

Should the subscription remain unpaid for 3 months from the time the first paper is sent to the subscriber, the price will be \$2.00.

Agriculture.

ORCHARDS ON SHALLOW SOIL.

My experience teaches me that it is a mistake to crop the ground in young orchards after the third or fourth year after transplanting, if the growth of the trees is thrifty, as the roots extend much farther than is usually supposed, reaching a distance of ten or twelve feet or more from the tree, where the surface is rich and mellow, and the sub-soil hard and forbidden, leaving but a thin stratum for the roots to extend themselves, which they seem to do all the more rapidly in a lateral direction. It will be readily seen that plunging this surface the usual depth is to tear up the roots and interfere with their progress, seriously checking the growth of the tree. The roots are fine, and not easily seen, so that the mischief is little suspected. We want all the growth we can get for young trees, and the exposure of the roots to the warmth and the rains, and the immediate effect of manure spread over the surface, are favourable to this. Shallow culture, mainly with harrow and cultivator, is the thing here, in connection with mulching, which is equally important.

Mulching in summer guards against the heat of the sun, and against the drouth, both of which will work mischief if no protection is given. Also a coat in winter guards against the cold. Nature has her shade and her leaves for these purposes. As such shallow soil usually occurs in our clays, some vegetable material is preferable for a summer mulch, such as weeds or coarse grass cut and applied green, and immediately after working the soil. This will keep moist a long time. The mulch, well rotted, will form an excellent material in the soil, loosening and enriching it.

For a fall and winter coat, coarse barnyard manure is the thing, serving for enrichment and for protecting and preparing the trees for an early and vigorous growth. And this care must be continued while the orchards last, increasing the attention as the roots more and more occupy the soil. A single neglect may be hurtful, and sometime fatal—as were protection during an open and severe winter is withheld, or during a very hot, dry summer. In the latter case, more cultivation, although a benefit, is not sufficient; it needs a coat to protect; and as the weather of no season can be foreseen, regular attention is the only safe way.

It will be seen that an orchard on such ground is no small undertaking. But where there is no such soil available it must be used; and most of our northern land is of this character or approaching it—clay predominating, with usually a thin, hard subsoil, overlaid by a thin arable stratum, which the roots are forced to occupy. And it is this exposure and the neglect which attends it that are to a large extent the cause of so much complaint with our orchards. But when all has been said that is stated the most important thing remains to be mentioned—underdraining—which our clay land so much needs, but particularly for an orchard, and never at less than a depth of four feet. This done the roots will work downwards, following the warm rains and the air as they benefit the crude soil, thus requiring less attention and less manure.—Country Gentleman.

NUTRITION IN FRUIT.—R. F. Kenzie, of Lansing, Mich., furnishes some facts and deductions from analysis, showing the relative nutritive value of fruit as compared with other foods. Taking the average of the more common large and small fruits they contain from four-fifths to nine-tenths water. They do not rank high for repairing and building up the human body. An egg, weighing a little over an ounce and a half, and containing 77 grains of albuminous matter, is equivalent in nutritive value of 77 ounces of heart cherries, 22 ounces of grapes, 30 oz. of strawberries, 40 oz. of apples and 4 pounds of pears. Heart cherries contain only three-fourths water, and have nearly double the nutritive value of strawberries, which have more than nine-tenths water. These, we may remark, are the results of analysis; but in actual use the case may be different, as some foods are more readily assimilated than others, and those which contain little nutriment in themselves may strongly promote the digestion of other substances. In one respect, fruit possesses a power of preventing disease, when regularly eaten, which gives it great value. Residents of newly settled portions of the country, when they can have a regular supply of well ripened fruit, are rarely attacked with malarial diseases which so often prevails in these regions.

The Agriculturist.

A WEEKLY JOURNAL DEVOTED TO AGRICULTURE, LITERATURE, AND NEWS.

ANDREW LIPSETT, Publisher.

"AGRICULTURE THE TRUE BASIS OF A NATION'S WEALTH."

