preferable to the coarser varieties that grow wild.

An observant, thoughtful person cannot but regret the uniform policy of the early settlers in making a clear sweep with the axe at the front of the farm, and always leaving the uncleared timber at the back. What a protection from the north and north-west winds a strip of timber is. What a shelter for fall wheat. And how comfortable a farm standing would be, if it were environed by trees. Stock would need less fodder, and a smaller quantity of fuel would keep the house warm, if the buildings were embowered in deciduous and evergreen trees. What a charm would be added to the landscape, and how much more pleasant country drives would be, had the plan just suggested been adopted. The only objection I can think of to this course is that it would be a little farther to the fields. Is this a very serious objection? How nice it would be in summer time to drive the loads of hay and grain through a short stretch of woods and enjoy their cooling shade. It would be very handy too in winter, not to have a long tramp to the back woods to do chopping. An hour or two's work could often be done with the axe, if the timber lot were close by. When you think it all over, the matter is pretty evenly balanced, with odds in favour of having the woods not far from the door-yard and barn-yard. In most cases, we can only say, "it might have been," for the clearing is done, and there is only a scanty reserve of timber far away from the homestead. Still, there are some new farms in regard to which the suggestion may be taken. Only the other day I drove past a spot, familiar years ago, where a farm had been left with the woods thinned out at the front, and the rear untouched. Beautiful second growth maples, beeches, elms, lindens, and other trees had developed into a lovely grove. "What a beautiful place for a country home," I had often remarked to myself. But, lo! on driving past, after years of absence, the lovely grove was gone, and a lonesome-looking frame house and barn stood out in the nakedness and desolation of an old-style clearing! Not a tree was left to shelter the buildings or cheer the waste. It is well that so many farmers are seeking to repair the mistakes of the past by tree planting. But they are a small minority compared with those who take no thought for old age, and little for the man who shall come after them.

Is it wise for a farmer, when past effective labour on the farm, to settle down on a little place in a town or village? Would it not be better to retain part of the old home, or build a small house amid the familiar and beloved scenes where so much of life has been spent? I see old farmers wandering about the town that lies within a few miles of my present abode, which I often visit, and they seem lost, as they really are, in the wilderness of streets and buildings, where they now live. All is strange, unnatural, and unhome-like to them. Perhaps they have invested too much in their town residences that they have but a meagre income left. Or if they have plenty to live on, they are like fish out of water. I called on one of this class the other day, who,

coming to this country a poor emigrant many years ago, has by dint of hard work and close economy become well enough off to buy a nice place in town. It comprised about an acre, beautifully laid out in shrubbery, lawn, small orchard and garden. But it did not suit the tastes and habits that had grown up in him. It seemed to him like a new farm to be cleared after the fashion of his old place. The deciduous trees were converted into firewood; the evergreens trimmed up head-high: he "didn't want a tree that he could not walk under;" the piece of garden ground had been enlarged to its utmost capacity, and, with the orchard, had been ploughed, seeded and harrowed. When I asked what he had put into the ground, he replied, he had "sowed it to ants." I suggested what employment for his leisure time it would have been, kept as a garden, and how it might supply his table in a place where everything had to be bought. His reply was that he did not know anything about gardening, and must put something into the ground. Now that he has got his seeding done and his crop all in, how will he employ and amuse himself all summer? His time will assuredly hang heavy on his hands. I think he would have been happier on the old place, where he could have done many odd chores, watched others doing the work he was fit for no longer, made companions of the horses, cattle, and sheep, and looked out every day on the landscape, every foot of which he knew and loved so well. Man is a bundle of habits, and it is too late in the day for him to form a new bundle, when he is verging on or past seventy. W. F. C.

CANADIAN SHORTHORN HERD-BOOK.

Below we give transfers of thoroughbreds reported up to May 20, 1884. In the following list the person first named is the seller and the second the buyer.

Cow, Flower Girl (vol. 9), by Butterfly's Athelstane [4719].—Geo. B. Bristow, Rob Roy; Lewis G. Bristow, Rob Roy.

Bull, Lord Elgin [12002], by 13th Seraph [11467].—Thos. McCrae, Guelph; Wm. Yoandle and A. J. High, Bayham.

Bull, Laddie [12004], by Abe [6560].—J. B. Carpenter, Simcoe; Jas. Lindsay, Nanticoke.

Bull, Prince Charley [12000], by Pontiac [7001].—John Lamont, Caledon; John Culham, Caledon.

Bull, Lord Aberdeen [12007], by 6th Duke of Kent [11643].—John Meyer, Kossuth; Isaac Croh, Hespeler.

Bull, Ben Booth [12012], by Sir Lewis [49345].—Hon. M. H. Cochrane, Compton, Que.; John H. McGill, Oshawa.

Heifer, Lady Shannon (vol. 9), by Brilliant [12010].—David Stewart, Everton; R. Gow-anlock, Maple Hill.

Bull, Brilliant [12010], by Barmpton Hero [5475].—J. & W. Watt, Salem; John D. Abbott, Eramosa.

Bull, Duke of Oxford [12015], by Young Granger [9589].—Asa Marr, Malbado, E. B. Brown, Brownsville.

Bull, Prince Royal 2nd [12011], by Sir Richard Booth [11358].—J. & W. Russell, Richmond Hill; G. D. Morse, Toronto.

Cow, Lily (vol. 8, p. 445), by General Sher-

man [5291].—John Schweitzer, New Hamburg; Jacob Weicker, New Hamburg.

Bull, Bradford Chief [12017], by Emperor [8532].—Jas. Sommerville, Elder's Mills; Matthew Faris, Bradford.

Cow, Flora Campbell (vol. 6), by Springbank Lad [6338].—John Douglas, Tara; John Robinson, Algoma.

Cow, Blossom (vol. 9), by Sultan [10981].—John Doyle, Elora; John Jones, Elora.

Bull, Baker Pasha [13018], by Butcher's Pride [8185].—John Hall, Beaconsfield; W. A. Christie, Beaconsfield.

Cow, Lewella 2nd (vol. 9), by Ryland Chief [7823].—Wm. Clemens, Tyrone; Jas. H. Rosevear, Cobourg.

Bull, Hamilton Duke [12020], by Oakland Duke [7528].—J. Sandford Sowden, Port Hope; T. C. Patterson Toronto.

Bull, Prince of the Valley [12021], by Canadian Chief [6704].—Jacob Reist, Conestogo; John Hibel, Conestogo.

Bull, Turtle Mountain Boy [12024], by Prince of Ontario [12028].—C. C. Reesor, Deloraine; Wm. Somerville, Deloraine.

Bull, Oakland Lad [12023], by Ruberta Duke [10872].—C. C. Reesor, Deloraine; Wm. Somerville, Deloraine.

Cow, Fidget (vol. 9), by Barmpton Senator [6595].—J. & W. Watt, Salem; Peter Morrin, Molesworth.

Bull, Sir Edmund 3rd [12025], by Sir Edmund 2nd [11817].—Arthur Walker, Fergus; Alex. Robertson, Molesworth.

Cow, Howick Lassie (vol. 9), by Barmpton Hero [6595].—J. & W. Watt, Salem; Peter Morrin, Molesworth.

Cow, Ethel 4th (vol. 9), by Patrick [10287].—Chas. McDonald, Allen's Corners; L. C. Lefebvre, St. Remi, Que.

Cow, Hilda (vol. 9), by Rover [9281].—John Weir, West Flamboro'; Jas. Thompson, Indian Head, Man.

Bull, Lone Land Chief [12079], by Earl of Goodness 5th [8514].—John Weir, West Flamboro'; Jas. Thompson, Indian Head, Man.

It has become possible to furnish an elegant country residence with many of the comforts and luxuries of a city home, but it is not very generally known that one of the greatest comforts of home—good gas-light—can be obtained with only a moderate expenditure, the combination Gas Machine Co. of Windsor, Ont., and Detroit, Mich., make an apparatus which is very simple in construction, and produces a soft brilliant light, equal to the very best coal gas made, and at about half the annual cost. This company are thoroughly responsible, and can be depended upon to do any job they undertake in a first-class manner. Write to the company at Windsor, Ont., giving sketch of building to be lighted, and they will give estimates as to probable cost.

MANURE intended for the fall wheat should be thoroughly rotted during the summer, and the coarsest material may be treated in this way if care is taken to build a compost heap. The only risk is that with too rapid fermentation much of the value of the manure may be wasted. Dry earth is one of the best absorbents, and if applied to the heap at intervals and in small quantities the whole strength of the compost may be retained.

REPORTS ON CROPS.

The May Report of the Bureau of Industries is based on returns made by six hundred and thirty correspondents on the 15th of May, and in the following summary the condition of grain, grass and fruits crops must be regarded as their condition at that date.

