

JULY 2, 1900

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VOL. XXXV. LONDON, ONTARIO. JULY 16, 1900. WINNIPEG, MANITOBA. No. 506

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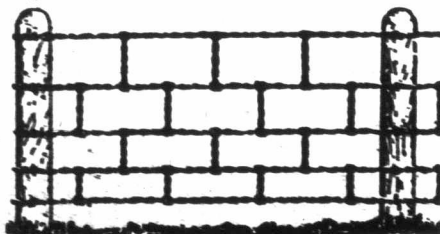
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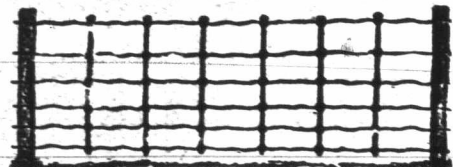
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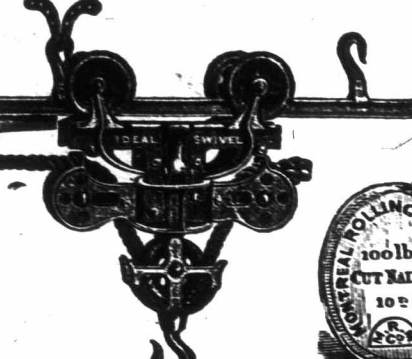


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Vol. XXXV.

LONDON, ONT., AND WINNIPEG, MAN., JULY 16, 1900.

No. 506

EDITORIAL.

The Soil and Crops.

From observation and enquiry, we are convinced that the farm lands of Canada contain as large a proportion of strong, lasting and naturally fertile soil as any other country of considerable size in the world, and we are persuaded that the fertility of the land in this country may be maintained at less cost than in most other countries. There may be, and doubtless are, European countries in which, by the use of artificial manures and much labor expended in tillage, heavier yields of crops are obtained, but it is certainly at much greater cost, and if the crops were sold for cash in each case at the market prices obtaining in the respective countries, the showing for profit would probably be clearly in favor of Canada. That our farm lands are not, as a rule, producing nearly equal to their capacity, if uniformly well farmed, is a fact which must be admitted. This lack, we are persuaded, is capable of being easily improved upon, and the yield of crops greatly increased at less expenditure of money in Canada than in most other countries. The conditions that are necessary to this end may in a general way be summed up in three features of farm management well conducted and carried out, namely, a judicious rotation of crops, the growing of clover, and the making of manure by feeding to stock the crops grown on the farm. There is another condition, which, in the case of many farms, and to some extent on most farms is necessary, and which is somewhat expensive, but which in most cases would pay for itself in increased yields of crops in a very few years, and that is underdraining. While the best results cannot in many instances be obtained without underdraining, it is the one feature of the four mentioned which can best be deferred to a future time by those who have not the means to undertake the work at the present time. The others are within the reach and ability of the average farmer, and he cannot afford to neglect to adopt them. It is a shortsighted policy to depend upon the sale of grain and hay as a means of profit from the farm, for the simple reason that at best it is selling the fertility of the land and giving nothing back to make up for what is taken away, and the result must be the impoverishment of the soil. The crops depend so much upon the rainfall of the season that even with the best of farming they are to some extent uncertain, but the land that is well supplied with vegetable matter and is in good heart will best resist the effects of drought, and even if the crops be a partial failure, there is generally enough to carry the stock through, and they grow into money or produce it from the sale of meat or milk, and at the same time help to keep up the fertility of the farm.

A writer in an English contemporary points out that fewer horses were imported from Canada during May than during a corresponding month for the past six years, but they were of first-class quality and brought higher prices. The diminution in numbers is perhaps due to the large numbers gone from Canada this year direct to South Africa for use in the war. In this connection we notice that one of the Toronto *Globe's* correspondents calls attention to the excellent service rendered by the Canadian horses at the front, where their stamina and intelligence have enabled them to sustain to a very marked degree the unusual strain put upon them, their powers of endurance being notably superior to many others under similar circumstances.

Manitoba Crop Conditions.

The excessive drought which prevailed throughout the wheat sections during the growing months was broken by general rains the last few days of June and the early part of July. The conditions on the average farm, however, are entirely exceptional, and it were the veriest guesswork to prophesy on the results of the harvest at this date. With the soil heated above ordinary temperature, and in fine mellow condition, the abundant moisture and July warmth will cause a marvelously rapid growth, and in cases where the rains came before the grain was headed out, the results will certainly be far better than could have been hoped for. Unfortunately, however, much of the wheat was headed out at 5 or 6 inches in height before the rains came, and consequently one could find immediately after the rains, in many fields wheat headed out and other plants just starting from seed sown at the same time. Much of the straw will of course be short, too short to make sheaves, but if even six or eight bushels of fairly good wheat can be secured per acre it may yield as much profit as an ordinary 20-bushel crop. The cost of harvesting, threshing, twine, etc., will be little, and the price per bushel in all likelihood will be near the dollar mark. In '86, which was an extremely dry season, the writer harvested a crop of wheat which only yielded 6 bushels per acre and was so short that it was necessary to fasten willow brush to the binder reel in order to sweep the grain on to the platform. The binder attachment was taken off the binder and an arrangement like a box put in its place, provided with a door hinged at the top and manipulated with an iron rod in the same way as the "butter" on some binders is regulated. By this means as soon as the box is filled with heads it can be dumped out in windrows.

The rains have in many districts greatly helped the hay crop and have improved pastures everywhere so that the live-stock and dairy industries are greatly benefited and stock will doubtless be in better condition this fall than usual. The conditions during the early part of the season in the ranching districts of Alberta were particularly favorable, the stock wintered well and export shipments commenced early in July, with cattle fatter than last fall. Throughout Eastern Alberta and Saskatchewan there was plenty of moisture throughout the growing season, and crops in these districts are fully up to the average.

The Grain Harvesting.

The hay crops in most parts of Ontario and the Eastern Provinces has been a fair average one, though in some districts, where the drought of last summer was prolonged and severe, the young clover plants were burnt out, and the yield of the older meadows has been light, while in Manitoba, owing to the lack of rain during the spring months, the hay crop will return a low yield. It is therefore probably correct to describe the crop on the whole as a light one, and the deficiency in this class of fodder for stock feeding emphasizes the importance of harvesting the grain crops, which in all the provinces except Manitoba, we are glad to know, are fairly good, at such time and in such manner as to secure, if possible, a good quality of both straw and grain. Straw that is cut before the grain is fully ripe, and saved with little exposure to rains, may be profitably utilized for feeding purposes, especially when chaffed and mixed with ensilage or pulped roots; and when the supply of hay is short there is the greater need to make use of straw in this way. Of course, weather conditions

and probabilities have to be taken into account in harvesting operations. A wet season makes it difficult and sometimes impossible to manage the cutting and curing satisfactorily, but in average harvest weather as we get it in Canada, it is, we believe, the settled opinion of most successful farmers that it is true economy to cut all classes of grain before they become fully ripe. The grain, if cut while in the dough state and while there is some sap in the straw, will continue to draw nourishment from that supply, and will ripen in the shade of the stook with less shrinkage than if allowed to stand till dead ripe, and will take on a fresher color, while it can also be handled with less loss from shelling, and the straw will be much more valuable for feeding purposes on account of having been cut and cured with a good percentage of the sap in it. If from want of drainage or other causes parts of a field are later in ripening than others, of course judgment must be exercised in harvesting, and it may be necessary to allow the more forward portions to get fully ripe before the backward parts can be safely cut, but in favorable weather a safe average may be struck, and if a considerable part is on the green side it will be wisdom to set the binder to make smaller sheaves or to bind them less tightly than in a more uniformly ripe crop; but to avoid the danger of its musting in the mow, care should be observed to have the straw well dried before it is stored, as musty straw is of even less value for fodder than overripe straw, and the color of the grain is apt to be injured by the heating in the mow or stack.

The importance of early harvesting in the Northwest, or the cutting of the grain as soon as it is reasonably fit, is emphasized by the liability to damage from early frosts in those provinces, and the lesson has been pretty thoroughly learned there from experience. In the provinces in which fall wheat is grown and it is desired to follow a crop of barley or peas with wheat, it is important to get the first crop off the ground as early as possible in order to have the land plowed and worked down to a fine tilth before sowing, taking advantage to cultivate and harrow after every rain to conserve the moisture and prepare a favorable seed-bed. As it not infrequently happens that the last of the harvest runs into unfavorable weather, the wise farmer will push the work whenever the crop is fit and get it safely stored as soon as possible. There is a sweet sense of satisfaction in having the crops safe in barn or stack even if the weather continues fine, but that feeling is happily intensified when a rainy season follows, and the farmer reflects on what might have been had he taken things easy and failed to make the best use of the time. On the other hand, long weeks of weary work and a wasted crop may be the price paid for indifference, if the golden days in which they might have been secured are allowed to pass without being improved as they might have been. Canadian harvest weather is, as a rule, less fickle than that of most countries, but the weather is an uncertain quantity even in Eldorado, and cannot long be safely trusted, and the injunction, "Do with your might what your hands find to do," is never more timely than during the harvest days.

It is officially estimated that the wheat crop of India is 184,000,000 bushels, against 238,000,000 bushels last season, and 227,000,000 bushels, the average of five years past.

Unofficial reports from the Paris Exposition state that many first and other prizes have been captured by Canadian fruit, as well as the Grand Prize for the forestry, fish, game, mineral and agricultural exhibits.

THE FARMER'S ADVOCATE
AND HOME MAGAZINE.
THE LEADING AGRICULTURAL JOURNAL IN
THE DOMINION.

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JOHN WELD, MANAGER.

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LONDON, CANADA.

Mr. Ruddick Returns to His First Love.

On this page we give a lifelike portrait from a recent photograph of Mr. J. A. Ruddick, who has just returned to Canada to take a position in the dairy branch of the Dominion Department of Agriculture, after an absence of two years in New Zealand, where he occupied the position of Dairy Commissioner. His retirement was due to the ill-health of Mrs. Ruddick on that Island and the offer of a tempting position in the public dairy service at Ottawa. We notice by the *New Zealand Mail*, that prior to his departure he was tendered a complimentary farewell banquet, at which it was stated that he took with him the good wishes of every dairyman in the country. On that occasion he was presented by the New Zealand Dairy Factory Managers' Association with a beautifully embossed and illuminated address enclosed in a case made of New Zealand wood, expressing very great regret at his departure and referring to the gratifying success which had attended his untiring efforts in advancing the dairy interest. Acknowledgment was specially made of the benefits derived by those engaged in this industry there from his ripe experience, sound sense and valuable advice, while the high repute in which their dairy products stand in Britain is largely due to his efforts to remove obstacles which stood in their way as regards the production, proper grading, shipment and distribution of cheese and butter. The members of his staff presented him with a valuable leather travelling bag, along with many kind assurances of personal regard, to all of which Mr. Ruddick responded in suitable terms.

The Good Roads Movement.

The good roads question is one towards which there is a rapid change of sentiment being felt throughout Canada and the United States of America. People are apparently awakening to the fact that while all waterways and railways—the chief arteries of transportation—are receiving attention in keeping with the progress of the age, the country roads or lesser arteries in many sections are being practically left as they were years ago, or the work done upon them in many instances is done by men without knowledge of the correct principles of road building, and with material and conditions quite unsuited to the purpose for which it is used. Why apathy should have reigned so long on the part of farmers and others using roads and streets in regard to a matter that touches so many is not easily understood, unless it be that what is everybody's business is nobody's business, whereas the chief transportation lines are monetary concerns, conducted on business principles. The importance of a country road being in the best possible condition, consistent with its needs, is no less than if it were a private or company concern, since its utility begins and ends with the perfection with which it fulfils its function. All transportation is a tax, and the better the means of transportation the less does the tax become. For instance, the farmer in one district, living adjacent to a properly-constructed highway that remains firm and in good condition for hauling heavy loads at all seasons, can deliver his potatoes at the market for 1 cent per bushel, whereas another farmer, living a similar distance from town,

has been carefully estimated that over 90 per cent. of every load hauled by railroad, steamboat or express must be carried in a waggon or truck over a highway. We need no more convincing proof than this to indicate that all cities, manufacturers, corporations and laborers are interested with the farmer in the great problem of rapid and economic road improvement.

Turning to the social side of the question, it may fairly be stated that the condition of country roads has a power in the development of mental and moral culture. The railway and telegraph lines are the great modern civilizers of the world, but they are limited in their spheres of usefulness because in many cases they do not reach the farm, the home, the country schoolhouse and the church. The common road is the connecting link between these, and without it the progress of a widespread civilization must of necessity be greatly retarded. They are the foundation-stones upon which the superstructure of society is erected, and upon which its symmetry, beauty and stability must rest. Neighbourhoods, counties and states separated from each other by the barriers of practically impassable roads, in their loneliness degenerate into a condition of moral stagnation, from which it is difficult to arouse them to a common and mutual interest and understanding. Prof. Shaler, of Harvard University, says: "It is doubtful indeed whether a sound democracy, depending as it does on close and constant interaction of the local life, can well be maintained in a country where the roadways put a heavy tax on human intercourse." It is true that many of the roads of Canada and the United States are not such as to stifle human intercourse between rural citizens living apart, and between rural citizens and town dwellers; at the same time, a vast improvement may be made in these particulars by a systematic undertaking of the matter, directed understandingly along permanent, uniform and correct lines of operation. Within the last few years, and largely through the energetic efforts of the Ontario Good Roads Commissioner, Mr. A. W. Campbell, there has developed a rapidly-growing sentiment favoring a change from the old system of statute labor, directed by local pathmasters, to a system of taxation expended under the direction of qualified men trained in the principles of road construction. As time goes on, it seems reasonable to suppose that the old crude system will have passed out, giving place to a system of road construction and road repair scientifically correct, governed in extent with the needs of the road and the intelligence of those appointed to conduct the work. These are some of the thoughts and suggestions that come to us from our observations of the movement and from ideas thrown out at the recent International Good Roads Congress held in Port Huron, Mich., a summarized report of which appears elsewhere in this issue.



MR. J. A. RUDDICK.

but having to drive over a turnpike of poor quality, cannot deliver his potato crop for less than 4 or 5 cents per bushel. The difference in cost of haulage is nearly a tax that may render potato-growing in one case profitable and in the other a non-paying industry. The same principle holds good in hauling milk to creameries or cheese factories. The tax upon the producer bears a relationship to the condition of the roads over which the produce is hauled.