ANDREW ARCHER, Editor.

VOL. 1.

FREDERICTON, N. B., OCTOBER 12, 1878.

NO. 27.

EXPERIMENTS WITH COLORADO BEETLES.

The report of the Entomological Society of Ontario, Canada, gives a statement of a series of experiments with the Colorado potato beetle, the result of some of which will be interesting to our readers. They were performed by W. Brodie, of Toronto. Thirty beetles, after being starved for twenty-four hours, refused leaves of carrot, parsnip, beet, pumpkin, lettuce, sun-flower, sage, and cabbage. After eight more hours, when supplied with potato leaves, they ate them freely. A similar experiment was made and repeated with a large number of common weeds, but none were eaten. Again, thirty beetles, after being kept eleven days without food, were given the leaves of a large number of weeds which remain untouched. Potato leaves were then eaten freely. Three repetitions gave the same results. To ascertain how long they would live without food, of forty-five beetles, which were allowed nothing to eat after changing to beetles, four died the fourth day, thirty-three the fifth day, two on the sixth day, and three more by the eleventh. Over 75 per cent. died within five days; the males dying first. The next experiment was to take thirty mature beetles, which had partaken of food; they were then kept without it. Two died by the fourteenth day, six by the nineteenth, five by the twenty-third, three more by the twenty-seventh, while 20 per cent. survived forty-seven days' fasting. This experiment which was repeated with like results, show that beetles may be secreted in the packing of merchandise in ships, and may easily cross the Atlantic and come out alive. Other experiments were made by which it was ascertained that on an average one beetle will eat an inch square of potato leaves in thirty hours, the maximum rate being ten hours, and the minimum thirty-seven hours. One beetle is able to defoliate entirely one plant of potatoes during its beetle life. The experiments on feeding the beetles, and the time required for their death by starvation, seem to show conclusively that if no potatoes were planted within their reach the race would soon die and disappear.

CANADIAN CATTLE IN BRITAIN.—A

Edinburgh correspondent of the *Globe*, wrote lately the following letter on the above subject. It applies to New Brunswick as well as to Ontario:

The Rabicon is passed, and our Canadian cattle have been quite a success in Scotland this year. They have stood side by side with the Irish and Scotch in the north—Aberdeen, Montrose, Dundee, Arbroath and Perth; in the south—Glasgow, Kilmarnock, and Glasgow, and the manufacturing city of Glasgow, and it was pleasing to me to find our cattle from Guelph, Galt, Fergus, Peel, Pickering, and south Ontario looking bright and fresh amongst the Scotch heather. And, moreover, a small number as a test were sent to the Dublin market.

May I ask, then, our Canadian farmers, through the columns of the *Globe*, to see to it that they look to their interests and improve their herds.

There is no need for Canada to take a second position in this transatlantic trade. I want Canada to do her duty in the matter, for depend upon it there is a permanent market in Britain for Canadian produce.

The difficulty about the crystallization of the syrup from Indian corn and sorghum having been now overcome, there is a possibility that these northern countries in which best sugar is a financial impossibility may yet find themselves supplying their home markets. One of the features of the Minnesota State Fair now proceeding is the manufacture on the grounds of sugar from the amber sorghum, a new variety of corn that will succeed in any climate where common field corn will ripen. There seems to be no doubt that the quality of the sugar made is first-rate. The real test is on the financial point, and that can only be decided by actual experience. In the meantime Canadians, and especially our brethren in the North-West, where sugar brings a dreadful price, can afford to wish well to the project.—*Canada Farmer*.

A man cannot succeed in any enterprise unless he takes a keen interest in it. To be successful as a farmer, one must love the pursuit, take a delight in following it, be ambitious to raise good crops, good stock, and have everything neat and tidy about him. He must take pleasure in reading journals devoted to his calling, so that he may profit by the experience of others. Instead of being an ignorant he must be ambitious to be intelligent, and to pursue his business understandingly. Such men adorn the agricultural profession.—*Colman's Rural World*.