Winter wheat is in a much more satisfactory state than it was in May of last year. Yet it is not uniformly good, and there are some districts in which the outlook is gloomy. This is noticeably the case in the extreme ends of the Province--westward of the meridian of London, and eastward of the meridian of Kingston. For the large middle district the accounts are on the whole favourable, and the weather of the month has caused a marked improvement to take place everywhere. The following table gives by County groups the acreage in winter wheat, together with the acreage of cleared land, for the years 1884 and 1883 as collected by township assessors:

	1884..	Fall Wheat 1883..	1884..	Cleared Land 1883..
Lake Erie	219,489	245,931	1,223,462	1,233,646
Lake Huron	159,719	197,481	1,149,798	1,131,657
Georgian Bay	79,542	105,798	953,730	949,952
West Midland	270,356	343,532	2,162,346	2,165,978
Lake Ontario	159,191	212,554	2,218,200	2,193,317
St. Lawrence & Ottawa	22,439	37,422	2,113,031	2,061,455
East Midland	26,091	38,113	610,111	806,011
Northern Districts	99	534	94,107	65,772
Totals	937,559	1,181,425	10,760,645	10,587,688

The returns for a number of townships have not yet been received, but they will not affect the totals to any appreciable extent. The area under wheat is about twenty per cent. less than last year.

The general outlook for fruit bespeaks a high average crop of nearly all kinds, contrasting agreeably with the failure of last season. All orchard trees survived the winter without serious injury from frost, excepting the peach trees, so many of which have been destroyed as to leave hopes of only a very small crop. Apple and pear trees are everywhere healthy and laden with blossoms, and are likely to bear enormously. The prospect for small fruit of all kinds is equally bright.

The seasons having opened early, a much larger area than usual of spring crops was sown in the month of April; and owing to the absence of heavy rains farmers were enabled to get the land into excellent condition. Oats, barley and spring wheat have made a fine start, and give promise of a good harvest. The area of spring wheat will be larger than last year in the western counties, and will, to a considerable extent, make good the reduced area under fall wheat.

Owing in part to a drop in prices, but chiefly to the failure of the root and corn crops, a fewer number of cattle were tied up for stall-feeding than in the previous year. The demand this spring, however, has been active, and purchases have been largely made for the British markets. The supply of store cattle is above an average, and having come through the winter in good condition, they will be finished on the grass by July or August.

The quantity of wheat in farmers' hands is limited to the requirements of home consumption, and the stock in granary and warehouse has not been so low in the Pro-

vince as it is at the present time since the year following the bad harvest of 1876. A large surplus of hay will be held over for next winter's feeding; but as an unusually large quantity of oats was sold to grain-dealers or was fed as chopped stuff during the winter, the supply of this grain will not be more than sufficient for local wants.

There appears to be a more abundant supply of farm hands now than there was last year, and the average rate or wages is lower. Several correspondents mention the influx of Old Country labourers as affording a much needed relief to the farming population. The scarcity of female help is being severely felt in different parts of the Province.

EFFECTS OF RECENT FROSTS.

The effects of last week's frost on field, orchard and garden crops are much less serious than was feared. Barley has been injured on low land, and in some localities the clover has been nipped; but the cloudy weather of the week favoured a good recovery. In nearly all the best fruit-growing districts of the Province no permanent injury has been done, and the prospect continues encouraging for a fine crop. Tomatoes, strawberries and other garden crops have been partially destroyed in a few of the inland districts, but in the vicinity of the lakes these as well as all other fruits are safe. The chief exception to this general account refers to portions of Essex and the neighbourhood of Chatham, in Kent, where great damage was done by the frost on the 28th May.

In reply to special enquiry by the Bureau, the following reports have been received by telegraph to-day from correspondents in all parts of the Province:

John Dickie, Colchester, Essex: Up to Friday morning the spring crops in this township never looked better, and the show of apple and pear blossoms was magnificent. The trees were so literally covered that one could not see a green thing. Small fruit also was very promising. On Friday morning, however, we had a pretty severe frost for this season of the year, and in some places there was ice an eighth of an inch thick. It has damaged very much the potatoes and corn and utterly ruined beans and tomatoes. Many farmers are busy replanting corn. The peach trees have been badly scorched and many of them will lose every leaf. Currants, where the fruit had not been completely formed, are considerably injured. The weather has been very favourable for the fall wheat, and it is now coming into full ear.

W. Mackenzie Ross, Chatham: Barley and oats were badly damaged on the night of the 28th. ult. Peas and other grain are more or less destroyed, but clover does not seem to have suffered. Vegetables are a total loss, except onions and parsnips. Tomatoes and cabbage are burnt to the ground. Strawberries, gooseberries, and I fear currants are a total loss. Cherries and plums, of which there was a splendid show, are a total loss. Grapes also appear to be dead. The plums and cherries were as large as peas, but are as black as ink. My own 2,000 pear trees were loaded with fruit, but they shared the same fate of others, the fruit is rotten. Apples suffered, though not to the same extent. It was the heaviest frost, except one, during

my thirty years in Kent. It was a disastrous night.

John A. Campbell, Simcoe, Norfolk: Spring grain has been injured in some localities. Strawberries are almost ruined, but apples, are probably safe.

E. A. Dickott, Ridgeway, Welland: Field crops, excepting corn and clover, are uninjured. Fruit has not been damaged to any apparent extent. The early vegetables suffered most.

Peter Adamson, Goderich: Little or no damage has been done to grain, fruit or clover crops within eight miles of the lake.

Jacob Segmiller, Walkerton, Bruce: Small fruit has been severely injured; large fruit, clover and grain but slightly, if at all.

William Roy, Owen Sound: The recent frosts have done little or no damage to the grain, fruit, vine or clover crops in this locality.

John Albery, Meaford, Grey: No damage from late frosts within a radius of twelve miles of Meaford.

Dr George M. Aylesworth, Collingwood: No damage within a radius of six miles. The frost was much more severe on the height of land.

James Ross, Barrie: The damage of recent frosts in the township of Oro has been very slight. Barley on low land is slightly damaged, but all other spring crops are looking well, clover included. Apple, cherry and pear trees are in full blossom, and no perceptible damage has been done.

William Saunders, London: Spring grain has been injured, but not severely. Fall wheat is not materially hurt by frost, but is badly cut by cutworms in some localities. Clover is scorched but not permanently injured. Apples and peas are considerably injured but enough have escaped to make a fair crop. Grapes are almost destroyed, but they will realize a quarter crop. Strawberries are partly destroyed, but enough have escaped to average a fair crop. Raspberries are not injured.

G. R. Pattullo, Woodstock: Grain and clover are very little injured. Small fruits and garden stuff have suffered considerably.

C. W. Young, Stratford: Wheat has not been injured to any extent, but is hurt in low spots. More than half of the strawberry crop is ruined. Grapes are almost totally killed; apples, pears and small fruit not so bad; potatoes, corn and tender vegetables are killed off where exposed.

William Whitelaw, Guelph: Little or no damage has been done to grain, clover or fruit in this locality by recent frosts; a slight damage to garden vegetables.

Robert N. Ball, Niagara: No damage to crops or fruit in the township of Niagara.

D. W. Beadle, St. Catharines: No reported damage done between the Mountain and the Lake by recent frosts. The most important district was not touched.

A. H. Pettit, Grimsby: No injury worth mentioning has been done by frost here. A few tender varieties of grapes and potatoes are slightly damaged.

Wm. McCraney, M.P., Oakville: So far as ascertained, the damage here by the late frosts is very slight, being only in exceptional cases where grapes and other fruits were sheltered from the wind; but the damage is of little importance.

M. Clements, Milton: Grain, clover and apples were not injured by recent frosts. Tender fruits and vegetables are partially injured.

E. Jackson, Newmarket: From a general enquiry over a large area of this part of the country, it is conceded that very little injury resulted from frosts last week to grain crops; some loss to small fruits and garden stuff.

C. D. Barr, Lindsay: The frosts last week were unusually severe in this locality, ice forming to the thickness of one-quarter of an inch. Owing to the season being somewhat backward, wheat and barley throughout the country are not reported as damaged to any extent. Clover has been badly hurt, and is cut down in all directions. Plums, strawberries, grapes and early fruits are almost totally destroyed. The damage to apple trees is not reported as serious.

H. Hough, Coburg: Considerable damage was done to barley in this section, which, especially on wet land and where not so forward, is spotted and blighted. The crop will probably be short in consequence. Not much damage has been done to other grains. The frost was not so severe in the vicinity of Lake Ontario as in the back country.

P. C. Dempsey, Trenton, Hastings: The frost has done no serious damage here.

Thomas Briggs, Kingston: It is yet impossible to give correctly the damage done, but I think it will not be so bad as was at first supposed. The apple blossoms do not at present show much injury; small fruits are not injured and little or no injury has been done to grain.

J. M. Walker, Perth, Lanark: The damage done by the heavy frosts of last week is not yet quite apparent, but there is no doubt that clover, timothy and early vegetables are more or less injured. On the whole, the injury is not so great as might have been anticipated from a quarter of an inch of frost at this time of the year. Some farmers maintain that no loss will follow.

P. E. Bucke, Ottawa: Not much damage has been done to clover or grain. Apples and plums are apparently uninjured. Grapevines and potatoes are frozen, and tomatoes, beans and corn are killed.

To remove glass stoppers, invert the bottle in a vessel of water so that the shoulder is covered, but not so far as the label. Left all night, or perhaps longer, the stopper will yield.