Not only do good roads reduce the tax from extra cost of transportation, but in many other ways relieve depression in rural conditions, for we have abundant proof that land values have risen and that the farmers are more prosperous and happy in those localities where the roads have been subsequently improved. It is also a fact in these localities the farmers are the strongest advocates of good roads. Among the many results following improved highways, besides increased land values, are the following: Better country homes in improved lawns, neater surroundings, inside comforts, etc.; improved school buildings and yards; it will hasten free mail delivery and bring libraries and helpful lectures nearer to all country people, since it practically reduces the distance to town. Such an improved condition of things does not alone benefit the citizen of the country, as his bettered condition and improved tastes will create a demand for more manufactured articles such as the townsman has to sell. It is therefore reasonable to conclude that the burden of road improvement should be distributed alike on all citizens of a country, whether they be townsmen or rural inhabitants. If

STOCK.

Breeders Should Lead, Not be Led.

A great reform is needed in hog-raising in the West, says the editor of *The Wallace Farmer*. The breeders can help it along if they will. They will delay it if they keep on selling hogs that have no other recommendation except their good looks and prizewinning capacity. It is quite true that the farmer will buy fat rather than merit. Breeders are supposed to be able to educate the farmers, to lead them instead of being led by them, and if they will start out this year and raise pigs for the fall sales with plenty of growth, muscle, activity, energy, vigor, and show by their feeding that the farmer is at fault, they can do much to put a solid stone foundation under the edifice which the breeders are rearing.

The great trouble with breeders of all kinds of live stock is that they are always looking at the present market. They ought to breed what the farmers want. Unless the farmers want the right thing, the whole breeding business is on a sandy foundation. Refuse to sell farmers fat pigs. Send to your feeding pens all the pigs that are deficient in bone, length, depth, breadth, in get-up-and-get-there. Do not figure so much on prizewinning, and take the scale of points only for substance of doctrine. You breeders buy show pigs on the scale of points; you know mighty well you don't buy your own breeding stuff on that scale. Either change your scale of points, or keep it for show purposes exclusively. If the breeders don't do this, the farmers will buy red, white, gray, brown, black, grizzled, spotted, or any other color of hogs that are prolific, rangy, and have strong vitality. They will go down to the forests of the South if they can not do any better. It has been our firm conviction for fifteen years that the faults of the Poland-China hogs were not in the hogs at all, but in the breeders. If they wish to retain the confidence of the farmers they must breed not what the poorer farmers or less intelligent farmers think they want, but what all farmers really do want and which the breeder knows they want, whether they think so or not.

An International Shorthorn Sale.

The announcement in our advertising columns in this issue of the approaching great sale at Chicago of sixty head of high-class imported and Canadian-bred Shorthorn cattle from the noted herd of Mr. W. D. Flatt, of Hamilton, Ont., including a considerable number of the prizewinning animals at the leading shows of Great Britain and Canada in the last two or three years, is an occasion of such unusual interest as to call for more than casual comment.

There has been no time in the last half of the century when the need for the distribution in America of cattle of the class embraced in this offering was greater than at present. A distinct shortage of cattle of the beef type all over the continent is an acknowledged feature of the situation, while the market prices, present and prospective, for beef cattle and for breeding stock are such as to inspire confidence and a feeling of safety on the part of breeders in setting full sail to the breezes that blow and are likely to blow for some years in the stockman's favor. These cattle were bred or purchased and imported by Mr. Flatt at great cost, his ambition being to hold, as he does, a prominent place in the front rank of American breeders of Shorthorns on the basis of the superior individual excellence of the animals found in his herd, and to this end, in the selection of his latest importations, in no case has the price been allowed to intervene in the attainment of his object. In many instances, indeed, we are assured it was only by the intervention of influential and skilled diplomats that the wealthy owners were induced to name a price, the instructions being to promptly close a bargain when that point was reached, though the figures were in some instances such as would have staggered a man of less nerve or weaker faith in the future of the breed. In the purchase of these cattle, Mr. Flatt had no intention of offering them for sale at this time, his object being rather to make a selection from them and from his home herd for exhibition at the leading shows in Canada and the United States as an advertisement, and afterwards to retain them in his herd, trusting to the permanency of the demand to pay for them through their progeny, but at the earnest solicitation of leading Shorthorn breeders he has been induced, in the interest of the breed, to offer them at public competition at a time and place which, through the participation of Canadian and American devotees of the cosmopolitan "red, white and roans," appears to be opportune and fitting to make a success of the venture and a record for the breed. If such be not the outcome, it will not be the fault of Mr. Flatt, who has spared no expense in getting together and presenting in fine condition what we have no hesitation in pronouncing as unquestionably the best collection of cattle that has ever been offered at public sale in America from the standpoint of individual merit and good breeding combined. We are conscious that this is saying a great deal, but we speak advisedly, from a personal knowledge of the record, and in the light of observation and experience gained in half a century of close acquaintance with the breed and the breeders.

It is rarely that the opportunity offers in any country to bid at a public sale for a cow in her early prime that has been twice a first prize winner at the Royal Show of England, and is a regular breeder, nursing her own calves and doing it well; but such a cow is included in this offering, as well as an in-calf 2-year-old heifer from the same herd and family, which was being fitted for the Royal this year, and it is confidently believed by those who have seen the winners that she would have taken first place there had she not been claimed for Canada before the event. There are also many others in the collection which were prizewinners at prominent shows in Scotland and England, where competition is quite as keen as at the Royal, and where none but toppers can win. In the list of the imported animals catalogued for the sale there are numerous sons and daughters of noted prizewinning bulls, which are the sires of prizewinners in profusion, and some of the females are in calf to Royal champions, as well as being the daughters and granddaughters of championship winners.

A noticeable and regrettable feature of the public sales of Shorthorns held in America this year and last has been the lack of high-class bulls available, a fact which has reflected on the average prices realized for the offerings. This will not be the case in Mr. Flatt's sale, as a really strong force of mentioned young bulls are included, among which are the two grand 2-year-old sons of ex-Premier Greenway's champion bull, Judge, which were alternately first and second prize winners at Canada's leading fairs last year, and which, while well-nigh perfect in symmetry of proportions and full of quality, have size to match, and will each tip the scales at over a ton before the day of sale. Only the will to meet the wishes of prominent breeders that the offering of bulls should be made a strong one

has led to the decision to catalogue the favorite stock bull, imported Golden Fame, now in his 3-year-old form, and just at the time when his calves by their excellence are attesting his prepotence as a sire. He has been considered too valuable as a breeder to justify loading him with flesh for the showing, and he has been freely used in the herd, but he is in fine condition, standing well on his legs and true in all his lines, and in the light of his success as a breeder is worth to-day at least four times the sum of the plucky bid which secured him for the Trout Creek herd only two and a half years ago, when the revival of trade was dawning, and the price paid was a record one in Shorthorn sales for a decade on this side of the sea. The younger imported bulls are a uniformly good lot of most desirable type, full of quality, and promising to grow into show bulls.

The Canadian contingent of females includes the sweepstakes cow at the three greatest shows in Ontario last year, and her half-sister of the same age, who has been alternately placed first and second to her in their class in the showing each year since they were in the calf list, while another half-sister, all being daughters of imported Royal Sailor, stood a worthy second at Toronto as a yearling in 1899. The charming heifer illustrated on this page, a model of bovine perfection, and an outstanding first as under a year in strong competition around the circuit of shows above referred to last year, is one of the plums in the offering, and will meet the expectations of the most exacting. Remembering that it is freely granted on both sides of the international line that to win first or second honors at Toronto in the Shorthorn class as a rule stamps the winner as good enough to "go up head" in any contest in the camp of the red, white and roans on this continent, some idea may be formed of the caliber of Miss Canada as personified in the make-up of this sale list. We risk little in venturing the

scale and constitution are happily combined with quality, smoothness and finish in the highest degree. This is just as all sensible breeders know and have long known in their hearts, or their better judgment it should be, and we congratulate Shorthorn breeders the world over on the dawn of a day in which pedigree prejudices and color fads and fancies are dying and men are looking for substance rather than shadows. These remarks are in no sense an apology for the pedigrees of Mr. Flatt's cattle, but are rather commendatory, for those who want Scotch, and the best Scotch only, can find it in the catalogue to their heart's content, while those who want something better than Scotch and only Scotch will find just what they are looking for, with just enough Scotch to make them better. Nor need we apologize for the colors, for those who are not yet sufficiently enlightened to have gotten over the absurd prejudice that calls only for "red and all red" may have it here put up in precious parcels, while those who are willing to take the winning color, not because it is roan, but because quality and thickness of flesh so generally go with that color, will find rich roans galore and to the Queen's taste.

The phenomenal lists of prizes hung up by the Fair Associations and Breeders' Associations in the United States and Canada this year, representing the largest amounts of money ever offered in America, excepting, perhaps, at the World's Fair, make this a peculiarly favorable opportunity to equip and strengthen show herds, not only for this year's contests, but also for the Pan-American Exposition, which is to signalize the opening of the twentieth century, and as all the leading exhibitions in both countries are wide open, they may well be regarded as international events, as is also this sale, and we trust that Canadian breeders will see that the plums do not all find a home on the other side of the line. We are willing to believe there is sufficient enterprise among Canadian breeders to bring a fair share of them back to Canada. We are very sure that if any other Canadian breeder were offering such cattle at Chicago, Mr. Flatt would have the ambition to secure at least one or two of them, as he has been a liberal buyer at many sales in the Dominion. Nothing could give a breeder a better advertisement than to be a buyer at this sale, and nothing could do more to give Canada a better standing with the United States. The question of distance cuts little figure in this affair, as Chicago is quite as near to Canada as to many of the States which are likely to be represented at the sale, and as the consent of the Minister of Agriculture has been obtained, that animals purchased at the sale may return to Canada on the tuberculin test which has been made to admit them into the United States, there are no regulations to hamper or detain them, but parties attending the sale may bring their purchases home with them, and we hope to see Canadian breeders in strong force participating in the international Shorthorn tournament in the city by the lake on the seventh of August. Further reference to the sale list will be found in the Stock Gossip columns in this issue.



QUEEN OF THE LOUANS.

First-prize Shorthorn heifer under a year, at Toronto, London and Ottawa Exhibitions, 1899.

TO BE INCLUDED IN W. D. FLATT'S CHICAGO SALE, AUG. 7TH. (See Gossip, page 120.)

Not be Led.

og-raising in the Wallace Farmer. they will. They g hogs that have their good looks quite true that an merit. Breed- cate the farmers, l by them, and if raise pigs for the muscle, activity, feeding that the ch to put a solid e which the breed-

rs of all kinds of ys looking at the e breed what the rs want the right ess is on a sandy rs fat pigs. Send that are deficient in get-up and get- on prizewinning, for substance of w pigs on the scale ell you don't buy at scale. Either keep it for show eders don't do this, gray, brown, black, color of hogs that g vitality. They South if they can ur firm conviction of the Poland-China but in the breed- confidence of the at the poorer farm- nk they want, but nt and which the her they think so

opinion that the verdict of breeders on the day of sale will be that these Canadians, in conformation and quality, measure well up to the standard of the best that are produced in any country, while their breeding is in the purple, being descendants of the best of imported ancestors from the home of the breed.

An inspection of the cattle and a review of their pedigrees and description in the catalogue shows that Mr. Flatt, in his breeding and selections, while recognizing and fully appreciating the undoubted value of the best individuals among Scotch-bred cattle in the evolution of the most approved type of Shorthorns of the present day, has shown the courage of his convictions, gained by personal observation of British and Canadian herds and showings, which are that the best individuals are not as a rule produced by a slavish following of narrow lines of breeding, but by a judicious blending of the blood of the best obtainable of all good sorts. It was on this principle that the late Mr. Cruickshank proved his genius as a breeder in producing the type of cattle which brought him fame and fortune, and though in the latter days of his breeding operations, by force of a combination of circumstances, he was led to confine himself to narrower limits, it is an open secret that with all his extraordinary intuition he had reached a point where he was perplexed by these limitations, feeling that a new departure was needed if the individual excellence of his cattle were to be maintained. But it remained for others, ardent admirers of his life work, but with a freer hand, to make the move it was well understood his ripe judgment would have approved, and the satisfactory result may be plainly seen in the character of the cattle that are winning in the British show-yards of to-day, and in the magnificent collection listed for the Flatt sale, in which size,

The Ever Popular Horse.

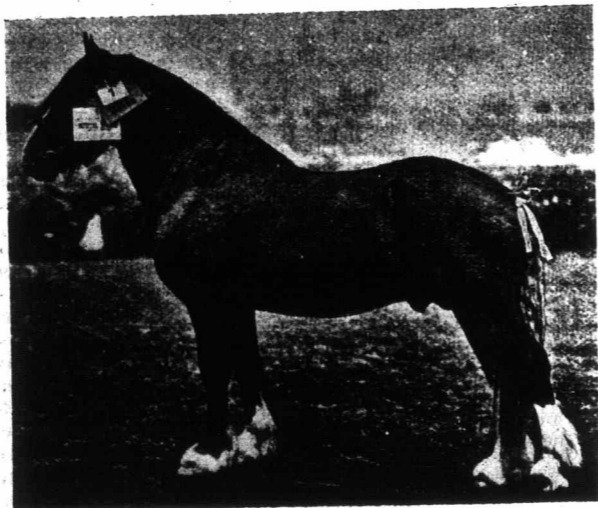
The Chicago *Horseman* says: "As many as 40,000 were out last Saturday to see the Derby, which prompts the daily *Journal* to sagely remark that the time will never come when one-tenth as many people will be attracted to see horseless carriages race for any sum, however large. The annual parade through Grand Boulevard and Washington Park was the most gorgeous of any that have taken place. The array of fine horses was beyond question larger and better in every way than any that have preceded it. Those who imagine that the horse has lost one whit of his popularity would have come to their senses had they seen it. Now and then a wheezing, rattling automobile broke in upon the beauty of the spectacle, driver and occupants running a two-mile gauntlet of derisive jeers. The presence of the machines only served to emphasize the nobility of the horses with which they mingled."

Barley Meal as a Pig Food.

Barley meal is *facile princeps*—in other words, "admitted chief"—as a food for pigs. As is well known, however, it is not advisable to employ for pigs or any other variety of stock any particular food by itself; mixtures always give better results than single foods alone, no matter how excellent such foods may be. For the production of pork of the best description there is nothing better than a mixture consisting of two parts of barley meal and one part each of pea meal and wheat meal; these to be given in conjunction with cooked potatoes or other foods to supply the necessary bulk. *Farmers Gazette.*

Our Scottish Letter.

The great events of the past fortnight have been sales of Shorthorn cattle in England, and the Agricultural shows at Edinburgh and York. Fortunately, the plague of foot and mouth disease has been stayed, and no further outbreak has been reported for some weeks. The disease is still raging in the Argentine, and all importations of live cattle from that quarter have for weeks past been prohibited. South American cattle owners were much in evidence at York, and indicated that in the South American republic they made no attempt to stamp out the disease; such a policy would be hopeless; they simply let it run its course. Great Britain and Ireland are fortunately situated for stamping out disease when it appears, and preventing its importation. The policy of the Board of Agriculture in this has been fairly successful, and it is gratifying to think that we have had no outbreak of cattle disease



BARON'S CROWN.