STOCK AT PORTLAND FAIRS.

A State Fair was lately held in Portland, Me., of which the *Maine Farmer* gives a full report in its issue of Saturday last, September 28th. From the account given of the cattle department and of the high character of the stock, it would appear that the breeders and farmers of Maine are far ahead of those in New Brunswick, and that there State Fairs have done much to raise the standard of stock than our Provincial Exhibitions have done for the stock of New Brunswick. The improvement of stock is a matter of the first importance now that the exportation of live cattle to England from America has developed into a vigorous and growing trade. But the farmers of New Brunswick never can hope to compete with the Americans in that trade unless they give far more attention to the raising of stock than they yet have done. We extract a portion of the *Maine Farmer's* report.

Commencing at the right of the cattle department, near the Secretary's office, for the purpose of making the long circuit of the most stock division, we first come to the stall assigned to working oxen—a grand show of themselves, and one of the strongest features of the livestock department. In all there were more than eighty pairs of oxen and steers of the different ages, and it would be a difficult matter to say which was the better pair in the whole lot. The largest exhibitor was Mr. J. Libby, of West Waterville, President of North Kennebec Society who led off with eight pairs, three of five year olds, two each of four and three year olds, and one of six year olds—all being first class animals; the two year old steers, very fine. The next largest exhibitors were the Hiltens of Anson—men who for forty years or more have been famous among the leading farmers of Somerset county for good cattle—Edgar Hilt and Son, Francis Hilt, John M. Hilt, and Columbus Ailton—contributing largely to this department. The latter shows a pair of four year olds, girthed 7 ft. 2 in.; and John M. Hilt shows on the ground a pair of steers seven months old measuring close on to five feet, 3 in., and said to weigh 2,220 lbs. A. S. Rand of Thorndike had a good pair of four year olds filling out almost eight feet of the girthing chain! One of the largest and handsomest pairs on the ground was owned by A. H. Pettengill of Livermore Falls, three years old, girthed 7 ft. 5 in. and weighing 3,670 lbs. Other exhibitors of working oxen were City Farm, Portland, two years old, girth 6 ft. 3 in., weighing 2,300 lbs.; Joseph Blanchard, Cumberland, a pair of eight feet cattle, very handsome indeed; Wm. Warren, Scarborough, five years old, splendid workers; Lorenzo Knight, Auburn, and Eli Stone. Several good pairs were shown without being attached and it is impossible to tell who were the exhibitors or owners.

Hereford, Mr. J. S. Hawes of Mt. Pleasant Farm, Vassalboro, was the principal exhibitor in this class. He showed twelve head, and at the time we visited his booth eight blue and three red "New England" ribbons were flying from his various pens—an evidence that he had not been slighted in the distribution of the awards at Worcester. His five year old bull Higginson, Chief led the herd, and three very handsome calves the get of Chief. Mr. Geo. W. McKenney of Monroe also showed seven Herefords of the Underwood strain, his bull Waldo Compton, five years old weighing 2,100 pounds.

Shortboms. Almost the only contributors to this class were J. B. Rodwell and S. G. Otis, Hallowell, and J. Winslow Jones, Portland—the whole number of animals being some forty. Mr. Jones showed two bulls, six cows and four calves, his bull Prince Victor, four years old, being a bull of very fine quality, and showing good breeding although his color, nearly white, was disliked by some. But color should never receive much consideration, indeed it should be wholly set aside, when other points of merit so far outweigh it, as in this instance. At one year old Victor weighed 1,300 lbs. Mr. Rodwell had a herd of fourteen animals—in charge of his head farmer, Mr. H. C. Austin—and was headed by the bull 2d Airdrie Duke of Oxford—bred by the Talbots of Rome, N. Y., and consisted of seven cows, and a number of heifers and calves. Among them were several of the Beauty and Bianca families by a Kennebec Chief and 2d Baron of Fairview, cows noted as deep milkers, and showing by every mark and characteristic that they excelled in this particular. Lucy 4th, with a calf by Kennebec Chief by her side (she by 2d Baron of Fairview) was especially noteworthy in this particular. Had his animals been prepared for exhibition they would undoubtedly have shared better at the hands of the committee, but were exhibited from a common pasture to show how practical farmers keep their stock—and the committee should have taken this fact into consideration, which, perhaps, they did. S. G. Otis of Hallowell showed four cows, two heifers, and two calves of this breed—chiefly of the Whitman strain, Fitchburg, Mass.,