STEEL knives which are not in daily use may be kept from rusting if they are dipped in a strong solution of soda—one part of water to four of soda; then wipe dry, roll in flannel, and keep in a dry place.

SOFT-COAL ashes are used to prevent the ravages of the currant worm. They are scattered thickly around the currant and gooseberry bushes, care being taken to keep the bushes well supplied with them as long as in danger.

OILCLOTH may be kept bright when almost worn out, if, after washing it, you take a flannel cloth and dip a corner of it in kerosene and rub the oilcloth with it. Of course a very little oil goes a great way, and care must be taken not to use too much.

A TRAGIC EVENT.

A FATHER'S DESPAIR AND SELF-INFLICTED PAIN. HIS SON'S FINAL RESCUE, TOO LATE TO SAVE HIS PARENT.

The graphic occurrence that is described below is one of the most remarkable episodes in the domestic history of America. It is absolute truth which can readily be verified.

The inhabitants of the pleasant town of Cortland, N. Y., were shocked one morning by the announcement that Mr. Clinton Rindge, one of their most prominent citizens, had committed suicide. The news spread rapidly and aroused the entire neighbourhood where Mr. Rindge was so well and favourably known. At first it seemed impossible that any one so quiet and domestic could do so rash a deed, and the inquiry was heard on every side as to the cause. The facts as developed on investigation proved to be as follows:

Mr. Rindge was domestic in his tastes and took the greatest enjoyment in the society of his children and pride in their development. And indeed he had good reason to be proud for they gave promise of long lives of success and usefulness. But an evil day came. His youngest son, William, began to show signs of an early decay. He felt unusually tired each day, and would sometimes sleep the entire afternoon if permitted to do so. His head pained him, not acutely, but with a dull, heavy feeling. There was a sinking sensation at the pit of his stomach. He lost all relish for food and much of his interest for things about him. He tried manfully to overcome these feelings, but they seemed stronger than his will. He began to lose flesh rapidly. The father became alarmed and consulted physicians as to the cause of his son's illness, but they were unable to explain. Finally severe sores broke out on his arms and he was taken to Buffalo where a painful operation was performed resulting in the loss or much blood but affording little relief. The young man returned home and a council of physicians was called. After an exhaustive examination they declared there was no hope of final recovery and that he must die within a very few days. To describe the agony which this announcement caused the father would be impossible. His mind failed to grasp its full meaning at first; then finally seemed to comprehend it, but the load was too great. In an agony of frenzy he seized a knife and took his own life, preferring death rather than to survive his idolized son. At that time William Rindge was too weak to know what was transpiring. His face had turned black, his breath ceased entirely at times, and his friends waited for his death believing that the fiend Bright's disease of the kidneys, from which he was suffering, could not be removed. In this supreme moment William's sister came forward and declared that she would make a final attempt to save her brother. The doctors interposed, assuring her that it was useless and that she would only hasten the end by the means she proposed to employ. But she was firm, and putting all back, approached her brother's side and administered a remedy which she fortunately had on hand. Within an hour he seemed more easy, and before the day was over he showed signs of decided improvement. These favourable signs continued, and to-day William B. Rindge is well, having been virtually raised from the dead through the marvellous power of Warner's Safe Cure, as can be readily verified by any citizen of Cortland.

Any one who reflects upon the facts above described must have a feeling of sadness. The father dead by his own hand, supposing his son's recovery to be impossible, the son restored to health to mourn the loss of his

father and the agonized relatives with a memory of sadness to forever darken their lives. Had Clinton Rindge known that his son could recover he would to-day be alive and happy, but the facts which turned his brain and caused him to commit suicide were such as any one would accept as true.

However sad this case may be, the truth remains that thousands of people are at this moment in as great actual peril as William Rindge and in as great danger of causing misery if not death to their friends. Liver and kidney diseases are become the most common and most dangerous of any or all modern complaints. They are the most deceptive in their beginnings and horrible in their final stages. They are far more deceptive than Consumption, and can rarely be detected even by skilful physicians unless a microscopic analysis be resorted to, and few doctors understand how to do this. Their slightest approach, or possibility of approach, should strike terror to the one who is threatened as well as to all his or her friends. These diseases have no distinct symptoms, but come in the form of lassitude, loss of appetite, aching muscles and joints, dull headaches, pain in the back, stomach and chest, sour stomach, recurring signs of cold, irregular pulsations of the heart, and frequent dizziness. If neglected, these symptoms are certain to run into chronic kidney and liver or Bright's disease, from which there is sure to be a great amount of agony and only one means of escape which is by the use of Warner's Safe Cure. The importance of taking this great remedy upon the slightest appearance of any of the above symptoms cannot be too strongly impressed upon the minds of all readers who desire to escape death and pain and prolong life with all its pleasures and blessings.

CREAM

HENS may be a little backward on eggs, but they never fail to come to the scratch where flower beds are concerned.

THE greatest oleomargarine fraud yet perpetrated is labelling the buckets with a ferocious billy goat to indicate genuine butter.

"Ah! Pat, I understand you were bitten by a dog yesterday. Do you know if he was mad?" "Mad, is it? Faith, what roight had he to be mad? Shure 'twas mesilf that was mad intoirely."

A GERMAN at a hotel in this city, had some Limburger cheese sent to him. A little boy who sat beside him turned to his mother and exclaimed. "Mamma, I wish I was deaf and dumb in my nose!"

HIS customers were glad when the marketman said he should not raise his prices on strawberries this year. But, alas! he kept the word of promise to their ears and broke it to their hope. He didn't raise his prices, but he raised the bottoms of his boxes.

"Yes, Charley is a good enough sort of fellow," remarked Tom; "but then he is so confoundedly absent-minded! He borrowed five dollars of me the other day, and when he called at my place to return the money, blowed if he didn't forget what he came for, and actually borrowed another five."

THE judge got home rather late the other evening and found a young fellow sitting on the sofa with the "sole daughter of his house and heart." "Well, sir," said the judicial gentleman, "what are you doing here?" "I have come into court, your honour, for the defendant," was the ready reply.

BEES AND POULTRY.

THE QUEEN

Is the mother of the whole hive; she resembles the drone, but has a sting, though seldom using it, except in fighting a rival queen. She is a darker colour on the upper parts than the other bees, and the two hind legs and underside are a bright copper colour. Some have a yellow stripe nearly around the body at the joints, and all the colours are bright and shining, with little of the downy hair of the others.

The colour of queens varies very much; some are much darker, the Italians especially, some of them being darker than the Black (or common queens), though their general colour is a rich gold.

For a few days after hatching, the queen is much smaller than after laying commences, which depends on the colony's strength and the honey supply in store, but generally begins in earnest with warm weather. The first eggs are laid in the warmest part of the hive, in the middle of the bee cluster, a small space being first taken up, and the opposite side of the same comb being next occupied. These spaces are then enlarged about equally on all sides, until the comb is filled, but before the outer rows are reached the centre cells are hatched out, and these the queen again uses. This work goes on slow or fast according to the honey supply coming in, the colony's strength and their power to care for the brood. In laying, the queen enters a cell head first (and the cell must be empty), then backs out, curves her body, and lays the egg, which is fastened to the bottom by one end. The egg is one-sixteenth of an inch long, a little curved, small, even size, round ends, clear, with a thin skin, easily broken. In three days a small white worm (the future bee) is seen floating in a milky matter, its food, which is said to be made from pollen, and which the workers are thought to feed to the brood every few minutes. About six days after hatching, this worm is wax-sealed over, and is hidden for about twelve days, when it bites its way out of the top, a perfect bee, leaving a thin cocoon of silk, spun by the larva. The larva is the bee's name just after hatching, then pupa, nymph, chrysalis, and bee are its titles.

The capping, or sealing, or covering of brood cells is darker and slightly sunken below the honey cells; that of the drones and queens are more convex than the workers, and the queen's is a little thicker. When some of the young queens are sealed over, the old queen leaves the hive with the bulk of the workers (swarms), leaving the balance to carry on the first hive. When the first young queen hatches (which is seven or eight days after the swarm left, usually), she at once bites the other queen cells and stings the inmates to death, but the bees prevent this action, if they expect to swarm again. Three or four days after hatching, if the weather be fine, the queen flies to meet the drone (male) for connection, and the marks of it are often quite plain on her. She begins to lay three or four days after, and through the season generally, and these are the only occasions on which the queen leaves the hive unless forced out. When the yield of honey is so small that the safety of the swarm is a question, then all the young queens

in stages of hatching are killed, and after them the drones.

Virgin queens only produce drones, but all fertilized eggs yield workers or queens, and the curious thing is that impregnated queens produce drones of their own blood or breed, the male not affecting them. Thus a black queen mated with an Italian drone, produces cross-bred workers and queens, but the drones are pure blacks, and the same way with any other two varieties crossed. The reason of this is supposed to be this, the male fluid is received by the queen in a small sack, past which the eggs go in the laying process, and are impregnated by it. A slight pressure being needed to do this, the worker cells (being small) give the queen's body the needed amount, but the larger drone cells do not, and the eggs are therefore not fertilized. In queen cells (which are also larger) eggs are laid before the cell is finished, when the queen is able to curve her body and make the required pressure for fertilization.