Two-year-old Clydesdale stallion. First at Castle-Douglas, Edinburgh, and the Royal Show, 1900.

in Scotland for many years now. The recent outbreaks have all been scheduled in the south-east of England, and especially in the grazing and non-breeding county of Norfolk.

The boom in Clydesdale horses does not seem to be very lively, and we expected to have seen more buyers before this date. Several, however, have now arrived, and there is likely to be a little trade done. Mr. Neil Smith, Brampton, Ont., is sailing to-day with a few well-bred animals, and Mr. Ness, from Howick, Que., with Mr. Black, has arrived. Mr. N. P. Clarke, the noted breeder in Minnesota, has also entered an appearance, so that there will be some trade done before the season is over. The Hackney boom has also slackened off, and alike in England and in Scotland nothing exciting is taking place.

THE ROYAL SHOW.

The show at York had a good tone about it, but it was not in the horse department that life was specially manifested. The best section was that for Hunters, but the best horses there came from Ireland. Yorkshire is a very hilly county, and it is also the greatest county in England, being in extent very nearly the size of Scotland. It is the home of three distinct types of horses—the Cleveland Bay, the Yorkshire Coach horse, and the Yorkshire Hackney, which differs a little in type from the Norfolk hackney. The Cleveland Bay was almost extinct as a breed when the show last visited York in 1883. The breed then only mustered one representative—a solitary stallion; this year they made quite a good display, and were numerous represented. This revival is undoubtedly due to the founding of the Stud Book and the patronage of several wealthy gentlemen, notably Mr. H. C. Stephens, M. P., of Cholderton, Salisbury, Wilts., a long way from Yorkshire. Considered in themselves, the Cleveland Bays can hardly be regarded as ideal horses. They are well colored, having consistently bay-colored bodies and black legs, they have considerable weight of bone, and sound feet and pasterns, and they move fairly well, but do not appear to have much action or great speed. They have long bodies, which characteristic tends to make their quarters and neck seem short, and many horses have heads which suggest greater brain power. As chariot horses in the old days before railways were in vogue, they counted, being strong and stout and able for heavy work, but unless they can be utilized now, as factors in making weighty brougham horses by being crossed with the Hackney, or in making heavy-weight hunters by being crossed with the Thoroughbred, it does not appear that they can be of much value in themselves. In some respects their shapes suggest that the Cleveland Bay has been largely employed in the breeding of American coach horses, and for a time the Americans bought them pretty freely. It is understood that capital hunters have been produced by crossing them with the Thoroughbred.

The Yorkshire Coach horse is a Cleveland Bay, modified by a Thoroughbred cross. As seen at the Royal, they are less bulky and pithy than the Cleveland Bay, but they exhibit greater quality, and are well colored horses, with long, flowing tails, which they carry in an attractive way. The style of these horses is undoubted, but their weight was disappointing. We expected to have seen more hand-

some, upstanding horses than were in evidence at York, and after looking at them, it is more impressed on our minds than ever that the Hackney, if wisely looked after, has in him the possibility of making the best carriage horse in the world. But the 14.2 animal must be discarded, and so must also be the theory that the Hackney is a saddle horse and should be bred for riding shoulders. Our observation is that the men who speak about the Hackney being a saddle horse are men who do not ride. The action of the Hackney is seen at its best in leather, and the sooner the idea that he is the universal light-legged horse is abandoned the better.

The Yorkshire hackney differs a little from the Norfolk cob, but mainly in respect of quality of bone and sweetness of formation. It is not a distinction in respect of type so much as in respect of taste. The Yorkshire man wants fineness and wearing quality, the Norfolk man likes a bit more substance, and usually he has a bit more hock action. The Yorkshire man can give you plenty sensational action in front, but when all is said the majority of harness show horses amongst Hackneys have come out of Norfolk. The hock action of some of these horses tracing from D'Oyly's Confidence 158 is remarkable, and you can scarcely see this action without finding Confidence blood in the pedigree. These views are regarded as extremely heretical in certain quarters, but without hock action, the extravagant front action of the Hackney is of small value in getting to market. The champion Hackney stallion at York is named Bonny Danegelt and was got by the champion Royal Danegelt out of Dorothy 185, by Denmark 177. His breeder and owner is Sir Walter Gilbey, Bart., who has written much on the subject of horse-breeding. Mr. George Wilson, Cedar House, Garton, had the reserve with the young horse Rosador, a son of the champion Rosador. The champion mare was Mr. Harry Livesey's lovely Orange Blossom, by the fine stallion Connaught 1453; Mr. Henry Moore taking reserve with the filly Lobelia.

Cattle of all classes made a creditable display both at Edinburgh and the Royal, and there were some curious reversals of form between the two shows. *Shorthorns* at Edinburgh were championed by a good two-year-old heifer owned by the Earl of Rosebery, K. G., which came far from getting to the top at the Royal. She is a good roan specimen, but rather faulty behind. The champion bull in the Shorthorn class at the Royal was Her Majesty the Queen's Royal Duke, a wonderfully level, well-fleshed animal, with a grand coat and good frame, but not too attractive about the head. He was also champion at the Royal Dublin show in spring. The reserve was H. R. H. the Prince of Wales' Pride of Collynie, which stood second in the class to Royal Duke, and deserved his honors. The Queen bred her own bull from Scottish blood, but Pride of Collynie was bred by Mr. Duthie, and was the best bull of his age in Scotland last year when owned by Mr. James Durno, Jackstown, Rothie-Norman. He was first at the Highland, and was there bought for the Sandringham herd by Mr. Beck, the Prince's manager. These are a pair of prime young bulls, and it would take a deal of money to buy them. The female champion of the breed came all the way from Cornwall. She is Mr. W. J. Hosken's Countess of Oxford XIV., a strikingly handsome red cow with a splendid head, good back and ribs, and great bag of milk. Her bull calf, New Year's Gift, was second in the yearling class, and had been first no one would have been robbed. The reserve female champion was Mr. Joseph Harris' Empress XII., from Calthwaite Hall, Carlisle. She was first amongst the three-year-old heifers, and is an amazingly sweet, level, red animal, showing true feminine character in the head, beautifully ribbed, and just a shade faulty at the tail, root, or she could not be beaten at all.

There was a really good show of other breeds of cattle. The Highlanders were out in force, and there was no breed more admired. They excelled in their walking gait, going over the ground with a long, stately tread which left nothing to be desired. They could teach all other breeds how to walk. The Earl of Southesk had the male championship with the Enstly bull, Laoich, a magnificent yellow, which has never been beaten; and the champion female was a three-year-old heifer from the celebrated fold of Mr. T. Valentine Smith at Ardtonish, in Argyshire, which stood second at the Highland last year.

Aberdeen-Angus cattle are rapidly extending their domain in England, and the show of these was first-class. The leading prizes, however, came to cattle bred in Angus. Three of the bulls in the older class, the first, second and fourth, were bred by Mr. Patrick Chalmers, of Aldbar, Brechin, and got by the bull Enthusiast of Ballindallock. The third was the bull Rosador, bred at Ballindallock, and owned by Mr. Dyson Perrins, of Ardross, in Ross-shire. The first and second were respectively champion and reserve champion of the breed, and they are full brothers. The first, Diaz, owned by Mr. W. S. Adamson, of Careston, is the younger of the two, and a very fine specimen of the breed, except that he is a shade square across the hind quarters. The second, Delamere, owned by Mr. Alexander McLaren, Auchmaguie, Bullinbrig, is a very fine bull and a great favorite. He is a bit older than his brother, and has done some winning in his time. He has also given great promise as a breeder. The fourth bull, Mr. Bainbridge's Amesley, was champion at Edinburgh. Sir James Duke, Bart., a Sussex fancier of the breed, had the first and

second yearling bulls, of his own breeding, and the Earl of Strathmore had the first and second yearling heifers; while the first two-year-old heifer, Sabrina of Hayston, owned by Mr. Bainbridge, was bred by Mr. James Whyte in the same county of Angus or Forfar. She was first at Perth in spring.

Galloways gave a capital account of themselves, and the prizes in this section were extremely well distributed. No exhibitor got more than one first prize, and none of the old-time men were in front, new men getting a look in with excellent cattle. These were Messrs. Henry Graham, Quarryhill, Wealsgate, Cumberland; David Brown, Lower Stafford, Auldgrith, Dumfries; Robert Jefferson, Rothersyke, Egremont, Carlisle; R. T. Scott, Drumhumprey, Corsock, Dalbeattie; and Robert Wilson, Kilquharrie, Dalbeattie. The quality of the Galloways was excellent, and they deserved their popularity. "SCOTLAND YET."

Determining Age of Stock by Dentition.

Nowadays, when early maturity is being so much cultivated in the case of all breeds of stock, the dentition of farm animals shows much more variation than was usual in the old days, when animals were not forced to a finish at anything like the high rate of pressure which has of late years been indulged in. One of the consequences of this high-pressure system of feeding has been that the leading show-promoting bodies—such as the Smithfield Club, the Royal, and other agricultural societies—have found it necessary to lay down special rules for the determination of the ages of such animals as are exhibited at their shows. The Royal Dublin Society, in common with the other leading agricultural bodies, has found it necessary to adopt certain regulations in this direction. We append herewith details of "tooth marks" which will be considered as indicating the ages of cattle, sheep, and pigs at the forthcoming winter show at Ballsbridge:

CATTLE.

Cattle having their central permanent incisors cut will be considered as exceeding one year and six months.

Cattle having their central permanent incisors fully up will be considered as exceeding one year and nine months.

Cattle having their second pair of permanent incisors fully up will be considered as exceeding two years and three months.

Cattle having their third pair of incisors cut will be considered as exceeding two years and eight months.

Cattle having their fourth pair (corner) permanent incisors fully up, and their anterior molars showing signs of wear, will be considered as exceeding three years.

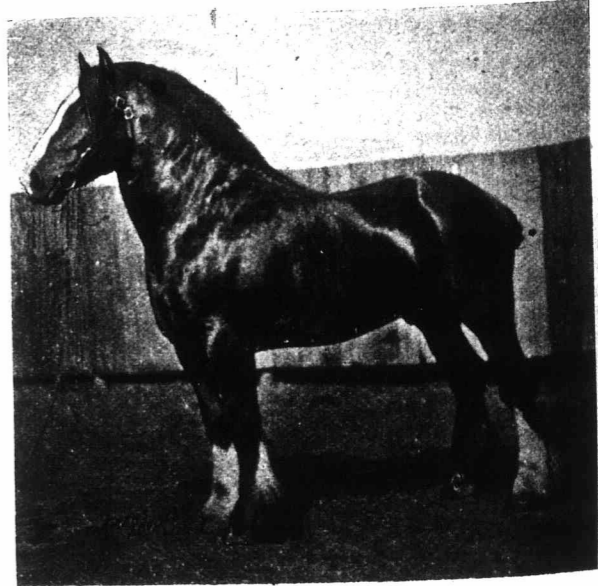
SHEEP.

Sheep having their central permanent incisors cut will be considered as exceeding ten months.

Sheep having their central permanent incisors fully up will be considered as exceeding twelve months.

Sheep having their third pair of permanent incisors cut will be considered as exceeding nineteen months.

Sheep having their third pair of permanent incisors fully up, and the temporary molars shed, will be considered as exceeding twenty-four months.



CLYDESDALE STALLION, MCBAIN [2270].

OWNED BY JOHN R. RANKIN, MELROSE STOCK FARM, HAMMOTA, MANITOBA.

Sheep having their corner permanent incisors well up, and showing marks of wear, will be considered as exceeding three years.

PIGS.

Pigs having their corner permanent incisors cut will be considered as exceeding six months.

Pigs having their permanent tusks more than half up will be considered as exceeding nine months.

Pigs having their central permanent incisors up, and any of the first three permanent molars cut, will be considered as exceeding twelve months.

Pigs having their lateral temporary incisors shed, and the permanents appearing, will be considered as exceeding fifteen months.

Pigs having their lateral permanent incisors fully up will be considered as exceeding eighteen months. *Farmers' Gazette.*

Sheep at the Royal Show.

SPECIAL NOTES.

The representation of sheep at the Royal Show, at York, will rank as one of very considerable merit and high quality, and it is very gratifying to be able to say that very many of the pick of England's best have been secured for Canadian and American flocks.

Leicesters.—Of this breed, there were thirty-nine entries in five classes, which were throughout all breeds, except where otherwise stated, for two-shear rams, yearling rams, three ram lambs, three yearling ewes, and three ewe lambs. We have seen this breed better represented in the yearling ram class; but for old rams and yearling ewes the entries were of very high merit. Mr. G. Harrison won the champion prize of the breed with a wonderfully symmetrical ram, which was first at last year's Royal, at Maidstone, a ram thoroughly typical of his breed, as were the whole of the entries. From his specially well-bred flock, Mr. E. F. Jordan came in for premier honors in yearling rams, and was also, besides other minor honors, second and R. N. for champion with a particularly good two-shear ram. Another very excellent flock provided the winning pen in the ram lamb class, namely, Mr. J. J. Simpson's.

Cotswolds.—This breed made one of the best exhibits it has done for some years, the feature of the classes being not so much their numbers (for these only amounted to twenty-two for the five classes), but its high and characteristic merit, more especially those uniformly excellent entries from the world-renowned old flock of Messrs. R. & W. T. Garne, who led in four out of the five classes, the only one wherein he did not win being that for yearling rams, whose winner came from Mr. Russell Swanwick's, a flock whose repute is of the highest, and whose winner was a particularly grand type of a ram, though Messrs. Garne, who came in for second honors, pressed him very close indeed. A word of commendation is justly due to Mr. W. Houlton for the excellence of his exhibits, more especially in the ewe class, wherein he secured the second prize.