—the gem of the lot being the cow Perfection, which has given nine pounds of butter per week on common feed. His bull calves, dropped in January and April last, girthed about five feet, and were very promising animals. W. W. Waugh & Sons, Starks, were also contributors to this department.

Alonso Libby of Saccarappa, was the leading exhibitor of Ayrshires, who had twenty-three head of this breed upon the grounds. The bull Harry—of the Dane herd—ten cows, four young heifers, six calves and three yearling bulls making up the number. His cow Snowbird (466, N. A. Ayrshire Register), four years old is a celebrated milker, having given 8,000 lbs. of milk in the year 1877, while for some days her yield has been as high as 50 lbs. For his own herd the coming season, Mr. Libby is to use the young bull Maine, of the well known Douglass strain. The State Reform School showed the young Ayrshire bull, fourteen months old, presented to that institution by Frank Buck, Esq., of Orland. Maj. Seward Dill, Phillips, also showed several grade Ayrshire and Jersey cows, very pretty animals.

We now come to the Holstein section, and here Gen. W. S. Tilton of Togus is the only exhibitor. His beautiful animals have been so frequently described in our columns that it is unnecessary to say more than that the whole collection consisted of the bull Zaandam, with twelve cows and ten calves, and were much admired by all visitors—and they held good reception every day.

JERSEYS.

In this class the show was very slim, though some choice animals were exhibited. The exhibitors were W. W. Harris, Portland, seven animals; L. S. Robinson, Warren, three animals; G. A. Pike, Winthrop, seven animals; S. Dill, Phillips, five heifers; P. H. Snell, Winthrop, two animals; O. Gardiner, Rockland, one—a yearling bull. The cows exhibited by Mr. Pike and Mr. Snell were choice animals and showed good breeding. Mr. Robinson's cow Milkmaid 6th, gave 4341 lbs. of milk from March 16th last, to Sept. 19th. Sixteen pounds of her milk made one of butter, and her record is 144 lbs. of butter per week. She is by the bull Trojan, out of the celebrated cow owned by Dr. Quinby of this city.

ENTOMOLOGY AND AGRICULTURE.

When the conference on insects injurious to crops and gardens was held on the 7th June 1877, at the Society of Arts, under the presidency of the Duke of Buccleuch, one of the questions discussed was how a knowledge of the life histories of insects harmful to and useful to the farmer and market gardener could be spread among those engaged in such work in a manner to enable them readily to learn to distinguish in the different stages of metamorphosis their friends from their foes? The late Mr. Andrew Murray who opened the conference with a paper, quoted from articles in *The Times* of September 16th, 1876, October 4, 1876, and March 1, 1877, bearing upon the subject, in which the experiences of French and American societies who had considered these matters were referred to. Direct legislation on the destruction of injurious insects had been resorted to both in France and America; but at the conference it was felt that, at least for the present, all that could be done in this country was to promote a knowledge of the appearances and the habits of the insects in their different stages. The Government collection of the science and Art Department, arranged by Mr. Murray, had the subject largely in view; but the making of copies of this collection in various agricultural districts was recognised as somewhat expensive, and as needing skilled artists both with brush and pen, and in setting up preserved specimens. It occurred to Mr. Carrington, the editor of the *Entomologist*, and now naturalist at the Westminster Aquarium, that a simple way, which most village schoolmasters could adopt, would be to keep the insects under glass during all their changes. He therefore obtained the requisite permission to have space in the Aquarium for the erection of a series of cases which he has called his "insectarium." The result during the summer has been good, and according to the information given, on inquiry, by the attendants, many applications have been made for information how to arrange and manage similar collections. Among the coleoptera, the stag beetle and several corn weevils have been shown all through their life histories. Of the hemiptera there have been several varieties of plant bugs. The hymenoptera have been illustrated by the common turnip fly, *Adalia spuriarum*. This caterpillar, so well known as the black jack, palmer worm, black palmer, canker, &c., is most interesting in captivity, the larvae eat immense quantities of turnip leaves very rapidly. The diptera have been illustrated by *Tipula claverata*, the common "crane fly" or "daddy longlegs" the larva of which is so destructive to mangel wurzel crops while feeding on the young roots. How many are there familiar with the "daddy longlegs" who know the ap-