It is probable that workers or queens are never hatched from drone or queen cells (finished), because then the pressure is not available, and that eggs are never laid in queen cells after these cells are finished.

People keeping Black Bees can Italianize them by buying an Italian queen, from \$1 upwards and introducing her in the hive, when in about twenty-one days her breed appears in the young bees, and the Blacks will all disappear in one summer if the queen is put in in the spring.

There is another fact about bee breeding yet unsettled, that is, the queen cannot be impregnated by the drone if not allowed free flight, at least there is no certainty she can be, though many have been, and are, steadily experimenting, and feel confident of future perfect success, and have reported several successful attempts.

BRAHMAS.

These are among the most popular fowls, owing to their great merits, and from the first having grown in favour. There are two varieties, Light and Dark, (or Pencilled) and though of about the same merits, they should never be crossed, as the result is never good. It is not certain if they are a distinct breed, or resulted from a cross with the Cochins, but the best breeders think them a separate breed, and bring good proof. Their great size, feathered legs, general appearance, colour of eggs, and form of skull, are like the Cochin, but their peculiar comb, their colour, breast-bone, disposition, and habits, are very different. Their comb is like three combs set together, the centre one about half an inch high, and the other two about a quarter inch each. Single combs are allowable, but now very rarely seen, and can hardly take a prize over a "pea" comb.

Light Brahmas are white in colour of plumage, and the under-colour of the feathers is often a bluish-grey when they are parted. The neck hackles should be plainly striped with black down the centre of each feather, but the cock's is often lighter than the hen's. The back quite white in both, and tail black in both sexes, but in the cock well developed, and the covers showing beautiful green tints in the light. It should stand fairly upright.

and open fan-like, well out. The legs yellow, well feathered on the outer side to the toe, with white feathers. Ear-lobes pure red, well rounded and low-hung. Wattles full, neck rather short and well curved, hackle very full and swelling well over back and sides of the breast. Beak strong, well curved and bone-colour. Back very short, wide and flat, rather rising into a soft, small tail, which is carried rather upright, and the longer the saddle-feathers are, the better. The breast should be carried well forward, full and broad. The wings small, and well tucked up under the saddle-feathers and fluff. The lower part of the thighs should have plenty of soft feathers rounding to, and hiding the joint. The cock should carry himself upright and sprightly, should have great width and depth, and show his size well.

The hen's form and colour should be the same as the cock's, but of course smaller; her legs are not as yellow, and her tail not carried as upright. Irregular or crooked combs, vulture hocks, and long necks (or legs) are great defects. The wing should be white when folded, though the flight feathers are black, but sometimes young birds much chased droop the wings and expose the black.

Brahmas are readily told by their combs, which show the very peculiar form even in chicks just chipped out of the shells. The shape and carriage of the Dark, or Pencilled, variety are the same, but the colour-markings are different. The hackles and head-feathers are white striped black, but the back is not quite so dark, and the saddle-feathers must be black striped. The rise of the tail, and the latter's side-feathers are pure, lustrous, green-black (a few next the saddle may be ticked with white slightly), the tail-feathers pure black. The breast either black, or black with each feather slightly and evenly tipped with white, but not splashed. A good, well-defined black bar, across the wings is an important point. The fluff on thighs and hinder parts to be black, or very dark grey.

The hen differs somewhat in colour, but her shape is the same as the cock's. The feathers about her head are greyish, running to white, and the neck-hackle more striped with black. The rest of the body (except the black tail) is of a dingy white, much and closely pencilled with dark steel grey.

The throat pencilling is an important judging point in the show-pen.

Brahmas are very large, the cocks weighing as high as eighteen pounds, and thirteen to fifteen pounds is not uncommon; and hens eight to twelve pounds. Cockerels, six months old, will weigh from eight to ten pounds, and pullets from six to eight.

They are winter layers, and if well fed and warmly housed, lay nearly every day, even in mid-winter, and if *pure bred*, seldom become broody before laying thirty to sixty eggs or more, and often lay all winter. They are very hardy, grow very fast, and are ready early for the table. They are quiet, cannot fly three feet high, bear confinement in small places well, and are seldom hurt by over-feeding. After about six months the flesh is thought to be inferior to some others, but a cross, say with the Dorking, gives the finest table birds it is thought by good judges.

The eggs are a rich, dark brown colour, and

the shade lightens in proportion to the amount of other cross-blood in the fowl. They are heavy and rich, and well flavoured, with plenty of meat.

The hens are splendid setters and mothers; will cover from ten large eggs to fifteen small, and care for twenty or forty chicks. The chicks come hardy and true to colour, and the growing birds become very tame.

The Light Brahma is perhaps the best known to the general public of the two varieties.

WHAT IS THE COST OF HONEY?

A correspondent of *Gleanings in Bee Culture* writes: "P. H. Elwood, who is a large honey producer, once said to me that any man who could successfully manage an apiary of 100 colonies of bees, spring count, would command a salary of \$1,000 in any business he might see fit to engage in. This statement I believe to be near the truth, after a careful comparison of men and salaries obtained by different persons during the past few years, but in order not to be considered extravagant I shall reduce it one-half, and allow \$500 as the necessary amount to pay a man competent to successfully manage an apiary of 100 colonies of bees. Then we have a capital of \$600 invested in bees, calling each colony worth \$6, which would give \$36 in interest to be added to the \$500, calling the interest at 6 per cent. and \$4 as taxes, where our bees are assessed at \$5 per colony, as mine are. Then we have \$200 invested in hives and fixtures, which, in order to keep good and renew them when necessary, will require double interest at least; or 12 per cent., which gives \$24 more. Then we must buy or make 5,000 sections, equal to \$25: 200 shipping cases and glass for the same, costing \$40, and fifty pounds thin foundation for sections, amounting to \$30, at 60 cents per pound. To this we must add cartage of our honey to the nearest city or railroad, costing me \$11, and the rent of a shop and grounds for our apiary, costing \$30 more, so that we have \$700 as the total cost of the working of our apiary of 100 colonies of bees. If we own the shop and land which is required for our apiary, the cost to us will be as great to pay the interest and taxes, keeping it in repair, etc., as the rent would be were we to hire the same. Because a man owns a thing does not make it cost him any the less, even if it does make him feel more independent. Many seem to suppose that when they own a thing the use of it does not cost them anything; but often a few years will prove that the use of it would have cost them less had they rented it. Thus we have \$700 as the actual cost of what honey our 100 colonies of bees may produce us. The next thing is to ascertain how much honey we can expect year after year from them.

As the honey-production of our country has been of great interest to me, I have carefully noted all convention reports, and also all reports given by practical and successful apiarists, and I find that the average yield of honey, year after year reported by this class of individuals in the United States is not far from fifty pounds of comb honey. Into this estimate I have not taken those who keep from three to five colonies of bees, and "gush over" with a report of from 200 to 300 pounds of

honey per colony, nor, on the other hand, those who have made an entire failure of keeping the same number of colonies. Such as these do not come under the head of successful apiarists, capable of caring for 100 colonies of bees. Thus we have 5,000 pounds of comb honey as the equivalent of our \$700, taking the years as they average throughout the United States. Now, by dividing the \$700 by the 5,000 pounds, we shall have the cost of one pound, which proves to be 14 cents, so that, if the comb honey of the United States, nets the producers less than 14 cents per pound, we are keeping bees at a loss, and if more, we are making our avocation profitable.

POULTRY RAISING ON SMALL ENCLOSURES.

Those who live in the suburbs of cities, or in villages, derive quite a large profit from poultry as compared with the expense; and not only is poultry raising profitable but a pleasure to many. As the occupation may be more interesting when the desire is to keep them for ornament on lawns, or for beauty of plumage, it will be more satisfactory to keep pure breeds of some kind. If the fences are high there is no prettier breed than the White or Brown Leghorns. They do not sit, and consequently the difficulty of "breaking" the fowls from the inclination of raising a brood is avoided. If a few chicks are desired, however, and the fences are not over four feet high, such breeds as the Brahmas or Cochins will be found useful.

It is best to keep only ten hens in a flock, and one cockerel. If there are two cockerels the result will be several battles for the mastery ending in the defeated cockerel being compelled always to keep at a respectable distance from the victor, and thereby making it somewhat disagreeable to the keeper, as extra work will be required to see that the inferior cockerel is fed and watered, as the stronger one will not allow him to partake of anything thrown down for the hens. In raising chicks, little coops should be used, with small runs, which may easily be removed to new locations when desired. If this is not done the adult fowls will consume that which may be placed for the little ones. A plentiful supply of water, with cleanliness, will keep off disease, and promote thrift and prosperity to the flock.

No one can easily estimate the number of fowls annually raised in cities, towns, and villages. The value is millions of dollars. It demonstrates, however, that the aged and the young, and even those in unfortunate circumstances, find a profit and pleasure in keeping poultry. A few hens soon fill the egg basket, and with the aid of the scraps from the table, and a small allowance of extra feed, keep up the supply until the period arrives in the fall for moulting. Where the space is limited, the chicks should be used in the family, or marketed, when young, but the earlier hatched pullets should be kept to fill vacancies among the hens.