Lincolns.—An entry of fifty-six was made in the six classes open to this breed, the additional class being for a pen of five rams, in which Mr. Henry Dudding's noted old flock was an easy first with a pen of thoroughly typical and characteristic rams, with wonderfully even fleeces of fine wool. A very good pen, typical of the noted flock at Nocton, property of Messrs. Wright, came in for second honors, whilst a well-matched and grand pen of Mr. Tom Casswell's came in third, being closely pushed by a most typical and evenly-matched pen, both in regard to size and character, from Mr. J. E. Casswell's. A class of five old rams was a first-class one, Mr. Tom Casswell's old flock being rightly placed in the first place with a remarkably grand ram of fine masculine character and type. Messrs. G. E. Dean & Sons were second with a ram whose merit and quality was thoroughly typical of their noted flock. The yearling ram class was a grand one, but its winner was outstanding, being a ram of the highest merit, perfect symmetry, and having an excellent fleece. This ram came from Mr. H. Dudding's flock, and won the champion prize of its breed, being accounted by many present as being fully equal to that noted ram from the same flock which occupied a similar place, and which, sold two years since, realized no less than \$5,000. Next him came a grand ram with splendid head and even fleece from Messrs. Wright, of Nocton, whose second exhibit also filled fourth place, thus proving the high excellence of this flock, which secured second and fourth in so large a class. The third-prize ram came from Mr. Henry Dudding's flock, and is specially deserving of notice, from the fact that he was of very high merit, particularly in respect to his grand fleece. Space will not permit details being given of those more than excellent pens from the flocks of Messrs. J. E. Casswell, J. Pears, and H. Smith, which secured barren honors. In yearling ewes, a pen of the highest merit and quality—which, by-the-by, are coming to Canada—won hands down for Mr. Henry Dudding, Messrs. Wright's wide, deep and fine pen being a good second, beating Mr. H. Dudding's second pen because they were rather more evenly matched, though, taken ewe for ewe, we should have preferred the third-prize pen. Typical pens from Messrs. J. Pears and G. E. Dean & Sons were also noticed by the judges, as they were worthy deserved to be. Messrs. Wright were first for both ram and ewe lambs, though it is quite possible that in the latter class some judges would have preferred the grand pen of Messrs. S. E. Dean & Sons, who came in second and third. A very useful pen of ram lambs from Mr. J. Pears' flock, were placed second, this pen having very fine masculine character and type.

The Oxford Down breeders are to be congratulated upon the all-round good display they made, Mr. J. T. Hobbs winning in both the old ram and shearing ram classes with very high-class rams, the shearing ram more particularly. Mr. J. Tread-

well's old flock went second in the old ram class with a ram of good masculine type and symmetry, whilst this same exhibitor came in third in the shearing class with a ram of specially high merit and good fleece, the second place in this class being filled by a grand ram of excellent character from the well-known and highly-reputed flock of Mr. H. W. Stilgoe. Mr. J. C. Eady had a pen of highly meritorious rams in this class, and secured no more than they deserved by being placed R. N. and C. In the shearing ewe class, this latter exhibitor, as has been the case for the past three years, easily secured both first and second awards with six ewes of the grandest merit and type. Mr. W. J. P. Reading was easily to the fore for ram lambs, and Mr. W. A. Treweeke took a similar position for ewe lambs which give great promise of future excellence.

Shropshires, in six classes, one being given it for five yearling rams, made an entry of 105, of which 85 were present. As a whole, there was scarcely a more uniform or even section of sheep in the show, and it must be a real satisfaction to the breeders of this variety of sheep to find so very large an entry and one of so high an average of merit present. The old ram class was a thoroughly good one, Mr. R. P. Cooper taking precedence with a fine ram of excellent merit, bred by Mr. D. Buttar; Mr. A. E. Mansell closely following him with one bred by Mr. J. Bowen-Jones, which was of a real grand type and had a most typical head. A large number of other breeders both in this and the following classes of this breed were noticed by barren honors; in fact, but a very small percentage of the large entry failed to secure the notice of the judges in some degree or other. Mr. A. E. Mansell, who owns one of the best and most typical flocks of this breed, showed the high merit thereof by reason of his great victory in a wonderfully strong class of yearling rams, as both first and second prizes went to sheep of his breeding, which were typical of the breed in the highest sense of the term. An almost equally good ram from Mrs. M. Barrs secured third honors, and one from Mr. R. P. Cooper's flock filled the R. N. Again, in the pens of five yearling rams we found an exceptionally grand entry, and the pen

a grand all-round good ram; and one of H. R. H. the Prince of Wales' was R. N. His Royal Highness in the yearling class secured second honors, as the sheep were placed by the judges, but ought really to have gone first, for the Sandringham ram beat the other one hollow in walking and in other respects, the winner being a ram bred by the late Mr. J. J. Colman and exhibited by Mr. Jeremiah Colman, which was of good quality in respect to flesh and fleece, but could not move as a ram should do. A moderate sheep of Mr. Courtauld's came in for third honors, and a typical ram of high quality from Mr. C. R. W. Adeane's flock was R. N. The yearling ewes were a class of high merit, and the Earl of Cadogan's pen, which have won at most of the shows during the present year, led the way once more, though that most excellent pen of the Pagham Harbor Co.'s which came in for second honors were considered by many breeders their superior in respect to type, character, and heads. The ram and ewe lamb classes were not strong; in fact, there exists very great difficulty in finding good ram lambs or ewe lambs of this breed this year. Mr. C. R. W. Adeane led in ram lambs. Col. McCalmont came in for second honors with lambs more masculine and better developed. Mr. Whitaker Wright led in the ewe lamb class with an exceptionally fine pen of young lambs, but the other entries were of no special merit.

Hampshire Downs.—An entry of sterling merit was made by this breed, whose breeders are, perhaps, the most energetic lot of men for pushing their breed abroad, as will be seen by their advertisement that regularly appears in this paper. The old ram class was a thoroughly good one, more especially the two rams that won first and second honors respectively for Messrs. Carey Coles and J. Flower, two of the foremost breeders of this grand breed. The yearling ram class was one of the largest and best we have seen of the breed for many years, and though by the judges' award Mr. J. Flower was placed second, there was a pretty general consensus of opinion that his ram was more typical and of better quality than the ram to which premier honors and championship went, which came from the flock of Lord Rothschild's, a flock which, we may remark, is one of great merit and quality. Mr. R. W. Hudson's ram was third, and he will be heard of in your country in the autumn fairs. He has merit, type and quality. Mr. J. Flower without doubt was clearly right in being placed first and second for ewes. Which of the two pens was best would be hard to say, they were all grand ones. Mr. Hudson here again came in for third honors with a grand pen, but a bit overfed. The ram lamb class was one of especial merit, more particularly the pen which won first for the Earl of Carnarvon, and that which took second for Mr. J. Flower. Both of these pens were so excellent and even that it was really a hard matter to tell which ought to have been first. A most typical and valuable pen from Mr. T. F. Buxton's flock came in for third honors, a position to which their grand character and even merit fully entitled them. Mr. J. Flower secured deservedly the first prize in ewe lambs with a grand pen, the Earl of Carnarvon being again very close up as second, and a grand even pen, with good conformation and symmetry, from Mr. Carey Coles, secured third honors.

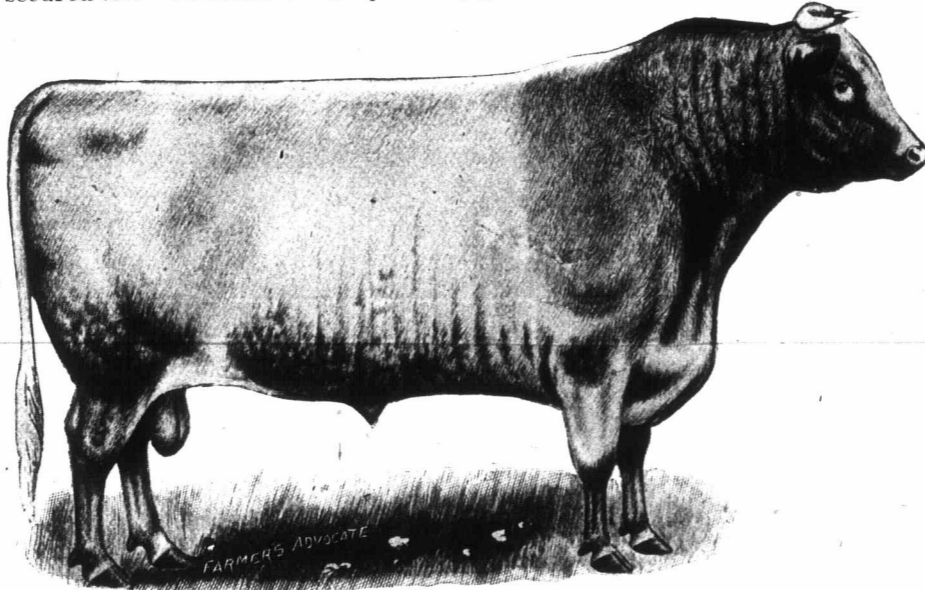
Suffolks.—This is a breed not largely known in your country, but one which produces very excellent mutton. Their entry was most typical of their breed, and of high merit. The Earl of Ellesmere was the principal winner.

Border Leicesters.—A grand entry was made by this breed, and we feel sure that those who are interested therein could not but be most satisfied with its large and full classes of so high an average of merit. In the older classes, the Right Hon. A. J. Balfour, M. P., took premier honors throughout, though his entries were strongly pressed for their position in the yearling ram classes by two grand rams from Mr. J. E. Nicholson, the best of which was certainly very close up if not better than the winner, having more scale and better rumps. Mr. J. Twentyman led in a good class of ram lambs, and Mr. McIntosh took similar honors in the ewe lamb class.

Wensleydales are another breed of sheep not much known in your country, but one which produces mutton and wool of very high-class merit. The entry was thoroughly typical of the breed, and of high quality and merit, the leading winners being the executors of Mr. T. Willis, Lady Henry Bentick, W. Cleasby, and Jas. Rhodes.

Kent or Romney Marsh.—This is one of those breeds which, if it were tried in your country, would be of great value, especially in marsh lands. Its merits are great hardiness and freedom from fluke or foot rot. The entry, for which only classes for yearling ewes and rams were provided, was a first-class one, Mr. F. Neame and Mr. A. Amos won for rams, and Mr. W. Millen for yearling ewes.

Dorset Horns.—This breed, in its two classes, made a moderate entry only, Mr. W. R. Flowers winning for rams, and Mr. L. C. Attrill for yearling ewes.



JUDGE =23419= 131238.

Champion Shorthorn bull at Winnipeg Industrial Exhibition, 1898. PROPERTY OF HON. THOMAS GREENWAY, CRYSTAL CITY, MANITOBA.

which won first honors for Mr. P. A. Muntz, M. P., were, especially three of them, rams of the grandest character, and were particularly noticeable on account of their scale and masculine type. Next them came another well-matched and typical pen, from Mrs. M. Barrs' flock, which were in every sense worthy of the honor accorded them. A lengthy and very typical pen from Mr. W. F. Inge secured the third place in this strong class, and Mr. David Buttar, with one of the best matched pens in the same, came in for R. N. Their place would have been higher up had they been better in their skins. A strong class of ram lambs from Mr. A. E. Mansell's flock was again to the fore with six excellent lambs, this breeder securing the first and second places. Their equal certainly would be hard to find. A very true and well-matched pen of Mr. P. L. Mills' was R. N. This latter breeder should have won in the yearling ewe class, as his pen was one of the best and most typical we have seen for some time, but the judges thought otherwise, and this ideal pen was placed second to a pen of very high merit and quality from Mr. W. F. Inge's flock, Mrs. M. Barrs again coming in for the third award. The ewe lamb class formed a very counterpart of Mr. P. L. Mills' excellent pen of yearling ewes, mentioned above, in his pen of lambs placed at its head, an honor their great merit fully entitled them to, Mr. A. E. Mansell being second, and Mrs. Barrs R. N.

Southdowns made an entry of high merit and quality, and it was generally considered that in the judging of the yearling ram class the awards were not entirely in accord with what they should have been, as there were many high-class and meritorious sheep left out in the cold. Mr. C. R. W. Adeane led in a good class of old rams, winning also the led in a good class of old rams, winning also the championship of the breed with a fine typical ram of the breed; the Pagham Harbor Co. coming in for second honors with a stud ram of the highest merit,

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Cheviots.—The entry of this breed was larger and better than we have seen at the Royal for many years. Mr. John Elliot won in both ram classes with especially grand specimens of the breed, whilst Mr. John Robson did the same for yearling ewes.

Black-faced Mountain.—A grand display of this breed was made, its picturesque character and long wool making it one of the most interesting classes of the show. The best flocks being included in the entries, great interest was taken in the judging by those who are interested in this breed. The executors of T. Dargue won in the old ram and yearling ram classes, and Mr. J. Vickers in that for the yearling ewes.

Herdwicks made a small entry of three, which were typical of their breed; and the *Welsh Mountain* breed were most creditably represented.
W. W. C.

Golden Lad.

IN-AND-INBREEDING.

The Jersey bull, Golden Lad, was undoubtedly a great sire; there have been and are upon the Island just as good. It must be remembered that he stood for service on the Island longer than any other bull, and was owned by a gentleman, Mr. Francis Le-Brocq (a "cattle merchant," as the dealers are called here), who had excellent opportunities for inducing the farmers to use him. I am told many a close trade was settled by giving the service fee of his bull, who, it must be confessed, was never a popular show bull. However, that was nothing against him as a breeder; I mention it to show that his popularity as a show bull in the beginning was owing more to circumstances than personal attractions. However, he was out of a good dam to begin with. His chief merit as a sire was in getting good fore udders, and this accounts for his daughters being so successful in the showing.

I have always complimented the Island breeders on their common sense in not getting Golden-Lad crazy. Even now there is little or no difference in the price of Golden Lad blood over any other good family, except in a few cases. They do not follow any particular family or breeding to any extent—at least not to the extent of in-and-inbreeding, as we so often do at home, on the principle that you cannot have too much of a good thing. The absence of this theory on the Island has, I believe, been the salvation of the race.

I always regret to see here any tendency toward in-and-inbreeding. I am positive we have made some awful mistakes in America and Canada in the style of breeding so universal there. It comes about principally from our extensive habit of tabulating pedigrees. I must admit that the name of Golden Lad twice in a pedigree looks to most people twice as attractive as seeing it there but once, and some of us are not satisfied with this, but must breed a double grandson of Golden Lad to a daughter or double granddaughter of Golden Lad. This is simply tabulated pedigree breeding business and has no sound principle of breeding to sustain it. It builds up a beautiful-looking pedigree, and usually produces an ugly-looking specimen of a cow.

I say this because I feel personally responsible for the introduction of Golden Lad blood into America, and I still say all I ever claimed for it—that it should remedy a very general defect in the conformation of the udders on our side; but I want to put in this counter-plea now, because I see the tendency at home is to "go in" for Golden Lad blood, as we have for some other families.

Many of the letters I receive at home ask for sons or double grandsons and daughters of Golden Lad. That is, in some cases, the only stipulation, which means that the owner would rather have an inferior double grandson or daughter of Golden Lad than a better animal at the same or less money. I don't presume anyone would admit this. I mention this to show the tendency of some of our people at home who go in for pedigree breeding regardless almost of merit, and entirely regardless of results beyond the looks of the thing on a tabulated sheet.