pearance of the larva? The orthoptera have been shown by crickets and grasshoppers all through their stages. The lepidoptera have been in the same way extensively shown in such well-known pests as the three white cabbage butterflies, *Pieris brassicae*, *napi*, and *rapae*. These were plentifully shown in each stage of their respective seasons, with the parasitic *Ichneumon*, which in a state of nature keep the balance so beautifully, never allowing the lepidoptera to become too plentiful. In Canada and some parts of the United States, where these white butterflies have become colonists from various causes, it has been found necessary to resort to the introduction of the cocoons of the parasitic *Ichneumon* to check their ravages. Several kinds of *Noctua* have been represented both by those which feed in darkness and those which feed on roots of plants, also the stable moths, ordinary clothes moths, &c. The less conspicuous *Aphid*, or plant lice, have been also included. One set of divisions of the cases has been occupied with silkworms, which will feed on English trees, such as plum, apple, oak, and besides the usual species so well known as feeding on mulberry or lettuce, though this is rather apart from the principal object. There is hardly a village school in the country without a patron who takes an interest in the school, and who might be found ready to contribute the small cost of glazed cases in which insects might be kept. Mr. Carrington has practically shown how simple such an arrangement may be; and his happy idea goes a long way to solve the question how children in agricultural districts may be taught to recognise, in their various changes, the insects which are useful and those which are damaging to crops and gardens.—*North British Agriculturist*.

FUTURE OF THE DRAFT HORSE BUSINESS.

Breeders of draft horses have every reason to feel encouraged, says the *National Live Stock Journal*: There has never been a time when good heavy horses were in greater demand than at present; and the prices which such horses now command are very little, if anything, below those of five years ago.

Notwithstanding the extensive importations of draft stallions from France and Great Britain to the United States during the past ten years, the supply of large, well-formed draft horses in this country is still below the demand; for as the supply increases, the demand grows apace; and little horses, unless they possess exceptional speed, are correspondingly neglected.

We are satisfied that the increased size, which must inevitably result from the extensive use of these imported stallions in the West, cannot fail to have a beneficial effect upon other horses than those especially used for draft. Many of the stallions imported from France show unmistakable indications of possessing a large share of the Percheron blood, once so famous for ability to make long journeys at a quick pace with a heavy load, and from their descendants in this country, out of well-bred mares, we may reasonably expect to produce by a proper course of breeding hereafter, another type of horse for which the demand is active, and the supply very light—good, stylish, high stepping large coach or park horses. The use of the Clydesdale is also giving us a foundation of much the same sort, upon which we can build, with large styling, thoroughbred, and well bred trotting stallions of good size and style, with certain profit.

Breeding for speed alone is at best an uncertain business; and when to this uncertainty we add the expenses of training, the chances of profit are so slight that we would not advise any general farmer to engage in the business, either with trotting or running horses. As an amusement or recreation for gentlemen of wealth and leisure, it is most fascinating; but those who have found it a remunerative business are scarcer than 2:20 trotters. On the contrary, those who breed large, stout, and well-formed draft, or active, stylish, good stepping coach or park horses, invariably find a ready sale at good prices, and this demand must be a permanent one.