ANIMALS when confined and supplied with fattening feed always increase largely in weight during the first few weeks, after which the rate of increase diminishes to a considerable extent.

HELPFUL HINTS.

WHEAT screenings are not economical. Whole wheat, though apparently more expensive, really contains greater nutriment than double its quantity of screenings. The only advantage possessed by screenings is that such material may be more easily fed to chicks when they are just hatched, and they also contain certain seeds of weeds which are acceptable.

ALL reliable breeders keep a book for recording notices. Therefore, if you contemplate purchasing eggs send a card to the breeder, requesting him to "book" your name. No money is required until you send the order for eggs. By booking your name he will be ready to send them whenever required, as he then knows that your order is expected and prepares for it.

It is a national blessing that "fancy farmers," as they are sometimes called, are pleased to make such large investments in pure-blood stock, for by this means the supply of any breed is kept up. It would be a calamity if from any cause these carefully managed herds should be all broken up and scattered. It is through them that the whole live stock of the country is to be improved, by a gradual process of grading.

WHEN the young Langhans are first hatched they have a large proportion of white on the body, which sometimes confuses those who are not familiar with them. A great many complaints are sent to breeders by purchasers of eggs, who wonder why *black* fowls should produce chicks partly white. Fortunately, however, as they grow, the white disappears, and after a time they assume their true and natural black colour.

WARMTH and concentrated food is the best of all remedies for a sick fowl, but if it has no appetite keep it warm and comfortable at all events. Should roup appear bathe the head with copperas water, and add some of it to the drinking water. Castor oil is the best thing for bowel complaints, especially when accompanied by sneezing or appearance of cold. Disease is promoted by damp quarters, cracks, surplus fat, filth, and insufficient food.

A BREED or family of animals may possess much merit, yet long remain little known to fame; and a breed or family of little merit may be "boomed" into notoriety and popularity by skilful advertising. A valuable breed or family may lose reputation and popularity for a time, because of temporary notoriety of a less worthy rival; but no breed can long remain popular with large numbers of practical men unless it possesses substantial merit. A breed may do admirably well in one country or under one set of conditions, yet fail elsewhere and under different conditions. While a skilful breeder and shrewd business man may make most reputation and greatest profits with a little-known breed yet it is certain that the average farmer and breeder will be safest in choosing a well-known, long-tried and widely-disseminated breed. No good breed with which a commencement has been made should be rejected for another unless there be clear evidence of superiority. The personal preference of the breeder as to size, colour, markings, etc. may safely be consulted, so long as more important points are not rejected.—*Breeder's Gazette*.

HOME CIRCLE.

THE WEDDING FEE.

How very dark and stormy it was on that March evening! The doors and windows kept up a perpetual rattle; violent gusts of wind and dashes of rain now and then beat against the house, as if bound to seek shelter therein.

Little Robby was sound asleep in his crib, and the minister and his wife were spending the evening together in the cosy sitting-room. The hour for retiring had come, and while Mrs. Watson was bustling about, picking up and adjusting the numberless concerns which nobody but a careful house-wife can ever see or think of, there came a violent ring of the bell.

"Mercy!" exclaimed Mrs. Watson, "somebody must be dying or dead. What a dreadful night for you to go out in!"

Mr. Watson opened the door and peered into the darkness. Not a human being could he see or hear. A few seconds passed, when a loud, gruff voice was heard, asking:

"Can you splice us to-night?"

For an instant the minister was confused, not being accustomed to the use of that nautical term in relation to the duties of his profession. A second thought, however, made clear to him the possibility that splicing might be within the limit of his particular province; and so raising his voice above the storm he replied:

"If you mean to ask me, sir, to marry you, I shall be happy to perform the ceremony. Is the lady with you?"

"Ha, ha! that's a good one! Sara Ann, you mean! Don't suppose I'd come to get the knot tied without her, do you? No sir; she's right here in the cart."

Mr. Watson need not have stepped back to inform his wife of the great event which was to take place, for she had heard all the conversation and was using her utmost endeavours to expel the laugh from her countenance before the happy pair appeared.

It must be confessed that the sight of the couple was not conducive to gravity. They had passed a good while since the bloom of youth, and made no special effort to conceal the fact. Both had evidently come directly from their work, which, indeed, the gentleman proceeded to intimate.

"Fact is, parson, 'tis rather a bad night outside; and I says to Sara, 'What's the use; let's not fix up a bit, but go just as we are. The knot 'll hold just as well as if we had on our best bib and tucker.' And besides, parson, we want to take the old folks by surprise, and they'd be sure to 'spect something if we'd gone to work and put on all the riggin's." Mrs. Watson was glad of this little opportunity to smile, and promptly improved it. What would she not have given for the privilege of a good, hearty laugh!

The brief ceremony concluded, Mr. and Mrs. Watson extended their congratulations.

"Thar," broke in the newly married man, "is the ticket; guess you'll find it O. K. Now, Sara, let's be goin'. Plaguey tough ride before us. Good bye, parson. Good bye, ma'am. Much obliged for the job. Hope to do as much for you sometime."

The "cart" rattled away, and Mrs. Watson,

into whose hands her husband had delivered the license, made haste to open it, thinking that, after all, it wasn't best to judge people by the outside, and that the strange man might have done something by way of a fee. There it was? A bill! Yes, and upon it the magnificent figure of one dollar!

"Well, I do declare," shouted Mrs. Watson, "isn't this too mean for anything? Shame on that man; he don't deserve to be married."

"Now, my dear," said the minister, "you should not be too hard, for I think you had at least a dollar's worth of enjoyment out of the occasion."

"Yes, sir; and I noticed somebody who seemed troubled to keep from laughter."

Next day little Robby's shoes were bought with the wedding fee, the minister's clothes were brushed and cleaned for the hundredth time, and the good lady, by dint of extraordinary management, made the old dress answer an excellent purpose.

The spring passed away, and the summer in all its beautiful bloom and abundant fruitfulness came on. The wedding on the stormy night had almost passed from the minds of the minister and his wife; albeit, now and then she would break out with a laugh, and asked her husband if he didn't think it was nearly time for him to splice another couple. One day, as the happy little family were eating their dinner, and just as the parents were feeling uncommonly proud to some smart thing little Robby had said, there came just such another ring of the bell as that heard on the stormy night.

"Well, there," said Mrs. Watson, "one would think for all the world that the splice man had come again."

Before the minister could reach the door it was opened, and astonishing to relate, there stood the identical hero of the wedding occasion.

"Arternoon, parson and ma'am; hain't forgot me, have ye? 'Member that job you did for me last spring? Never did anything better in that line, bet your life. Didn't know how it would turn out. Getting married is kinder risky, anyhow. But you won't find a happier pair this side o' Canaan, that's sure. And so I thought 'twas 'bout time I brought along the rest of the fee. Where'll you have these things, parson?"

The minister went to the door, and there was the "cart" literally loaded with fruit and vegetables. Such a store was never before brought to the house!

"Oh, don't trouble yourselves thanking about this," said the man. "Nothing but a fair trade, you know. But if you must thank anybody, thank Sara Ann. The garden sass is from her. She kinder thought 'twould relish this hot weather. Very hot and dry, parson, this season. Been 'specting the crops wouldn't mount to nothing, but they is gettin' on fust rate. The Lord generally brings things round 'bout right, I notice. Don't go much on the churches and plaguey little on some of its members, but you don't catch me going back on the Lord. Was tellin' Sara only last week that we must go over and hear you preach some pleasant Sunday. S'pose you give 'em the ra'al Bible religion don't you? That's what all say they do, anyhow."

The minister and his wife had but little opportunity to utter a word, their friend was so talkative; but they would insist upon expressing their warmest thanks to him and "Sara Ann" for the truly generous donation.

After the store had been deposited in the house, the man took the master by the hand, leaving in it a bill, saying:

"That's my part of the fee; thank Sara Ann for the sass." And then jumping into his waggon he drove away.

The minister unfolded the bill, and lo! its worth was twenty dollars! Mrs. Watson clapped her hands, and fairly shouted for joy. The needed dress and pants were bought, and to this day there is no story which the minister and his wife love so well to tell as that of "The Wedding Fee."

TEACHING ANIMALS TO CONVERSE.

Sir John Lubbock in a note to *Nature* says: "I take the opportunity of stating the progress which my dog 'Van' has made, although, owing greatly no doubt to my frequent absences from home, and the little time I can devote to him, this has not been so rapid as I doubt not would otherwise have been the case. Perhaps I may just repeat that the essence of my idea was to have various words, such as 'food,' 'bone,' 'water,' 'out,' etc., printed on pieces of card-board, and after some preliminary training, to give the dog anything for which he asked by bringing a card."

"I use pieces of card-board about ten inches long and three inches high, placing a number of them on the floor side by side, so that the dog has several cards to select from, each bearing a different word."