I have lately witnessed two examples of breeding for improvement that demonstrate what I have so often pointed out in the *Jersey Bulletin*—i. e., the great Cruickshank family of Shorthorns in Scotland and the great Jersey herd of Lord Penbrook in England; their principle in breeding has been the same. This celebrated family of Shorthorns to-day outclasses the Bates and Booth, and brings the highest prices. The originator, a Scotchman, came to England and bought a good cow wherever he found her—Bates or Booth, or whatever she might be—pedigree was a minor consideration. He took them home and has selected and bred on this principle until, as I said, he has the grandest Shorthorns in the world. Other men went in for Bates, others for Booth pedigree! pedigree! If he was a Booth man he paid £500 for an inferior Booth sooner than £100 for a superior animal that was not a Booth. Where are the Booth and Bates pedigree builders to-day? They are no longer in the race with a Scotch farmer who breeds to a good Shorthorn.

Lord Penbrook has accomplished the very same thing in the very same way in breeding Jerseys. He can show the best herd of Jerseys in the world bred by the owner. Let those choose pedigrees who will; take my advice, if you are a beginner, and how out your own line. I speak from years of experience and very extensive observation. *F. S. Park, in Jersey Bulletin.*

To Tell the Age of a Horse.

To tell the age of any horse.
Inspect the lower jaw, of course.
The six front teeth the tale will tell.
And every doubt and fear dispel.

Two middle "nippers" you behold
Before the colt is two weeks old.
Before eight weeks, two more will come;
Eight months, the "corners" cut the gum.

Two outside grooves will disappear
From middle two in just one year.
In two years, from the second pair;
In three, the corners, too, are bare.

At two, the middle "nippers" drop;
At three, the second pair can't stop.
In four years old, the third pair goes;
At five a full new set he shows.

The deep black spots will pass from view
At six years, from the middle two.
The second pair at seven years;
At eight, the spot each "corner" clears.

From middle "nippers," upper jaw,
At nine the black spots will withdraw.
The second pair at ten are white;
Eleven finds the "corners" light.

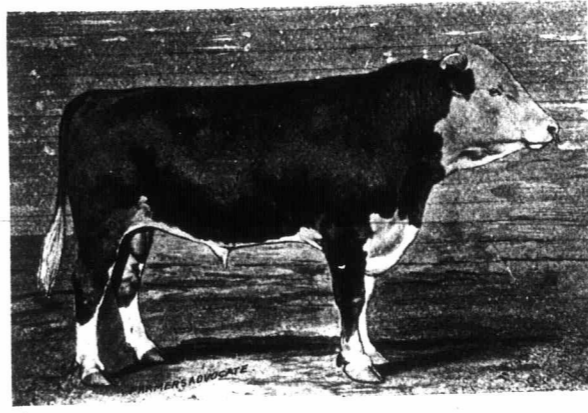
As time goes on, the horsemen know,
The oval teeth three-sided grow;
They longer get, project before
Till twenty, which we know no more.

King's Co., P. E. I.

P. D. BOWLEN.

The Fat Cattle Trade.

A Western Ontario cattle exporter, recently returned from England, reports that not only are prices very much improved this season, but likewise the quality of cattle going over from Canada. The steamer on which he went across carried over 750 head of beefs, said to be one of the best shipments yet received at Liverpool. Good, well-finished 1300 or 1400 lb. cattle are the right sort to make money. The admission of Argentine cattle to Britain was now absolutely prohibited, and from enquiries made, he could not learn that there was any hope whatever of the embargo against Canadian stockers being raised, and he doubted if it would be a good thing for Canadian stock interests even if it could be done. He attended the Royal, at York, and



YEARLING HEREFORD BULL, REX OF INGLESIDE.

PROPERTY OF J. E. MARPLES, DELEAU, MANITOBA.

found it a grand show, except in point of attendance.

Mr. A. Zollner, of Newcastle-on-Tyne, and John Scott, a local cattle dealer, shipped from Listowel, Ont., on July 9th, 102 cattle for England. They comprised some of the finest export cattle that have ever been shipped from the district. Mr. Zollner will ship between 300 and 400 more in a few weeks. He has also shipped nearly 2,000 cattle from the Wellington and Waterloo districts.

Calf Feeding.

The dairy cow should never suckle her calf for more than three days. Some advocate taking the calf away as soon as dropped.

It should be remembered, however, that the power to give milk is the result of stimulation and maternal instinct. It frequently happens that the calf is unable to consume all the milk produced immediately after it is dropped. The result is a portion is left in the udder. This, of course, produces inflammation and other troubles of this organ. It fails to stimulate the activity of the milk gland to its utmost capacity, and soon results in a deterioration of the milk flow and a loss of the natural inherent secretory function of this organ. The cow should be milked out each time after the calf has had a moderate supply.

After the third day, take the calf away and feed for two weeks or so on whole milk, then on warm skim milk and adjuncts, chiefly flaxseed gruel. The milk must be fed at animal heat, between 98 and 100 degrees Fahrenheit. The calf should early be taught to eat a mixture of dry meal and fodder. In the dairy, the object is a rapid growth of muscle, but not fat. Equally good calves can be grown on skim milk and adjuncts as on whole milk, and at much less expense when properly managed. The calves should be handled constantly from the beginning to make them gentle. Handle the udder parts in the heifer, and thus stimulate the flow of blood to these parts, directly increasing the activity of the glands and developing the milk-producing organs to the fullest extent. Breed at about eighteen to twenty months, so that the calves may

be dropped at from twenty-seven to twenty-nine months. Breeding too young is detrimental to the mother, for she cannot develop properly and support a fetus at the same time, and a stunted heifer will make a cow deficient in stamina.

The calf should first be thoroughly licked by the dam. This clears the skin of effete matter and materially aids the circulation. It is very important that this be done, as the calf is in a weakened condition, and this aids in the development of its strength. After it is done, the calf may be removed without suffering. In all instances, it should receive the first milk of colostrum. This contains properties that are purgative in nature, and clears the alimentary canal of materials that otherwise might cause congestion of the various digestive organs. If you remove the calf from the dam as soon as dropped, and fail to give the colostrum, disastrous results may follow. In glancing at the composition of colostrum milk, it is seen to be comparatively low in water, high in solids, abnormally high in casein and albumen, low in sugar and high in ash. It is thus especially adapted to the needs of the young and growing animal.

Those who have handled calves have been astonished by the rapid growth and strength displayed by young animals several days after birth. The colostrum milk is the best means of providing the animal with the requisite food for growth and development. This matter must therefore receive due consideration when weaning calves and raising them by hand. Calves may be taught to drink from the pail by manipulation with the fingers, but the calf-feeders—tin pails or cans with rubber teats—are better, provided they are kept scrupulously clean. The muscular act of sucking induces a flow of saliva that aids digestion. The calf will then suck quite as readily as from the udder of the cow. This prevents its gorging itself and producing scours and other intestinal troubles. Should these result from careless feeding, they can be remedied by the addition of lime water and by feeding in such a manner that the animal will have to take the milk slowly, so that it will become thoroughly mixed with the saliva and other digestive juices and properly assimilated.

Stock Judges at the Winnipeg Industrial.

The live-stock judges at the Winnipeg Industrial are as follows:

Light and Heavy Horses.—J. A. Craig, Professor of Animal Husbandry in the Agricultural College, Ames, Iowa.

Beef Breeds of Cattle.—John Davidson, of Ashburn, Ont.

Dairy Breeds of Cattle.—A. C. Hallman, New Dundee, Ont.

Milk Test.—C. A. Murray, Provincial Dairy Superintendent

Sheep and Swine.—Thomas Teasdale, Concord, Ont.

Bacon Hogs.—J. D. Mitchell, pork packer, Winnipeg.

Poultry.—G. D. Holden, of St. Paul, Minn.

Dogs.—John Davidson, Munro, Mich.

Dairy Products.—G. L. McKay, Professor of Dairying, Agricultural College, Ames, Iowa.

Grain.—Messrs. Spink & Horne.

Disappointing Attendance at the Royal.

The attendance during the week of the Royal show at York was the one disappointing feature of an otherwise pleasant and successful event. The city is reported to have done its best, but the country failed. Royalty, too, favored the show, the Prince of Wales visiting the grounds on Tuesday, accompanied by the Duke of York, and presiding at the general meeting of the Royal Agricultural Society; and again on Thursday the exhibition was visited by the Prince and Princess of Wales, the Duke of York and the Princess Victoria. Still the paid admissions were 35,000 below the average of the past six years, the grand total being 87,511. Roughly speaking, £3,000 is wanting to make the turnstile receipts for the week, which amounted to some £6,000 or £7,000, compare with the previous average. The greatest attendance during the period referred to was 217,980 at the Manchester show, 1897.

The Hog Fashion is Changing Even in the States.

How rapidly prejudice disappears before real merit is well illustrated in the present attitude of farm papers in regard to the breed of Tamworth swine, which was comparatively unknown in the United States five years ago. When first talked of, the breed was received with ridicule everywhere, and especially in the corn belt, where the impression prevailed that a pig of the Tamworth type was a razor-back, pure and simple. The long snout and the red color were the subject of innumerable jokes. In spite of opposition, the Tamworth was introduced by a few believers in the breed, and its merit has commanded respect, and it is now growing in popular favor. There is no doubt that the breed will prove of immense value as a cross on the too fine American swine as well as a purely bacon breed. The pig that makes the owner the most money as a breeder and a feeder is the one that will win its way to the heart of the sensible farmer, who does not care for a few white or black hairs more or less, or the lop of an ear, except so far as "points" indicate a capacity to fill the pork barrel and make money. *The St. Paul Farmer.*

FARM.

First International Good Roads Congress.

In connection with the annual festival of the League of American Wheelmen, there was also held in the City of Port Huron, Mich., the first International Good Roads Congress. The festival resolved itself into athletic competitions and other forms of jollification, but the Good Roads Congress was held for business and was participated in by men alive to the importance of the subject and ambitious to hasten the movement towards a general and successful issue. The Congress was called together and largely arranged for by Mr. H. S. Earle, Chief Consul, Michigan Division L. A. W., Detroit,

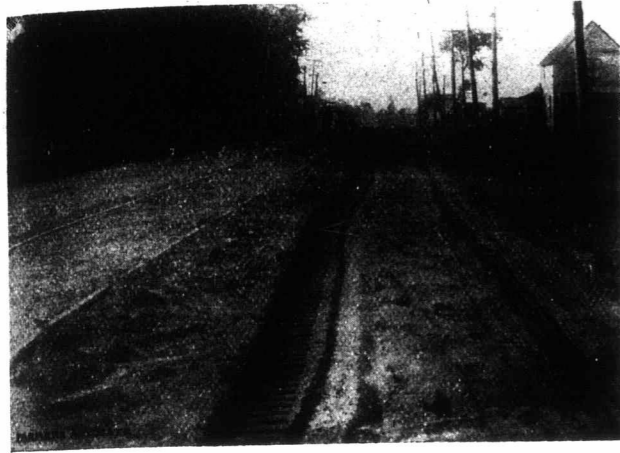


FIG. I.—SANDY STREET OVER WHICH THE MODEL ROAD WAS BUILT.

Mich. The meeting was presided over by President Martin Dodge, Director Road Enquiry, Washington, D. C. The secretary of the movement is E. C. Davidson, secretary and manager of the Roadmaker Publishing Co., Port Huron. The gathering was not large, but representative, there being present some eighty delegates from various States and Canada, the representatives from the latter country being Andrew Patullo, M. P. P., Woodstock, and A. W. Campbell, Provincial Road Commissioner, Toronto. The Congress was held on July 2nd and 3rd, the proceedings of the first day being the inspection of and instruction on a sample road under construction under the direction of E. G. Harrison, U. S. Road Expert, Washington, D. C. The road consisted of a half mile of macadam put down on loose sandy soil that is never good except after a rain and then only for light vehicles. A line of street railway occupied the center of the street, and the macadam road was put down only on one side of the track. Fig. 1 shows the condition of the street on the side not treated. The notched markings were made by the wheels of the traction engine that was used to haul the metal (broken stone) from the crusher to the road-bed. The stone crusher was at work at the end of the road and beside the railroad, where the stone had been brought by rail from farming lands some distance out. The crusher used is a modern pattern, fitted with a convex jaw so as to prevent the possibility of flat stones going through without being broken into desirable size. The stone is crushed to a size that will pass through a two-and-a-half-inch ring, and screened into three grades: coarse, one and a half inch, and fine screenings and dust.

In preparing the sandy road-bed for the material, it is moistened and rolled with a ten-ton traction roller until it is firm and uniform. There is next put down a ridge of moist adhesive clay along the outside edges of where the macadam road is to be built. The next operation is to put down four inches of the two-and-a-half-inch stone. On this a light dressing of screenings or sand is spread and moistened, and the rolling commenced. Fig. 2 shows the clay ridge on the left side of the stone, also the four inches of broken stone before being rolled. As the rolling is continued more screenings are applied until three inches have been put on. This is moistened and rolled until the spaces between the particles are filled so thoroughly that the pieces cease to creep, or move or give way before the roller as it passes over. Fig. 3 shows the portion of road rolled into this condition. When finished the road will slant a half-inch to the foot towards the ditch, and the clay ridge will be removed so that the water will readily shed itself from the surface.

After having viewed the road in its various stages of completion, the company was addressed by the road expert, E. C. Harrison, who explained that the U. S. Government does not undertake to build roads, but it dispenses information as to the proper system of doing the work, both by literature and by object lessons in various places, such as this piece of road under construction. The effort is made, not to adhere to a fixed method whereby all roads must be built, but rather to explain how to make such good roads as farmers can build with the material at hand and the finances at their disposal. It was explained that the first thing necessary is to get such drainage as will carry the water quickly away from the road-bed. An open ditch may answer if it is kept clean and has a good outlet, but a tiled ditch answers much better. The next move of importance is to secure or prepare a firm foundation. The traffic wear and weight on such a road

is enormous, so that a foundation similar to that for a building is necessary. Soil of any sort that is clay or sand is suitable, so long as it is firmly compressed, to the extent that all the tiny voids between the fine particles are pressed out. The broken stone is then put on and rolled until they are locked and interlocked to such an extent that the whole is bound firmly together. Mr. Harrison strongly opposed putting coarser stones in the bottom than those two and a half inches in diameter, as this size settles uniformly, whereas larger stones laid under this size tend to shift and work upward by the action of frost and traffic. It was explained that the top layer of chips and dust, when rolled in a moist condition forms into a waterproof roof, and after a few months becomes set similar to cement. It requires judgment to decide when sufficient material has been added and when sufficient rolling has been given, as, where the water line is only a short distance from the surface, excessive rolling causes it to rise to the road-bed in sufficient quantity to cause a weakening of the foundation. The cost of this form of macadam road varies from \$2,500 to \$2,800 per mile, according to the accessibility of material, the cost of labor and other varying circumstances. It is estimated to cost from \$1,100 to \$1,200 per mile apart from the material employed.