Baron Liebig says of agriculture. "Not merely for its utility, but on account of the very intelligent nature of its pursuits, it stands above all occupations, and its practice procures to the man who understands the voice of nature, not only all the advantages for which he strives, but also those pleasures science alone can afford. There is no profession which for its successful practice requires a larger amount of knowledge than agriculture and none in which the actual ignorance is greater."

DON'T ALLOW THE COWS TO SHRINK.—The milk yielded by a cow represents the only basis of profit to her owner. When the milk ceases she becomes a bill of expense. The dairyman then should study how to keep a full flow of milk through the whole season. He must remember that the milk is allowed to shrink in quantity, from poor pasturage, it cannot be again recovered when the feed becomes good. If the dairyman has green food—such as green oats, peas or corn—let him feed these; but, if he has not such green food, he should then resort to grain to make up a full ration. To eight quarts of bran or middlings to each cow per day, or four quarts of oats or corn meal, will keep the flow of milk while the grass is short. The extra food will be paid for each day by the milk it produces, besides keeping up the quantity of milk ready to be continued when the grass grows again from the fall rains. What we wish to impress upon the minds of all dairymen is, that under all circumstances the only chance of profit in a dairy must be from liberal feeding, to produce a uniform and abundant flow of milk; and when a dairyman makes up his mind that he cannot afford to feed liberally he had better sell his cows at once and get out of a losing business. We know a man with twenty cows, who watches the condition of his pasture and the thrift and yield of his cows constantly, and adds extra feed in barn at once on any appearance of falling off in milk. And the consequence is that his annual yield of milk is fifty per cent. more than many of his neighbors; while the cost of the extra food is not one-third what he receives from the extra yield for the season. Do not be afraid to trust your cows with a few quarts of grain per day. They will pay for it every night.—*National Live Stock Journal*.

HENS IN ORCHARDS.—Speaking of keeping hens in orchards, the *Poultry World* says: "Last fall we visited an orchard in which fowls were kept, the owner of which told us that before the fowls were confined in it the trees made little or no growth, and a corresponding amount of fruit was obtained. But what a change was evident now. The grass was kept down, the weeds were killed, and the trees presented an appearance of thrift, which the most enthusiastic horticulturist could not but admire and envy. The growth of the trees was most vigorous and the foliage remarkable luxuriant. The fruit was abundant, of large size, and free from worms and other imperfections. This excellence was accounted for by the proprietor, who remarked that the hens ate all the worms and curculio in their reach, even the canker worm." He found less trouble with their roosting in the trees than he expected, and that a picket fence six feet high kept them within bounds. His orchard was divided into three sections, and the fowls were changed from one to another, as the condition or the fowls or the orchard section seemed to require."

ORCHARD IN GRASS.—An old friend writes us. "There is a great deal of nonsense talked and written about apple trees requiring cultivated ground. The reason why the trees do not do so well when the ground is in grass, is because it is not grazed and kept short as in England, where all the orchards, or at least ninety-nine out of a hundred, are kept in grass, and never under any circumstances plowed. But the grass is grazed with sheep and calves and never mowed, and it is well-known to be wrong to grow what is not returned to the soil in some shape. Americans do not understand the difference between the fine old permanent sod which is never plowed and the timothy and clover temporary grass here. When the sward is grazed in England, there is nothing to prevent sun and air from benefiting the roots, and the sheep lie a great deal under the trees and leave droppings and urine.—*Rural New Yorker*.

INDIAN CORN SUGAR.—Professor Collier, chemist to the Agricultural Department, has been making a series of experiments upon the manufacture of beet sugar from the stalks of Indian corn. A Washington dispatch says he is not yet able to tell whether his experiments will result in showing that sugar can be profitably made from Indian corn and sorghum. In the use of the new process he has proceeded so far as to show that a most excellent quality of syrup can be made from ordinary corn stalks.