"One correspondent has suggested that it would be better to use variously coloured cards. This might no doubt render the first steps rather more easy, but, on the other hand, any temporary advantage gained would be at the expense of subsequent difficulty, since the pupil would very likely begin by associating the object with the colour rather than with the letters; he would, therefore, as is too often the case with our own children, have the unnecessary labour of unlearning some of his first lessons. At the same time the experiment would have an interest as a test of the condition of the colour sense in dogs. Another suggestion has been that, instead of words, pictorial representations should be placed on the cards. This, however, could only be done with material objects, such as 'food,' 'bone,' 'water,' etc., and would not be applicable to such words as 'out,' 'pet me,' etc.; nor even as regards the former class do I see that it would present any substantial advantage."

"Again, it has been suggested that 'Van' is led by scent rather than by sight. He has no doubt an excellent nose, but in this case he is certainly guided by the eye. The cards are all handled by us, and must emit very near the same odour. I do not, however, rely on this, but have in use a number of cards bearing the same word. When, for instance, he has brought a card with 'food' on it, we do not put down the same identical card, but another with the same word; when he has brought that, a third is put down, and so on. For a single meal, therefore, eight or ten cards will have been used, and it seems clear, there-

fore, that in selecting them 'Van' must be guided by the letters.

"When I last wrote I had satisfied myself that he had learnt to regard the bringing of a card as a request, and that he could distinguish a card with the word 'food' on it from a plain one, while I believed that he could distinguish between a card with 'food' on it and one with 'out' on it. I have no doubt that he can distinguish between different words. For instance, when he is hungry he will bring a 'food' card time after time until he has had enough, and then he lies down quietly for a nap. Again, when I am going for a walk and invite him to come, he gladly responds by picking up the 'out' card and running triumphantly with it before me to the front door. In the same way he knows the 'bone' card quite well. As regards water (which I spell phonetically so as not to confuse him unnecessarily), I keep a card always on the floor in my dressing-room, and whenever he is thirsty he goes off there, without any suggestion from me, and brings the card with perfect gravity. At the same time he is fond of a game, and if he is playful or excited will run about with any card. If through inadvertance he brings a card for something he does not want, when the corresponding object is shown him he seizes the card, takes it back again, and fetches the right one.

No one who has seen him look along a row of cards and select the right one can, I think, doubt that in bringing a card he feels that he is making a request, and that he can not only perfectly distinguish between one word and another, but also associate the word and the object.

"I do not say for a moment that 'Van' thus shows more intelligence than has been recorded in the case of other dogs, that is not my point; but it does seem to me that this method of instruction opens out a means by which dogs and other animals may be enabled to communicate with us more satisfactorily than hitherto."

"I am still continuing my observations, and am now considering the best mode of testing him in very simple arithmetic, but I wish I could induce others to co-operate, for I feel satisfied that the system would well repay more time and attention than I am myself able to give."

SPEED OF THOUGHT.

Many people have noticed the remarkable quickness of thought in dreaming, how a long story, with many details and extending over a great period of time, will flash through the mind in a few minutes, but they seldom have any means of even approximately measuring the quickness with which they sometimes dream. There is now going the rounds of the press a story purporting to tell the dream of a railway engineer, which, if true, affords a means of measurement, and the story itself has every appearance of being a genuine relation of experience. The engineer had been without sleep, and on duty for many hours, and at last fell asleep on his post. Then he dreamed quite an elaborate story of an accident resulting from a confusion of train orders; how he studied over the words of the dispatch, trying to make out their meaning, and then how his train coming into collision

with another, he was thrown into the air and dropped back into his seat in the cab with his hand on the throttle. At that instant consciousness returned, and he found that it was all a dream, and that although his train was travelling at the rate of forty-five miles an hour, it had gone only 250 feet while the dream was passing through his mind, this distance being fixed by the position of the train with respect to signal lights on the line. This is the interesting part of the story, for if these measurements are approximately correct, the dream occupied less than four seconds of time. —Ledger.

LOVE LIGHTENS LABOUR.

A good wife rose from her bed one morn,
And thought with a nervous dread,
Of the pile of clothes to be washed, and more
Than a dozen of mouths to be fed.
There's the meals to get for the men in the field,
And the children to fix away
To school, and milk to be skimmed and churned;
And all to be done this day.

It had rained in the night, and all the wood
Was wet as it could be;
There were puddings and pies to bake, besides
A loaf of cake for tea;
And the day was hot, and her aching head
Throbb'd wearily as she said:
"If maidens knew what good wives know,
They would be in no haste to wed."

"Jennie, what do you think I told Ben Brown?"
Called the farmer from the well;
And a flush crept up to his bronzed brow,
And his eyes half bashfully fell.
"It was this," said he, and coming near,
He kissed from her brow the frown;—
"Twas this," said he, "that you were the best,
And the dearest wife in town."

The farmer went back to the field, and the wife
In a smiling absent way
Sang snatches of tender little songs,
She'd not sung for many a day.
And the pain in her head was gone, and the clothes
Were as white as the foam of the sea;
Her bread was light and her butter was sweet,
And as golden as it could be.

"Just think," the children all called in a breath
Tom Wood has run off to sea:
He wouldn't, I know; if he only had
As happy a home as we,
The night came down and the good wife smiled
To herself as she softly said:
"'Tis so sweet to labour for those we love,
It's not strange that maids will wed!"

SOLIDIFIED WHISKEY.

If it should be found practicable to turn out whiskey in the form of plugs like tobacco, it will completely revolutionize the business. The *Pittsburg Times* gives a long account of the discovery, and of Mr. Peterman, the German, who is announced as the discoverer. Numerous capitalists and syndicates of capitalists have applied for the purchase of the secret, but Peterman is holding off for higher bids. He refuses to let any simple leave his possession, but freely submits his whiskey to the practical tests of experts. No chemicals are used in the preparation of the spirits, and in no way is the flavour of the brands affected. Brandy, port, and gin are all treated in the same way. Should it be brought into use it will do away with all barrels and loss by leakage, for the whiskey cake can be shipped all over the continent in boxes, in bales, in crates, or even only protected from dust and dirt by matting. It could be turned out in any sizes, from a lozenge to a block of a ton. Think of it! We can soon quote whiskey by the ton, bale, or cord, and like coal in all sizes—broken egg, or nut! But the discoverer does not stop at the mere solidification, for not only can he solidify whiskey, but he makes it into any form desired. He can make it as red as

currant jelly and of like consistency; or he can turn you out whiskey in color, form and odor like unto a cheese or a Westphalia ham. In short there is not an article of commerce which cannot be successfully duplicated in solidified whiskey, so as to deceive the very elect of internal revenue officers.

The result of this may be interesting. Some good old deacon may catch the jim-jams from a steady diet of what he believes to be potatoes, boneless codfish and potted ham, but which in reality are concentrated stagger juice. And the village belle, slowly compressing her sweet lips on as she supposes, the toothsome caramel, may be imbibing potations of sherry wine in such generous drachms that she will finally consult mamma in affright to discover if possible what causes the blood to course with hitherto unknown swiftness through her veins.

As for the bar-rooms, they will be quite abolished inside of two years. There will be no need for tumblers and decanters and fancy bars. Temperance will be marvellously increased by it, for man is a social animal—the only social animal, practically—but with all his sociability he does not treat his friends and associates to postage stamps, or bread, or beef, or any article of everyday use, save and except liquor, be that liquor spirituous or merely temperance lemonade or soda. But abolish the drink, that is turn the liquor into a solid, and society will drop its treating usages that instant. And with the discontinuance of treating a fatal blow will be struck at drunkenness, for mostly all confirmed drunkards will tell you that their appetite was acquired, not by moderate drinking at home, but by the convivial glass at the gilded and mirrored bars. It is in a word, the drinks between drinks, that do the dirty business for most of them. Once the necessity of taking stimulants in a liquid form is obviated, men who require whiskey or gin or brandy or wine will buy it at their grocers' in plug, or globule, or lozenge form, and use it as we do now our tobacco—they will use it but will not abuse it. At least that is what is claimed for the new discovery. Time will soon tell whether there is anything in it or not.—*Bobcaygeon Independent*.

HOME QUESTIONS.

Your tempers; how are they? Do you become impatient under trial; fretful, when chided or crossed; angry, revengeful when injured, vain, when flattered; proud, when prospered; complaining, when chastened; unbelieving, when seemingly forsaken; unkind, when neglected; are you subject to discontent, to ambition, to selfishness? Are you worldly? Covetous of riches, of vain pomp and parade, of indulgence, of honour or ease? Are you unfeeling, contemptuous of others, seeking your own, boasters, proud, lovers of your own selves? Beware! These are the sediments of the old nature. Nay, if they exist in you, in however small a degree, they are demonstrative that the old man of sin is not dead. It will be a sad mistake if you detect these evils within, and yet close your eyes to them and continue to make professions of holiness. These are not infirmities, they are indications of want of grace.—*Bishop Foster*.

THE LETTER IN THE CANDLE.

SONG AND CHORUS.

Words by J. CLARKE.

Music by R. COOTE.