A programme of speeches.—The second day of the Congress was given over to a programme of addresses in the City Auditorium. Mr. Earle introduced the proceedings by a few remarks in which he expressed his pleasure at being able to address the citizens of two countries that permit the burden of teaching to rest on their shoulders. He referred to the great change in sentiment towards the question. The opposing forces of a few years ago are changing to a demanding power for faster work in good road construction than can be furnished.

President Martin Dodge, in his chairman's address, referred to the magnitude of the undertaking of making the good roads needed. He expressed a hope that there would soon be forthcoming State and United States aid, to the extent of a portion at least of the great expense necessary. The work so far has been done by localities, while a more general system and general tax is necessary. It was pointed out that a move in this direction is going forward since the Philadelphia National



FIG. II.—ROADBED WITH FIRST LAYER OF BROKEN STONE, BEFORE BEING ROLLED.

Convention and other national conventions have introduced a movement towards assisting road improvement. At the conclusion of the chairman's remarks, a number of gentlemen representing various occupations were asked to give reasons why they were interested in good roads.

The Farmer.—Mr. A. E. Palmer, Kalkaska, Mich., a dairy farmer, claimed to belong to a class not yet well educated along the line of good roads. Mr. Palmer claimed to farm for financial success, and therefore needed all the equipment necessary to facilitate his occupation. Facing the question of road improvement, we should ask ourselves not what would good roads cost, but will they pay a dividend. It was claimed that the cost of transportation is a heavy tax, and the better the condition of the roads the less will be the burden of this taxation. Since the produce of the farm has to pass over country roads on the way to other lines of transportation, the condition of the rural highway should compare favorably with the state of other lines of transportation. Such expensive roads as Macadam or Telford are rarely necessary, but a radical improvement in our roadmaking system is much needed.

Mr. Palmer contended that if country roads were put in a condition passable at all seasons, the boys and girls of the country could more easily obtain Central or High School education. Good roads, too, will add greatly to the value of real estate, and make agriculture more profitable by reducing the transportation tax. A spell of bad weather makes an unimproved road useless, whereas a proper road is practically in the same perfect condition at all seasons. In the course of his remarks the statute labor system was rather severely scored. Mr. Palmer pointed out that the average pathmaster is neither a good roadmaker nor a manager of men. Under a system of taxation and appointed road commissioners, it is not too much to expect four times as much work done as is now the case, and not only that, but what is done will be done properly, with the idea of permanency, and where a piece

of road is made this year it can be continued from there next year, instead of doing and undoing, as is frequently the case under statute labor. Among other advantages from good roads, they will serve to keep boys on the farm by making it possible for them to drive out with clean horses and clean buggies when and where they wish. Good roads will bring about free mail delivery, which will stimulate mental activity and bring more farmers into the prominence they are entitled to. Good roads will inspire farmers to improve the lawns and paint their houses and barns, which will develop a truly patriotic spirit, as well as greater culture and refinement. The result will be to transfer comfort and elegance from the city to the country, the natural place for it. In concluding his remarks, Mr. Palmer pointed out that the cost of transportation is a heavy tax, and the result of the proposed improved system will be to eliminate the burden rather than increase it by the tax that so many people fear.

Manufacturer.—Mr. H. M. Leland, of Detroit, represented the manufacturer in telling why that class of the community is interested in the subject of good roads. The first point made was that the manufacturers invariably build their factories on a well-paved street, as they realize the cost of hauling raw and finished material over soft or otherwise poor roads. Mr. Leland had prepared a paper, but cancelled considerable of it in order that he would not overstep his due time limit. The advancement made by the American nation was referred to, and compared to their enormous percentage of bad roads. Manufacturers are directly interested in good roads, since following them will come an increased demand for more bicycles, automobiles, buggies, roadmaking machinery, and many other classes of goods. Since good roads will increase the value of property and make farmers more prosperous, they will buy more and more of the classes of goods that tend to give comfort and happiness. Every home and hamlet will be enabled to purchase more and more of the products of the manufacturer. Mr. Leland contended that road improvement should go side by side with education, also with railway and harbor improvement. Comparing good and bad roads, Mr. Leland instanced a case in which 16,000 pounds was hauled 4 miles by 4 mules in 1 1/2 hours, at a cost of 15 cents per mule per mile, making a total cost of 90 cents for hauling the load. At the end of 4 miles of good road 5,000 feet of bad road was encountered, over which the hauling of the 16,000 pounds required 10 mules and 7 men for 9 hours, at a cost of \$80.80. Mr. Leland concluded that it is ridiculous to consider road improvement along correct principles as expensive.

Medical.—E. B. Smith, M. D., of Detroit, in speaking from the standpoint of a physician, claimed that good roads are good for doctors as well as for their patients, as they shorten the time in which it takes to reach them, also make the trip much less wearing on the physician. Good roads will in this way increase happiness by improving health. In order to show the effects of riding on rough roads, Dr. Smith called attention to a well-known disease that is invariably found among stage drivers as a result of constantly driving over rough roads. He also pointed out that medical men are coming to the conclusion that much of the nervous diseases and premature aging of the women in the country are indirectly due to riding over rough country roads. The nervous system of the human body was likened to a telephone system, which is easily put out of order by jarring. Another point made in favor of good roads was that improved roads meant better drainage, which goes far to improve the sanitary condition of a country.

Good Roads Movement in Ontario.—Mr. Andrew



FIG. III.—PORTION OF ROAD ALMOST FINISHED.

Patullo, M. P. P., Woodstock, Ont., who was one of the first men in Canada to agitate for an improved system of roadmaking, pleased his audience with a review of the movement during the last seven years, at the beginning of which time the first Good Roads Association was formed in Ontario. At the commencement of the movement much injury was done to the cause by speakers who were too aggressive and theoretical, inasmuch as the undertaking was made to appear altogether too expensive. As time went on, however, A. W. Campbell, C. E., was discovered to be the proper man to give instruction in road building, and the office of Good Roads Commissioner was created, with Mr. Campbell as its officer. For some time

Mr. Campbell did a faithful but somewhat discouraging work of addressing meetings and giving instruction against both active opposition and stolid indifference. The real merit of the cause, however, in time appealed to thinking men, until during the last few years there has been an increasing demand for Mr. Campbell's services in addressing meetings of fruit-growers, dairymen and other classes of farmers, who realize that a better system of roadmaking is much needed, and that Mr. Campbell is the proper man to impart the instruction. In all, Mr. Campbell has addressed over 500 public meetings, with one result that fully 300 municipalities have purchased roadmaking machinery, whereas only a few years ago such a machine was not thought of in Ontario, except the plow, pick, shovel and scraper. The town of Woodstock prides itself on owning a road roller, stone crusher, and machine grader. The town of Windsor has appropriated \$200,000 for street improvement. These and many other centers are realizing that good roads mean profit, while bad roads means ruinous loss. Mr. Patullo claimed to be able to see the abandonment of all roads on correct principles. The speaker recommended the plan of having properly-qualified road engineers appointed over certain townships, districts or areas, and maintaining his services so long as he does his work properly. When such a system becomes general, with proper financial support in the form of taxation, our roads will gradually improve along permanent lines.

How to Obtain Good Roads was the subject assigned to Mr. A. W. Campbell, Provincial Road Commissioner, who contended that less talking and more action was necessary. What was left for the Congress to do was to resolve themselves into an organization for work. Most of people have become convinced that good roads are better than bad ones. The change from poor to good roads must be gradual, without attempting to bring about a sudden transformation. In Ontario, for years has been spent annually \$4,000,000 in money and labor without system, organization or management. Such an extensive expenditure for such an important work should be made under the best and uniform direction. In order to secure good roads the old system of many pathmasters, with as many ideas of doing the work, must be done away with. What is needed is organization and a conclusion as to the best system to follow. It is not desirable that a rule be made to apply to the construction of all roads, but rather that the correct principles of road-making be applied in the making of roads to fill their desired purpose and with the material at hand and the finances at command. The object should be to have all work done with a united and definite purpose.

Following Mr. Campbell, the meeting was addressed by W. H. Moore, St. Louis, Mo., who contended that every voter should be able to write his name and own \$150 on which he pays a tax. What is needed is organization, education, agitation and legislation. Mr. Moore advocated State aid for road building. It was pointed out that in the United States there was spent last year for improvements in rivers and harbors \$26,000,000 of public money, whereas the 3,500,000 miles of country roads received \$8,000 all told. In order that country roads get their due share of appropriation, thorough organization is needed, such organization as is common in election campaigns. The efforts of such organization should be directed towards gaining the sympathy and support of the two great political parties. Then and not till then will the matter of improved roads receive its due attention.

Good Roads—Why? How? What? When? Where? was spoken to by H. S. Earle, Chief Consul, Michigan Division L. A. W. As the time of the Congress had been nearly exhausted when Mr. Earle was called upon, he was compelled to abbreviate his remarks. In answer to why? it was claimed that because we should. This is to be accomplished by taxing every property into a general road fund. The farmer will put in his dollar along with the city man's dollar, which goes to the improvement opposite his farm. The other farmers put in their dollar in the same way, with the result that each man has not only the good road opposite his own property to drive over, but he has a good road all the way to his market town. Mr. Earle recommended the use of convict labor and unemployed men, properly directed under a correct system. He contended that it was not true that the world owes every man a living, but it does owe every man an opportunity to make a living.

Resolutions Adopted. 1. Whereas the United States Government in the earlier days of the Republic espoused the cause of road improvement by building and maintaining national roads, and whereas aid has been given to the Western railroads both by land grants and bonds, and whereas it is the well-established and long established practice of the general government to aid in transportation over water by deepening the rivers and har-

bors and the water communication between the great lakes, therefore be it resolved: That the same liberal policy be extended to the overland transportation upon the common highways of the people, and that every reasonable aid should be extended by the United States Government and State Government to reduce the cost of transportation upon these highways.

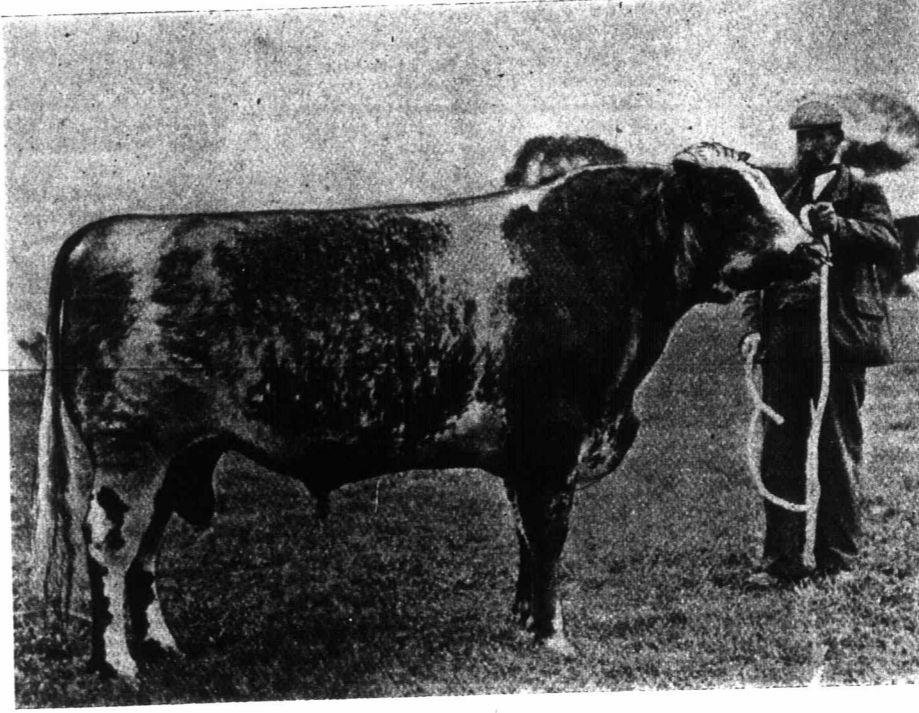
RESOLVED.—That the good work heretofore accomplished by the Office of Public Road Enquiries of the United States Department of Agriculture should be extended as rapidly as possible, and that every State in the Union should be reached not only by the literature published by that office, but by public addresses and object-lesson roads, produced by the most skillful experts in the most economic and scientific manner.

RESOLVED.—That State and local associations for the encouragement of road improvement should be formed in all parts of the country, and that members of Congress should be requested and urged to further increase the annual appropriation to be devoted to this purpose.

2. Whereas, one of the great questions of the present day is how to improve our public highways, and in its discussion we are confronted by another, to wit: What is the best way of utilizing our prison labor so as not to come violently in contact and in competition with honest and free labor in any of the several branches of industrial pursuits; now therefore be it

RESOLVED.—That we, the first International Good Roads Congress, do wish to declare that we are in favor of utilizing to the utmost possible extent prison and convict labor in preparing road material and placing same on the highways, so far as it can be done without interfering with good government and honest labor.

3. RESOLVED.—That we recognize the deep interest manifested by the Southern Railway Co. and



ROYAL DUKE.

First prize and champion at the Royal Show, 1900.
PROPERTY OF HER MAJESTY THE QUEEN.

other railway interests in sending representatives to this convention, and we most earnestly indorse the importance of their suggestions in having the leading highways of the State constructed and improved so that they will run at right angles to railways, and thus facilitate most cheaply the means of communication between the railways and the common roads of the country.

A committee consisting of Hon. Martin Dodge, Director Office Road Enquiry; Andrew Patullo, President Ontario Good Roads Association; and Col. Carl Moore, of St. Louis, Mo., was named for the purpose of conferring with the Executive Committee of the Inter-State Good Roads Association with a view to effecting a permanent national or international organization in the interests of better roads.

The Congress closed with a hearty vote of thanks to Mr. H. S. Earle, chief consul, Mich. Division L. A. W., for his efficient and faithful work in bringing together the convention.

A Pin-Driving Punch.

Sir, The following is a description of a handy little tool called a pin driver, used for driving the pins out of any old building when tearing them down. It is made as follows: Take a piece of iron or steel about one foot long and 1/2 in. in diameter, and make a hole in the one end to fit over the pointed end of the pin and drive with a hammer.

Ontario Co., Ont. W. M. WILLIAMS.

When you get older,
My son, you won't let
On a thing till you have tried it,
For Nature is coy,
And she likes to upset
Your scheme when you think you've pulled it.

Rural New Yorker.

More Biographical Notes of O. A. College Graduates.

Since we were not able to give biographical notes of all the members of the 1900 O. A. C. graduating class in our last issue, we continue the list herewith:

A. J. WAGG, B. S. A.

was born at Goodwood, Ontario Co., in 1876. The following spring his parents and family moved to



C. M. READE, B. S. A.

Manitoulin Island and bought a farm. Mr. Wagg resided there until the opening of College in 1896. He took two years at College, passing all examinations and obtaining his diploma at the close of the second year. He then went to work in a cheese factory in Norfolk Co., remaining there until the Guelph Dairy School opened in Jan., '99. He took the full Dairy Course, passing all examinations with first-class honors and obtaining second place in the Proficiency list. In May of the same year Mr. Wagg took charge of a cheese factory at Bar River, in Algoma District, until the College opened in the fall of '99, when he returned to complete his course. In the final exams for B. S. A. degree he took first place in special subject, taking first-class honors in the honor subject, "Dairying," and in "Bacteriology." Mr. Wagg is now running a creamery at Mindemoya, Manitoulin Island.