This is about all that can be said in favour of the horse's health; by attending to his comfort and wants, and by following the advice given, the farmer or owner will be repaid; yes! a hundred fold.—*Hints and Helps to Horsemen*.

WHAT IS A THOROUGHBREED.

While well informed, practical men have little controversy on this subject, it is amazing how never ending is the discussion in relation to it, by men interested in the various rings that have been established by dealers in mere pedigree.

A thoroughbred, thoroughly bred animal, is one whose ancestors have been bred to a certain standard of form and quality, for such a number of generations that this standard is uniformly reproduced in the offspring. Experience has established that by the use of mails of the old races, such as Devons, Short-Horns, Herefords, etc., in cattle, upon good cows of common or mixed blood from five to seven generations, we establish in the progeny the fixed characteristics of the superior breed.

Hence, the Short Horn Herd Book published by the association of the breeders of Great Britain, admits to record bulls having five crosses of recording sires, and cows with only four such crosses. The American Herd Book admits all animals tracing to imported stock, or to stock previously in that work. The American Short Horn Record admits all tracing to imported stock. And in both these works the descendants of animals imported without a pedigree, are admitted to record. In many cases the record in these American publications shows only four or five crosses; while animals of equal excellence in all particulars, and having ten or more good crosses, are rejected unless they show connection with imported stock in all their crossed or (in the American Herd Book) with animals recorded in that work. Is their any reason or justice in this, when it is known that animals not of pure blood have been imported?—*Ohio Farmer*.

TREATMENT OF CALVING HEIFERS AND CALVES.—An enthusiastic beginner in Jersey breeding asks the following: "As my Jersey heifers are springing very fast, I thought I would consult you as to the raising of the calves—whether I should leave them with the heifer until her bag is in good condition (that is if it should get hard and feverish), or take them away and feed on skimmed milk, as I was told had to be done with all Jersey stock. I take the liberty of asking you (as you have been among this kind of stock and seen them raised) before any calves are dropped, so I will know just what to do." In the first place your care should begin before calving. Do not allow the heifers to run with older animals, for fear of accident from "bullying," give them all the fresh air and sun light you can keep them from damp land, and while keeping them in thrifty condition be careful that they do not get too fat. Let the first calf suck at least three days, and until the bag becomes thoroughly soft. It will be well to milk the heifer dry three times a day so that the calf shall have to work for his living. If the teats are small it is a good plan to leave the calf on her for a month or more until they are well developed. The calf must be changed from new milk to skim milk very gradually. First teach it to drink fresh milk, then add a little skim milk—more and more every day. If the quantity is increased too rapidly ground the calf may scour. The remedy for this is to decrease the proportion of skim milk.—*Bulletin of Jersey Cattle Club*.

PORTABLE FOOD FOR HORSES.—The *Journal de St. Petersburg* furnishes the following details regarding the preserved food for horses, prepared in the event of scarcity of oats, or in case the transport of the food as used at present should prove too difficult. This food is composed of pounded oats and gray-pea flour, mixed with hemp-seed oil and salt. The paste obtained by this mixture is then cut up into thick cakes of about four inches in diameter, pierced with small holes, to assist the soaking in water. On being taken from the oven, these cakes are strung upon wires, so that each wire holds the daily ration for a horse. Each ration, of the weight of four pounds, is equal in nutriment to ten pounds of oats. It is stated that the horses are extremely fond of these cakes, whether soaked in water or quite dry; and although, when fed exclusively on these cakes, they become thinner in appearance, they do not lose any of their strength, though hard worked.—*Druggists' Circular*.

FARM POULTRY.—Connected with very farm establishment there should be a poultry yard. Without it the farm would be incomplete. We see no reason why poultry should not be considered as a species of agricultural stock, and turned to as good account as cattle or hogs. In fact, every household, whether farmer, mechanic, or professional man, would find to his advantage to keep a few hens, at least enough to supply the

Ordinary advertisements, 10c. per line, 1st insertion, 15c. Each subsequent insertion, 10c.