1. There's a let - ter in the can - dle, It points di - rect to me; How the
 2. Hope and fear a - like per - plex me; Oh! su - per - sti - tious dread; How
 3. How glad - ly I re - mem - ber, 'Tis two short months, no more, Since a

lit - tle spark is shin - ing; From whom - ev - er can it be? It gets
 ma - ny i - dle fan - cies You con - jure in my head. When
 - let - ter in the can - dle Shone out as bright be - fore.

bright - er still and bright - er, Like a lit - tle sun - ny ray, And I
 those we love are ab - sent How wan - ton - ly you play; Ev - 'ry
 Then the dar - ling mes - sen - ger Came prompt and safe to me. If

cres.

dare to guess the writ - er; For it drives sus - pense a - way.
 sha - dow seems a substance, And drives sus - pense a - way.
 this is on - ly from the same, How wel - come it shall be.

p

Bright spark of hope, Shed your beams on me, And send a lov - ing

ALTO.

TENOR.

BASS.

mf

message from far across the sea. Bright spark of hope, Shed your beams on

message from far across the sea. Bright spark of hope, Shed your beams on

f

me, And speed the lov - ing mess - age From far a - cross the sea.

me, And speed the lov - ing mess - age From far a - cross the sea.

Detailed description: This is a musical score for a song. It features four vocal parts: Alto, Tenor, and Bass, along with a piano accompaniment. The music is in 2/4 time and the key signature has two sharps (F# and C#). The lyrics are: "Bright spark of hope, Shed your beams on me, And send a lov - ing message from far across the sea. Bright spark of hope, Shed your beams on me, And speed the lov - ing mess - age From far a - cross the sea." The piano accompaniment includes dynamic markings such as *mf* and *f*. The score is arranged in systems of staves, with vocal parts on top and piano accompaniment on the bottom.

YOUNG CANADA.

CLAUDE'S CAPTIVE.

"I've been setting a trap," said Claude, coming into supper with a very bright face.

"Where?" said Aunt Ruth.

"Down by the big elm, just over the creek. Janson helped me to make it, and I've put a forked stick in it, with a nice bit of apple on its end. I'm sure I'll catch a squirrel before morning."

"Why do you wish to do so, Claude?" said his aunt.

"O Aunt Ruth, a squirrel is such fun. And there in the attic is a cunning little cage, with a wheel on purpose for the fellow to run up and down. It is a shame to have that cage and nothing to put in it. I'll be real good to my squirrel, aunty. He shall have fresh water and plenty of nuts, and I'll make a perfect pet of him."

"But he will be a prisoner," said aunt.

"Oh, he'll soon get used to that," replied Claude, taking another slice of bread and butter.

Aunt Ruth said no more, but she secretly hoped that Claude would not succeed in catching his squirrel. For several days he said nothing about it, returning from his little trip to the elm tree with a disappointed look. One evening, however, he came flying with great leaps over the meadow, and as he drew near the house, he called out, gaily:

"Hello, Aunt Ruth! I've got him!"

"Let me beg then, Claude, that you will not shut him up, after the free life of the woods, in that cubby hole of a cage. Put him in the loft over the granary. That will be a splendid place for him."

But Claude shook his little head. He was proud of his captive and meant to be good to him, and every day he fed him plentifully, or tried to do so, though often the nuts were un-tasted. The sharp little teeth tore at the bars, and the bead-like eyes fairly snapped with the anxiety to be free.

"Let me out! let me out!" Mr. Squirrel kept saying with all his might.

Aunt Ruth would stop and take a pitying peep at him now and then saying:

"Yes, you poor creature, I would, in a minute, if you were not my nephew's property, and perhaps I'll do it anyway."

She set her wits to work to see if she could not give Claude a lesson, and one day, not a great while after, the little boy, who had gone to one of the upper rooms of the house on an errand, found himself, to his surprise, locked in. Somebody turned the key on the outside. He knocked, called and listened, but no one came, not a step did he hear. He glanced from the window. Aunt Ruth, her little velvet bag on her arm, was tranquilly walking down the road to a neighbour's. A party of boys were going nutting. He heard their merry shouts, but could not make them attend his calls. Once Bob Farley did look around, but presently went on, as though he had been mistaken in his supposition.

"If this isn't a mean shame!" said Claude.

He looked around as he spoke. He was in one of the prettiest chambers in the house, and as he began to notice things more particularly, he discovered that a basket of fine mel-low pears and a plate of cookies were standing

on the table. There was a china pitcher filled with cool water from the well. At another time Claude, would have eaten the fruit and enjoyed it, but he now felt so angry that he scorned to touch it.

"I wouldn't believe that Aunt Ruth would play such a trick on me," he said, as he sat sullenly down beside the window.

Presently Tim, the hired man, crossed the yard below, and stopped a minute to speak to Sally in the kitchen.

"That 'ere poor squirrel of Claude's is just a-grievin' hisself to death," were the words that reached to the boy's ear.

"Tim, Tim!" cried Claude, leaning far out over the sill. "Send Sally up here, won't you, please?"

Sally's slow, heavy steps came up-stairs. He could hear her panting with the exertion. When she reached the third landing Claude said very pleadingly:

"Unlock the door, Sally; there's a dear, good woman."

She needed no urging, and, after an hour's confinement, Claude was at liberty. He rushed down to the barn, set wide open the door to Bunny's prison, and let that little victim go back to the woods and groves.

That night his Aunt Ruth told him a story of a great painter, named Leonardo da Vinci, who used to buy cages and cages of birds in the markets, just for the pleasure of setting them free. And Claude's eyes sparkled. He said: "Aunt Ruth, that's just what I mean to do when I grow up."

THE QUEER SCHOLARS.

The sun was shining softly,
The day was calm and cool,
When forty-five frog scholars met
Down by a shady pool—
For little frogs, like little folk,
Are always sent to school

The master, perched upon a stone,
Besought them to be quick
In answering his questions,
Or else (his voice was thick)
They knew well what would happen—
He pointed to his stick!

Their lessons seemed the strangest things—
They learnt that grapes were sour;
They said that four-and-twenty days
Exactly made an hour;
That bricks were made of houses,
And corn was made of flour.

Then six times one was ninety-five,
And "yes" meant "no" or "nay"
They always spent "to-morrow"
Before they had "to-day";
Whilst each commenced the alphabet
At "Z" instead of "A!"

As soon as school was over,
The master said, "No noise!
Now go and play at leap-frog"
(The game a frog enjoys),
"And mind that you behave yourselves,
And don't throw stones at boys!"

—Little Folks, for March.

COMIC CHIMPANZEES.

The keeper of the chimpanzees at the Zoological Garden placed a doll baby in their cage the other day. It was clothed in a red dress that attracted the attention of the animals in a moment. At first the animals stood at a respectful distance and hoo-hooed at it to show that they had not fallen in love with it at first sight. Then they began to stamp on the floor to scare it away. Finding this unavailing, the big one dashed up within a foot of the passive baby, stamping and chattering; but, finding that the strange thing did not budge, she turned tail and fled. The little one

was not to be outdone, although she was evidently greatly in fear of it, so she held her blanket up in front of her while she approached; but she did not go far. After a while the big one was brave enough to go quite near, so that with a straw she could tickle the new comer under the chin. The doll never stirred. The end of the straw was examined and smelt of by two animals; and, nothing harmful being found, they ventured to touch it. They then scampered to the top of the cage. After a while, curiosity got the better of fear, and they returned to the inspection, which was mostly confined to sitting in front of it and making faces at it. The keeper tied the figure to a swinging rope. The one dragged it by the hem of its garment to the box in which they sleep. They placed it inside, and at once executed a war-dance on the top. The little one stopped her noisy sister with a vicious cuff and drew out the unfortunate. Then, sitting on the floor, she held it in her arms as if it had been a real baby of her own. After making evident fun of this soft-heartedness, the other pulled the doll away and deliberately sat on its head, striking the body with the palm of her hands. While the other was endeavouring to regain the plaything, the dress did not long remain intact. After this they hauled the body about the cage, up the tree and on the cross-beam, and then threw it to the ground. One piece of the dress they used for a necktie, and another was turned into a head-dress, with which one of them adorned herself before the mirror in the corner of the cage.

WHAT WILL BURST A GUN.

In bravado a young man placed the muzzle of his fowling-piece under the water and fired the charge. The result was the bursting of the barrel near the breech and the mutilation of his hand. Another placed and held the muzzle of his piece square against a piece of plate window glass, and fired the charge—powder and a bullet. The glass was shattered, so was the gun barrel. Another instance was that of an experimenter who had heard that a candle could be fired from the barrel of a gun through an inch board. He drove a candle into the muzzle of the gun, fired, and the explosion split the barrel almost its entire length, and did not even drive the candle from the muzzle. Still another burst of a gun barrel was caused by the use of wet grass for a wad, well rammed down over a charge of shot. But perhaps one of the most singular exhibitions in this line was a Colt's navy revolver, which some years ago was sent to the factory in Hartford, Conn. This was before the adaptation of these pistols to metallic cartridges, and it is probable that in loading with open powder and ball only a small amount of powder got into the chamber, and the bullet was not propelled with sufficient force to drive it from the muzzle; at least the bullet did not go out, but lodged. As the shooter did not know whether the bullet escaped or not, he kept on firing till the barrel burst or bulged, and when it was sawed in two, longitudinally, there were found fourteen bullets wedged one into the other, and so much "upset" by the hammering of the successive explosions of the powder charges that some of them were not less than one inch in diameter, being flattened disks instead of conical bullets.