C. MOORE READE, B. S. A.

was born at Markham, Ontario, December 17th, 1877. Toronto, however, very soon became his home, and there he received his early training in the Wellesly public school. Ever since his early youth he has had a liking for nature-study and country life. In 1893 he made an agreement with a farmer at Leamington, Ontario, and was initiated into farming through the straight and narrow gate. In October, 1895, he entered the College, and received the Associate diploma in June, 1897. In September, 1899, Mr. Reade joined the present graduate class and took the Biological option. It is his intention to further improve himself in biological work. He has accepted an assistantship in zoology, under Professor Reighard, of the University of Michigan, and will begin work with him in September, but at present is assisting at the Guelph College in bacteriology.

G. A. MacINTYRE, B. S. A.

was born in Renfrew, Jan. 26th, 1879, of Scotch parentage. His grandparents were among the earliest settlers in this part. Previous to going to Guelph, Mr. MacIntyre spent one year in Renfrew High School, taking English and Science. He has always worked at home on the farm, with the exception of last summer, which was spent in the Renfrew creamery, that he might be qualified to make dairying his specialty in the graduating year. At present Mr. MacIntyre intends to pursue dairy farming. His father is a breeder of Holstein cattle, and he intends devoting his attention along that line.

To Build up Old Land.

A sure way to bring up a farm is to start a 4-year rotation, growing clover and other crops that may seem best. Keep stock to eat the products. Save all the manure. Sell wheat and buy bran to feed with corn, and soon you will have to tear down your barns and build them bigger. Pursue the opposite plan from the one that has run the farm down somewhat—put back more than you take off. Clover growing, cement floors, purchased feed, etc. If you are doing it, and better later. I should try harrowing the low permanent pasture thoroughly and sowing seed and rolling it in. Do not overstock after grass gets started.—T. B. Terry, in Practical Farmer.

A. College

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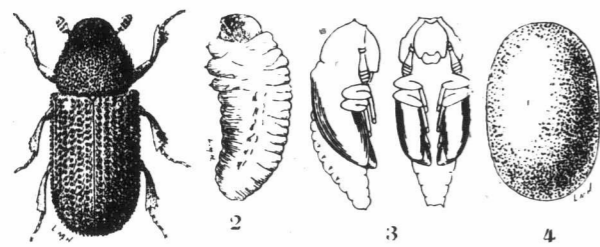
The Clover Root Borer
(*Hylastes obscurus*).

The clover-root borer is a foreign insect that made its first appearance in the northern States of America some fifteen years ago, and in Ontario some years later. Being inconspicuous in appearance and its work not readily recognized except in rather badly infested areas, it has not been observed in Ontario to any considerable extent until within the last few seasons. Our attention was directed to its ravages on a farm near London, Ont., where quite extensive patches of clover showed signs of injury. An examination of several plants revealed as many as a dozen insects on single clover roots and a lesser number on each of several others.

The life-history of the pest as it occurs in Ohio is given in Bulletin 112 of the Ohio Agricultural Experiment Station, and applies to Ontario conditions. The eggs are laid during May and June, in cavities gouged out by the female in the crown of the plant, in which she places from four to six pale whitish elliptical eggs. These hatch in about a week, the young grubs for a time feeding in the excavation made by the mother insect, but they soon begin to burrow downward, finally making their way to the different branches of the roots.

DIFFERENT STAGES OF THE INSECT DESCRIBED.

The fully-developed insect is a brownish-black beetle about one-eighth of an inch long, and is shown enlarged in Fig. 1. The young, or grub (Fig. 2), when full-grown is nearly as long as the beetle, of a



The Clover-root Borer in its different stages of development (much enlarged).

white color, with yellowish head and dark brown jaws. The pupa, or the stage between the grub and the beetle, is shown also enlarged at Fig. 3. The egg is very minute and white in color, shown in Fig. 4. Fig. 5 shows effect of insect on roots, the dark ragged portion near the crown representing that attacked by the insect.



An infested clover root.

HABITS OF THE INSECT.

The beetles lay their eggs in the plants, these hatch into grubs, which when full-grown change to pupae, and from these to the beetles. There is but one generation each year. The young brood begins to work on the plants about the second week in June. The insect is not liable to attack the young clover the year it is sown, but that which is growing for a crop the second and later years. If the attack is very severe the field will show the effects of the work of the insect soon after the hay crop is removed, by the plants dying out in spots, and on examination the roots will be found as shown in Fig. 5.

PREVENTIVE MEASURES.

The larvae or grubs are footless and cannot travel about from plant to plant, but must either find subsistence within the plant or perish, unless they are sufficiently advanced to enable them to enter the pupal state, during which they require no food. It is the custom in many localities to remove but one crop of hay, pasturing the field later on and plowing it up the following spring. This allows the borers to develop within the plants, and they have but to make their way to adjoining fields and commence their work the following spring. Therefore, as a preventive, the farmer's best course is to plow this field, if badly injured by this pest, as soon as possible after the middle of June, taking care to leave the sod exposed to the drying-out effects of the weather as much as possible. Of course this does not admit the removing a crop of seed, but if the plan is followed in a community for a few years, or if only healthy fields are carried over, the pest will probably become so reduced as not so long require such rigid treatment. It is impossible to prevent the full-grown insects from entering a field, if they are in the near vicinity, and equally impossible to prevent them from ovipositing in the plants, after they have become established, while to reach the pest in the roots is out of the question. What has appeared to be the better plan is to plow infested fields immediately after the hay crop has been removed, while the larvae are in a helpless condition. If the sods are turned up to the hot sun and winds, it will speedily out and wither the roots so that the food supply of the larvae will be cut off and they must necessarily starve; whereas, if the plowing is delayed until they have reached a point where they

do not require food, they will not be injured. Infested clover roots were received on June 25, that contained an occasional pupa, thus showing that the longer plowing is delayed after this date the greater number of the borers will be left to attack clover fields the following spring, because the pupa requires no food, and cutting off the food supply of the grubs will not then affect, in the least, its development.

Wages on the Farm.

An American paper, referring to the rate of wages (\$18 to \$20 per month) to good men on the farm this summer, adds:

"This, of course, includes board, which the clerk must pay for out of his salary. This will add about \$15 a month to the farm hand's wages. Then there is the question of dress, which is no small item, for the young man about town cannot go about his business in the coarse clothes that the farmer, by the nature of his work, is forced to wear. The difference in the first cost is not a small item; and when it is taken into consideration that the farmer can wear his clothes until worn out, while the city man must discard his as soon as frayed or soiled, there will be little doubt as to the relative sizes of the two clothing bills. Then there is the laundry bill—the hired man's washing costs him nothing, as it is thrown in; the barber bill; the tickets for the theatre and other entertainments; and other items which the young man on the farm is not called upon to meet.

"The hired man's salary, plus his board, will amount to at least \$30 to \$35. Add to this his dress saving, barber, theatre, and other bills, and it will easily amount to \$50; no small salary when it is taken into consideration that he is learning his business, and will be ready to start for himself as soon as he has a bank account that will warrant his setting up for himself. The fact that he doesn't handle all the money really means nothing. It is not what a man makes, it is what he saves.

"The average young man has not the educational abilities to draw such a salary as this in a city. A man with practically no education can command the best of wages as a farm hand if he is trustworthy and faithful. The clamor that the farm hand is not paid enough is not just. The farmer pays all that he can afford to, and often more than the hand is worth to him. A little thought upon the subject will convince one that this is not the solution of the question, 'Why are there so few good hands to be had to-day?'

Preparing for Fall Wheat Sowing.

Though the price of wheat prevailing offers no tempting inducements to the farmer to engage in its production as one of his principal crops, yet there are large areas of some of the provinces of Canada where fall wheat can, in most years, be successfully grown, and when sown under fairly favorable conditions of fertility and proper preparation of the land, it is among the most profitable of farm crops. It is a favorite crop with many, for the reasons that its seeding and harvest come in at times when they interfere but little with other farm work, that it is a clean crop, easily harvested, its straw making good fodder, and it is one of the best of crops with which to seed to clover and grasses to insure a catch. The old-fashioned system of summer-fallowing for wheat, requiring two years to produce a crop, has gone out of favor. It is, when well managed, an excellent preparation for the crop, but has been found too expensive, except in the case of land very full of noxious weeds and needing to be cleaned by such a process. It has been found that, generally speaking, as good a crop, at much less cost of labor, can be secured with one plowing, followed by repeated working of the surface with the cultivator or disk harrow. For this purpose it is usual to take a pasture field or a meadow after the hay crop has been taken off, plowing moderately deep during the month of July or early in August, rolling and harrowing immediately or within a day or two after the plowing to firm the land, to conserve the moisture, and to hasten decomposition of the grass, which provides nutriment for the rootlets of the wheat when it is sown. The plowing of such land for wheat fits in well after any rains which may come during haying and harvest, keeping the horses at work when the land is too wet for working among roots and corn. The importance of rolling and harrowing immediately after plowing cannot be too strongly emphasized. If the soil is hard and lumpy, the lumps are more easily crushed by the roller while the plowing is fresh and before it has been dried out and baked by the sun, and if the harrow is used immediately after the roller the work of reducing the land to a fine tilth is effected with the least labor, and in addition to this, there is the fact that surface cultivation, especially if given soon after each rain, keeps the moisture in the soil and provides a congenial seed-bed for the wheat when sown, which germinates quickly, grows vigorously and becomes strong to resist the rigors of the winter and the cold winds, and the upheaving effects of frost in the spring. Where the land is in good heart, good crops are frequently grown on ground from which barley or peas have been harvested. In this case, if the land is plowed, the rolling and harrowing process should be promptly attended to. Land upon which peas, after sod, have been grown may be sown to wheat, if well prepared, and sometimes there is no need of plowing after the peas are harvested, a thorough cultivating both ways making a very good prepa-

ration for wheat seeding, and when ensilage corn is matured sufficiently to be cut, in the first days of September in a favorable season, a fairly good crop of wheat may follow if the land is well prepared and has considerable moisture in it to carry the plants on till the usual fall rains come. It should be a settled policy not to sow wheat on poor land or on land which cannot be properly prepared for the seed with a reasonable prospect of giving it a good start, as the crop needs all the most favorable conditions in order to insure success, while sowing under adverse conditions is apt to result in disappointment and the loss of the seed and the labor expended.

DAIRY.

Why Strippings Are so Rich in Cream.

Many explanations have been given of the reason why the "strippings"—or that portion of the milk which is last drawn from the udder—is the richest in butter-fat. One of the most generally accepted explanations is that the butter-fat, being of such a low specific gravity as compared with the watery portion of the milk in which it floats, has a tendency to rise to the upper portions of the udder, just as it does when the milk is set for cream raising. When the cream so rises, it naturally follows that it will be the last to come away in the operation of milking.

That there is a very marked difference in the quality of milk first drawn from the cow, as compared with that which comes away towards the finish, was clearly shown by an experiment carried out some time ago by a well-known dairy expert. This gentleman found that while the average percentage of butter-fat in the first half pint of milk withdrawn from a cow worked out to only 1.32 per cent., the butter-fat in the strippings, or the last half pint, amounted to over 9 per cent. There was hardly any difference in the percentage of the other solids present in the last drawn as compared with the first drawn milk.

Ignorance is Folly.

A CREAMERY SHOWS WHAT INTELLIGENT FEEDING AND BREEDING WILL DO FOR THE FARMER.

A creamery reports that for a year just passed it has paid one patron \$60 per cow for each cow milked in a herd of 16, and five of the number were heifers milking with first calf. To another patron it paid \$25 per cow in a herd of 20, and to another \$17 per cow in a herd of 13. The latter herd is not to be considered in our remarks, for the cows were allowed to "rough it," and no man who pretends to dairy farming will so handle his cows. The \$25 herd were given good roughage and grain in abundance; were warmly stabled and kindly treated. The \$60 herd were bred on the dairy farm, fed a balanced ration, and otherwise treated about as their \$25 neighbors. The cows of each herd were neighbors, belonged to farmers of the same community, kept on the same kind of land and the climatic conditions were identical.

What produced the difference in the earnings of these cows? It was the difference in the owner. The feeder of the \$60 cows was a student. He studied the questions of breeding a good cow, what and how to feed and care for her. He read a dairy paper, read and filed away for future reference bulletins from Agricultural Colleges, and studied a book on "Feeds and Feeding," which cost him \$2. He owned and operated a Babcock test and scales, being convenient to his milk can in the barn, the weight of each cow's milk night and morning was recorded. In payment for this exercise of brains he received \$35 more per cow from his milk for the year than did his neighbor. A profitable dairy was the reward for his study.

The \$25 man used to laugh at his \$60 neighbor and call him a book farmer, saying that he'd see the day when he could better afford to spend his time in the cornfield rather than with his cows, but that time seems farther off than ever. The \$25 man didn't believe in studying dairy questions. He knew a cow would give plenty of milk on any kind of feed; all she required was plenty of it. He knew that it didn't pay to pump warm water for the winter drink, and he was very sure that the weighing and testing business was a humbug and unnecessary. The result is pitiful. The man received \$25 each per year from his cows in milk. It was \$5 per head more than the feed cost. He and his children worked and tugged all summer making feed for those cows and realized a mere pittance for their trouble.

The \$25 man is grumbling dairying don't pay. His test does not suit him and the butter-fat prices are too low. It is impossible to make that man see that the creamery is not to blame for his condition. His is a plea of dissatisfaction, and so it will be ten years from this time.

The milk from each of these herds was handled in the same creamery and the butter packed at the same time. It went into the common market and sold at the same price. For one man the creamery made a living profit and allowed him money besides; for the other it paid little for feed and trouble, yet the fault lay not with the creamery. The \$60 man was a dairy man; the \$25 man ran a steer dairy. He wouldn't take a year's subscription to an agricultural paper as a gift. He would do nothing to educate himself. The low results from his herd was his punishment for his ignorance. *New York Produce Review.*

Butter--From the Stable to the Table.A CONDENSED SYNOPSIS OF THE PREVIOUS ARTICLES.
BY MISS LAURA ROSE.

THE STABLE.

Before starting to build, consider well the plan, making every part of the building converge toward two essentials, the comfort of your cows and your own convenience. It pays to put up a good building, as it takes less feed to keep the animals. Have good floors; walls with a still-air space, and tight-fitting doors and windows. Fresh air and sunshine are as necessary to the good health of cows as to human beings. Make ample provision for the proper admittance of both. Have the water troughs and mangers constructed as to be easily kept clean. Do not forget to whitewash the stable at least once a year; it cleanses and brightens.