BUSINESS ADVERTISEMENTS

Inserted for 6 months or 1 year on moderate terms.

The number of weeks an advertisement is to be inserted should be clearly stated. When this is not done it will be continued until ordered out, and charged the full time it has been inserted.

table with an abundance of eggs. A dozen hens, with careful management would supply an ordinary family with all the eggs they wanted, and a fowl now and then for the table. The cost of food for this small number of hens would amount to little; the care and attention given to them would be amply repaid by the pleasure afforded in studying their habits and watching their cunning ways; and the profits realized from the food obtained would amount in a year to a very handsome sum. During this period a dozen hens would lay at least a hundred dozen of eggs, and raise chickens enough to supply the family with a weekly dinner. From these data calculations can easily be made of the profits gained by keeping poultry.

Spruce butter tubs are the best; white hemlock makes a sweet tub; acids from the oak colors the butter and injures its appearance; white ash gives the butter a strong flavor if kept long and increases the liability to mould; maple smells and cracks badly. Soak all tubs four to six days in brine before using.

THE FARMER'S DAYS.—Where are the farmer's days gone? See they are hid in that stone wall, in that excavated trench, in the harvest grown on what was shingle and pine-barren. He put his days into carting from the distant swamp the mountain of muck which has been trundled about until it now makes the cover of fruitful soil. Labor hides itself in every mode and form. It is massed and blocked away in that stone house, for fifty years. It is twisted and screwed into fragrant hay which fills the barn. It surprises in the perfect form and condition of trees clean of caterpillars and borers recently pruned, and loaded with grafted fruit. It is under the house, in the well; it is over the house in slates and copper water-spout; it grows in the corn; it delights us in the flower-bed; it keeps the cow out of the garden, the rain out of the library; the miasma out of the town. It is in dress, in picture, in ships and cannon; in every spectacle in odors, in flavors, in sweet sounds, in words of safety, of delight, of wrath, of science.—*Ralph Waldo Emerson*.

Although it was believed that the Great Eastern would be well-nigh useless after her value as a passenger steamer had been disproved, she develops latent capacities every once in a while that show her builders to have been wiser than they knew. Everybody remembers the immense service she rendered in laying the Atlantic cable, which, without her, it is highly probable could not have been successfully put down. She has laid a number of cables, and has in that way been a benefactor to the whole of civilization. Now she is to be employed in a new manner—as a cattle transport between England and Texas, making regular trips between London and Galveston. She will carry, it is said, 2,300 head of cattle and 5,700 head of sheep, and will thus go far toward feeding the British Metropolis.

Experiments are being made by the Government of New Zealand with a view to acclimatizing the English humblebee. The object is to assist the New Zealand agriculturist in cultivating their fields of clover. Common bees are not strong enough to force their way into the petals of the clover flower, and thus fertilize the plants as they fly from one to another. For this purpose, therefore, the humblebee is needed; but so far the nests sent out have been destroyed. Attempts to acclimatize the common bee in some hot climates have so far proved useless. After a short period they quit the hives and cannot be enticed back.

Chatsworth, the estate of the Duke of Devonshire, contains 2000 acres, which he retains for his private park and flower garden, besides thousands more that are rented for farming. His park is bounded on all sides by hills, which cut it off from the rest of the world, and no other house than his own can be seen from the windows of his grand mansion. His flower garden alone comprises 102 acres, where, in sixty laborers are constantly employed to keep it in order. The remainder of the 2000 acres is all in grass and woodland, and stocked with deer. This is said to be the finest private residence in Europe.

SOMETHING EXTRAORDINARY IN THE POTATO LINE.—Mr. Patrick Hooper, Moncton, has raised two crops of potatoes this year from the same piece of ground. He planted the seed for his first crop in the latter part of April digging the potatoes, which were of a large size, about the 11th July. The seed for the second crop was not put into the ground till some two weeks after this, as Mr. Hooper, last summer, was eating potatoes the result of this planting.—*Times*.