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146 Way Thro' the Wood Dolby 60
147 Weary Gabriel 30
148 We'd Better Bide a Wee Claribel 35
150 What Jack Will Say Piusati 60
624 What Need Have I the Truth to Tell Claribel 35
153 When the Heart is Young Dyon 35
625 When the Dew Begins to Fall (Waltz song) Turner 75
154 When the Swallows Homeward Fly Abt 30
453 When the Leaves are Turning Brown Crampton 40
155 When Red Leaves Fall Hatton 30
156 When the Swallows Come Piusati 30
157 Will Ho Come Sullivan 60
158 Yes, Sir Wakefield 35
160 You and I Claribel 30

200 Don't Blame Me, for I Didn't do it Duncan 40
773 For Goodness Sake don't Say I Told You Lloyd 30
765 I'm a Member of the Club Martyn 40
201 I have Come Home for Dinner, Kate Lyon 30
202 I'll Get Bid of My Mother-in-Law Duncan 30
203 I Won Her Little Heart when Dancing Musgrave 30
204 Jeremiah, Blow the Fire Tony Pastor 85
206 Lady Dahl Birbeck 25
207 Maid and Magpie Phillips 40
208 My Love Nance Bobby Newcomb 40
209 Naughty Clara Knowles 40
636 O You Little Darling Vanoni 35
210 Too Late to Marry Pratten 20
211 Torpedo and the Whale Audran 40

Sacred Solos, Duets, Trios and Quartettes.

501 Abide With Me Old Popular Melody 20
515 Ashamed of Jesus Field 40
216 Ave Maria Gounod 35
503 Arm, Arm, Ye Brave Handel 35
500 And the City Hath No Need of the Sun Whittington 35
504 Ave Sanctissima Old Song 20
600 But the Lord is Mindful of His Own Mendelssohn 30
505 Christmas Hymn Holloway 20
217 Cleansing Fires Virginia Gabriel 40
218 Father of Mercies Barringer 25
219 Forsake Me Not Glover 30
610 He Giveth His Beloved Sleep Abt 30
506 In Heaven, O Jehovah, is Fixed Thy Throne, Christians' Prayer Spohr 60
507 I Sought the Lord and He Heard Me Costa 60
508 I Think of Thee Redhead 20
509 Star of the East (Duett) Scotch 20
504 'Tis Nightfall on the Sea 20
509 Jerusalem the Golden Old Popular Tune 20
510 The Lord is My Shepherd (Quartette) Martin 35
220 Let Music Break on This Good Morn—Christmas Carol 26
221 Lord be with Me in My Walk Schroeder 30
222 Nearer, My God, to Thee Barton 50
511 O Clothe our Valleys with Ripening Corn Spohr 40
513 O Let Those Whose Sorrow Wilson 20
505 Pilgrims of the Night Holloway 20
225 The Palms (Les Romeaux) Faure 40
223 Rest in Jesus Hymn 20
224 Saviour, Breathe an Evening Blessing Spencer 25
508 Star of the East Scotch 20
226 To Jesus our Exalted God Braun 30
227 When I View the Mother Holding Sacred 35

Duets.

493 All's Well Braham 30
640 Come When the Soft Twilight Falls Schumann 35
231 Dost Thou Love Me, Sister Ruth? Parry 20
231 Emblem of Constancy (duett) Turney 30
233 Ever, Ever Thine (duett) Braun 60
233 Gobble Duett (from Mascotte) Audran 40
493 Has Sorrow Thy Young Days Shade Tom Moore 15
234 Hunting Tower (duett) Demar 40
230 I Would That My Love (duett) Mendelssohn 35
237 In the Starlight (duett) Glover 40
494 Larboard Watch Williams 40
495 Over the Mountain Holloway 10
238 Wandering in the May-Time Glover 60
511 What A! the Wild Waves Saying Glover 60
239 When I Behold Thee (duett from Mascotte) Audran 40
240 When Ye Gave Awa, Janie (duett) Demar 40

Quartettes and Choruses.

223 Bridal Chorus (from Lohengrin) Wagner 25
223 Coast is Clear (quartette) Moserbeer 60
497 Farewell German Volkslied 10
223 Hymn of Columbia (National Hymn) Dugworth 20
493 Silent Night (4-part song) Barnby 20
636 Sleep my Child (Male Voices) Helms 20

Songs with Choruses.

SENTIMENTAL, NEGRO AND MINSTREL SONGS.

163 Angels, Hear the Little Prayer Wyatt 40
163 Baby's Empty Cradle Skelly 40
626 Beautiful Ellen, the Maid of the Lea Gleason 40
165 Carry Me Back to Old Virginia Negro 30
166 Columbia's Noble Men Tarney 25
167 Darling, Has Your Love Grown Cold Plummer 35
627 Dear Friends of I long Ago Scott 35
168 Down by the Old Mill Stream Read 35
628 Eileen's Message Turnbull 35
458 Father is Dead and Mother is Poor Holloway 20
169 Grandmother's Chair Read 35
171 I'll See That Your Grave is Kept Green Clayton 35
629 I've Just Been Down to the Gate Wilson 40
173 Lass That Lives Next Door Tucker 40
175 Little Snow White Hands Gabriel 35
176 Lullaby Emmet 40
177 My Grandmother's Watch Conway 35
178 One Sweet Kiss before We Part Turney 35
179 Only a Word, Love Turney 35
180 Over the Garden Wall Fox 35
181 Passed Within the Gates Ajar Peck 40
630 Peep Boo Wilson 40
182 Poor Orphan Boy Duncan 40
492 Pretty as a Butterfly (Song and Dance) Bobby Newcomb 40
184 Scentless Rose (A) Conway 35
185 Scenes of My Youth Turney 35
187 Send Me an Answer from over the Sea Pratt 40
188 Somebody's Grandpapa Wood 40
632 Shady Tree, Babbling Brook Wilder 35
188 Sunbeam in the Storm Conway 35
189 Sunny Long Ago Danks 35
190 Sweet Girl May I be There Turney 35
491 Sweet on de Golden Gate Lyons 40
634 Sweet Birdie Murphy 40
191 They Say I am Nobody's Darling Tucker 40
233 This Wedding Ring of Mine Bobby Newcomb 40
193 Visions of the Past Russell 35
194 When First I Saw My Darling's Face Danks 35
492 When the Clouds Go Rolling By Gabriel 40
635 We Never Speak as We Pass By Milford 40

Comic Songs, and Songs and Dances.

165 Bread and Cheese and Kisses Lyon 25
167 Cackle, Cackle, Cackle Baggal 25



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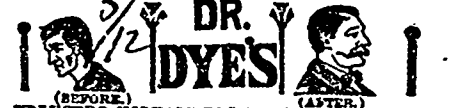
Annuals, Perennials, Climbers, Everlastings, 14 packages 25 cents; Boat Fancy, 10 cents. Plump packages of mix seeds for wild garden 10 cents; roots of Hollyhock, 5 bars 40 cents; Honey-suckles, Scarlet Trumpet, etc., 2 for 25 cents; Lemon Lily and Double Lily, 2 for 25 cents. Dill, Mich., Box 27; (Mrs. A. A. Fentonville, Genesee Co.

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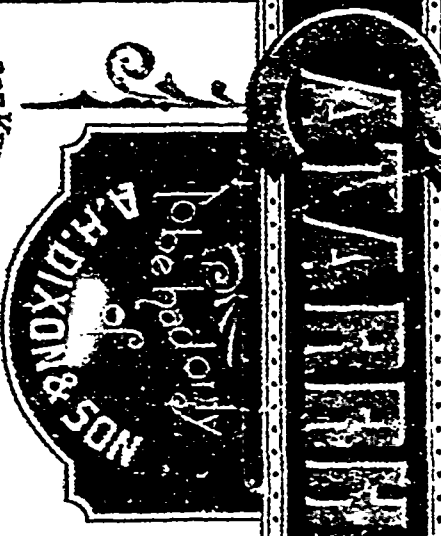
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RAPID AND PERMANENT CURE OF CATARRH



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Catarrh is a mucous-purulent discharge caused by the presence and development of the vegetable parasite known in the internal lining membrane of the nose. This parasite is only developed under favorable circumstances, and these are: Morbid state of the blood, as the biligested corpuscle of tubercle, the germ poison of syphilis, mercury, toxemia, from the retention of the effluvia of the skin, suppressed perspiration, badly ventilated sleeping apartments, and other poisons that are generated in the blood. These poisons keep the internal lining membrane of the nose in a constant state of irritation, ever ready for the deposit of the seeds of these germs, which spread up the nostrils and down the fauces or back of the throat, causing inflammation of the throat; by the Eustachian tubes, causing deafness; borrowing in the vocal cords, causing hoarseness; involving the proper structure of the bronchial tubes, ending in pulmonary consumption and death.

Many attempts have been made to discover a cure for this distressing disease by the use of inhalants and other ingenious devices, but none of these treatments can do a particle of good until the parasites are either destroyed or removed from the mucous tissue.

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