THE DAIRY COW AND HER FEED.

In selecting a herd, consider the purpose to which you intend putting the milk. If it is to be converted into butter, have cows which give a fair average amount of rich milk. Have a standard and discard all animals which cannot come up to it. It is not asking too much to demand that each cow give 6,000 lbs. of 3.6% milk, or, in other words, between 250 and 300 lbs. of butter. A cow's ability to secrete milk may be partially judged from her general appearance, but the weigh scales and Babcock tester are by far the most reliable test. Many good cows are stunted in their milk production owing to not being liberally fed. To make milk, she must have plenty of the proper kind of food. In summer nothing is better than good pasture and a little meal. It is well to provide against drought by having some green crop to cut. For the bulky part of the ration in winter nothing is cheaper and better than silage. It sustains the flow of milk and keeps the cows in a healthy condition; but, remember, it must be of No. 1 quality, or it will taint the milk. As milk is 87% water, a cow should have all the water she cares to drink, and it is important that it be pure.

MILKING TIME.

If the anatomy of the cow and the secretion of milk were better understood by those who have the care and milking of the cows, the returns from the dairy would be greatly increased. Milk is largely manufactured just while the cow is being milked, and her surroundings and treatment powerfully influence both the quality and quantity. Assure the cow that you are her friend, ever kind and thoughtful of her comfort, and she will show her love to you by making all the milk she possibly can. The draughty floor, the poor feed, the nasty blow, the tantalizing horn fly, the nagging dog, rob the milk pail. These are things which can be remedied. Cows should be milked quickly, in a pure atmosphere, by the same person, in the same place, at the same time, and with dry hands. Milk out the last drop if you want to prolong the milking period.

THE CREAMING OF MILK.

Where one or two cows are kept and shallow pans will likely be used, the milk should be strained immediately, and the pans set in a cool room where the air is fresh and sweet. Avoid having a draught over the milk. It makes a thick crust on the cream. Skim at the end of 24 or 36 hours in summer, allowing it to stand longer in winter. Always skim before the milk thickens.

Deep cans are to be preferred to pans, but it is useless to use them unless one has a good supply of ice. To do thorough creaming with the deep cans, the milk should be strained into the cans and placed in water as soon as possible after milking. See that there is plenty of ice in the tank, so as to reduce the milk quickly to 45° or below. The milk should stand 24 hours in summer, and from 36 to 48 hours in winter.

The ideal way of getting the cream from the milk is with a separator. They are fast coming into general use, and while lessening the labor, they increase the profits from the dairy. In buying a machine, get one of fair capacity, easy to run, and easy to clean. Set it up in a clean, well-ventilated place, convenient to the cows and calves, so as not to carry the milk far. Have the foundation firm, the machine well oiled, and always get up speed slowly. Wash the machine thoroughly after each time of using.

PASTEURIZING, RIPENING AND GENERAL CARE OF CREAM.

If from any cause there is a taint on the milk, due to feed or unfavorable surroundings, pasteurize the sweet cream, which will largely drive off the objectionable flavor. To pasteurize, heat the milk to 160°, in water at 180°. Hold at that temperature for twenty minutes, then cool down. Cream treated in such a way needs a starter, otherwise it would be too long in ripening. Add to it some good flavored sour cream, buttermilk or skim milk. Hold at from 60 to 65°, stirring frequently; cool to churning temperature, when the cream has a mild acid taste and shows signs of thickening. If the cream be raw, I prefer adding a little sour cream or milk to the first skimming and holding the cream at a low temperature than allowing it to sour without aid at a high temperature. Always cool separator cream before adding it to the cream crock. Keep the cream can covered. Do not let your cream get overripe, stir right to the bottom of the cream can each time fresh cream is added. You have largely under your own control the flavor of your butter by the proper management of your cream.

CHURNING, SALTING AND WORKING.

The churns should have no washers or workers inside. Scald and cool, then pour in the cream through the strainer dipper. The temperature for churning will depend on the richness of the cream, the quantity in the churn, the time of the year, etc. Try to have rich cream; do not fill the churn over half full, better only a third full, then churn at that temperature which brings butter in nice granular form in thirty minutes. Poor cream means a high temperature, and not such an exhaustive churning. Too quick churning invariably means a considerable loss of butter in the buttermilk. In using butter color err on the pale side. Revolve the churn from 70 to 80 times in the minute. Stop churning when the granules are the size of wheat grains. If butter comes with the first drawn buttermilk, it is a reliable sign the butter is not sufficiently gathered. Give the butter but one washing, with plenty of water.

If salting in the churn, allow one ounce to each pound of butter, and let the butter remain in the churn two or three hours, then take out and work, salting in the worker—only 1/2 ounce per pound is required. If you have not a lever worker, make up your mind you will do without one no longer. Work by pressure only, avoiding a sliding motion. When but little moisture shows on the butter, and the body is close and the color even, the butter is sufficiently worked. Butter for packing should be washed twice, salted a quarter of an ounce heavier, worked twice, put into new or perfectly cleaned crocks or tubs, and the tops covered with parchment paper and a salt paste.

THE PACKAGE AND MARKETING OF BUTTER.

Exercise the greatest care and neatness in finishing the butter for market. The brick-shaped pound prints are the most convenient—they pack well and cut nicely for the table. When freshly wrapped, they should weigh 16 1/2 ounces, the half ounce allowed for shrinkage. Use only the best parchment paper, wetting it in clear cold water before putting it on the butter. Let the butter reach the consumer as soon as possible after making. When regular, good paying private customers can be had, it is probably the best way to dispose of the butter. Educate them to rely on the quality of your butter and your promptness in delivery. If you dispose of your butter on the market, see that the package, the basket, the butter cloth, and, I might add, your own appearance, is beyond criticism. These things are all noticed by the purchaser. When we consider that 99% of the cows give good milk, and then likewise consider how much inferior butter is placed on the market, does it not show a lack of skill and care on the part of buttermakers. Let each of us do what we can to improve this valuable product of the dairy, and make Ontario noted, both at home and abroad, for her excellent butter.
O. A. C., Guelph, Ont.

Improvements in Cheese Factories.

Messrs. James Morrison, John Brodie, Geo. McDonald, and Arch'd Smith, travelling instructors in cheesemaking in connection with the Dairymen's Association of Western Ontario, recently reported, at a meeting of the directors, that great improvements have been made this year in the buildings and fittings of many of the factories.

Where Dairy Breeds Differ.

It has been well said that there is no such thing as a "best" cow. The remark applies to dairy cattle as well as to other classes of stock, and its explanation is not far to seek. Different districts and different localities have different requirements, for while in one place a farmer may find it advisable to sell his new milk in a town, and, therefore, may find it to his advantage to obtain as large a quantity as possible without any special reference to the percentage of butter-fat and solids which it contains; his brother farmer elsewhere, less favorably circumstanced in regard to markets, may find it necessary to resort to the conversion of his milk into butter or cheese, and in such cases he must not alone aim at attaining only a large yield of milk, but a large yield of milk of good quality.

There are "cows" and "cows" from the dairyman's point of view. Holsteins and Ayrshires, which are noted for the heavy yields of milk which they produce, are so highly prized in cheesemaking districts because of the fact that though the milk which they yield does not contain a very high percentage of butter-fat, it is comparatively rich in other solids, and these other solids play a very important part in the manufacture of cheese. Jerseys, on the other hand, are noted for the remarkable richness of their milk in butter-fat, and though there are among them many large milkers, yet as milkers pure and simple they stand, as a rule, somewhat lower down on the list than the Ayrshires and Holsteins; but where milk is paid for on the basis of its butter-fat content, which is the only fair system, the Jerseys give a good account of themselves. Kerries and Dexters are also noted for the exceptional richness of their milk, and in this respect they stand next in order to the Jersey. One great point in favor of the Kerries and Dexters is, that not alone is their milk very rich, but they are capable of producing large quantities of it. It is doubtful if there is any other breed of cattle in the world which, weight for weight, will produce as large a yield of milk as a Dexter cow of a good milking strain.

How the Per Cent. of Fat in Milk Affects the Yield of Cheese.

There are many who maintain that it is just to "pool" or divide money among patrons of a cheese factory according to the weight of milk. The following tests, conducted in the dairy department of the Ontario Agricultural College, by Prof. H. H. Dean, show how far from justice this plan is:

Three hundred pounds of milk, testing 4.35 per cent. fat, produced 34 1/2 pounds of green cheese, and 33 pounds of cured cheese. On the same day and under the same conditions of handling, as far as possible, 300 pounds of milk, testing 3.15 per cent. of fat, produced 27 1/2 pounds of green, and 26 pounds of cured cheese. A difference of one and two-tenths per cent. in the fat made a difference of seven pounds in the yield of cured cheese from 300 pounds of milk, or at the rate of 2 1/2 pounds per hundred pounds of milk. At 8 cents per pound of cheese, it makes a difference of about 18 cents per 100 in the value of this milk for cheesemaking.

Another good illustration will suffice. This time we had two vats of milk, 300 pounds in each, one of which tested 4 per cent. fat and the other 3.1. The yield of cured cheese from the former was 30 1/2 pounds, and from the latter 26 1/2, a difference of 4 pounds. We have numerous instances where the difference is as great or greater than in the cases cited, which goes to show that all milk should be tested as it comes to the factories, and the proceeds of sales divided according to its cheesemaking value, and not according to its bulk.

In an editorial review of the Dairy Service in New Zealand, in connection with the appointment of Mr. J. A. Kinsella as Dairy Commissioner, *The New Zealand Dairy Messenger* sums up the situation in the following paragraph: "To put the whole position in a nutshell, we may say that the two most important desiderata of the Dairying Service to secure the end desired—an output unsurpassed for quality in any part of the world—are brains and backbone, and we are confident neither of these qualifications will be lacking in the new Commissioner, whom we now congratulate upon his appointment."

VETERINARY.

Milk Fever Case Cured.

SIR,—I have said that I did not believe that a cow taken with milk fever or paralysis could be cured. We have lost several with this disease, and have generally had the doctor until this last one. A poor cow never has milk fever, always the best. This last cow we have saved, and you can judge how bad she was from the medicine we gave her. She was worth \$50, and when we commenced with her I would not have given \$1 for her. I said she would die, but we would try and save her. We first gave her 1 1/2 pounds of Epsom salts; this was in the morning. She then staggered quite badly, and at noon we gave her 1 pound more salts. We then tried a prescription given by Mrs. H. M. Reasoner. This treatment was to give ten drops aconite in water in a tablespoon, every ten minutes, until five doses were given; then every half hour for twelve hours; then give ten drops three times a day, morning, noon and night. Open the mouth and draw out the tongue, and put the spoon down past the bulge in the tongue, and then turn it over so as to be sure she gets the whole dose. After we gave the five ten-drop doses, we gave her 1 1/2 lbs. more salts. She had now 3 1/2 lbs. of salts down her and fifty drops of aconite, and we continued to give the aconite until we saw that she was better, and this treatment has cured the first cow I ever saw cured of milk fever after they would stagger and fall. I think it a sure cure if taken in time. When a cow is quite a length of time making up her udder it indicates danger. In such a case, about ten days before you expect her to drop her calf, give 1 1/2 lbs. of Epsom salts, and about three days before you expect her in give another dose of 1 1/2 lbs. of salts. This is the best preventive I know of.
JOHN B. SPONCE.

Northumberland Co., Ont.

[NOTE.—As we have pointed out on several occasions in our columns, a cow in the advanced stages of milk fever has not the power of swallowing, so that when an animal passes through an entire attack of this disease and is able to swallow medicine during the entire period, her attack could not well be considered a severe one. By the Schmidt treatment, referred to in our issue of June 15th, cows are treated successfully by injecting medicine into the udder, when to administer medicine by mouth would be to court failure, inasmuch as the lungs would receive the draught instead of the stomach.
EDITOR F. A.]

Farm Crops in Canada.

Dr. Wm. Saunders, Director of the Experimental Farms, has recently returned from the Maritime Provinces, Quebec, and Western Ontario, and received reports from the far West. He reports hay generally light in Ontario and the East, almost a failure in Manitoba and Eastern Assiniboia, but heavy in Alberta and British Columbia. Fall wheat is irregular, and not likely to yield an average of more than 15 bushels per acre, as a result of drought, winter-killing and Russian fly. Spring wheat is heading nicely on short straw in Ontario and Quebec, and in the Maritime Provinces it is healthy, but backward. In Manitoba and Eastern Assiniboia half a crop is expected. In Saskatchewan, Alberta, and British Columbia, a full crop is looked for. Oats promise a good yield of grain, but light straw in Ontario and Quebec. A fair return is looked for in Manitoba and Assiniboia, and a heavy yield in British Columbia. The same may be said of barley. Peas are looking unusually well in Ontario, Quebec, and Maritime Provinces. Few are grown in the West.

POULTRY.

Eggs in Cold Storage.

HOW THEY ARE KEPT BY THE MILLION FOR USE IN THE WINTER MONTHS.

Half a million dollars represents approximately the value of the eggs being placed in the cold storage warehouses of Kansas City this season. The season is now at its height, and before the close about 120,000 cases, each containing thirty dozen eggs, will be laid away for next winter's use. Last spring about 80,000 cases were stored in Kansas City warehouses.

There are many interesting details in egg handling which are but slightly known to the average consumer of eggs. Few people realize the number of different hands an egg passes through on its journey to the dining-room where it is eaten, in the city. Candling eggs is an important feature of the storage season. It is a simple process of holding an egg to a light in a dark room, for the purpose of determining its quality. Handlers, who store eggs, have learned by experience the necessity for eliminating all except the largest, cleanest and freshest eggs from cases which are to be carried in storage for several months. Charles A. Moler, head candler at Armour's, has from ten to thirty men working under his direction throughout the season. The candling room is long and narrow, with benches fitted up around the wall. At short intervals electric lights are strung from the ceiling.

The room has no windows and the lights are so constructed that only a ray of light is admitted. Standing before the light a workman examines each egg by holding it up to the light. If the ray shines through the egg clearly it is all right as far as quality is concerned. Cleanliness and size are two important conditions to be reckoned, and eggs must meet all the requirements before they will be accepted for storage. The attention paid to candling has increased each season. A few years ago the only candling rooms in Kansas City were small inclosed spaces in the rear of commission houses, where only one man could work at a time. Now many men consider egg candling their regular trade, and experts are well paid for their care and efficiency. No one can tell whether they have slighted their work until next winter, when the eggs are taken out of storage. The overlooking of one decayed egg may cause the eggs of the whole case to decay, and one case of bad eggs would spoil dozens.

After the eggs have been candled and selected and packed in new whitewood cases, they are placed in storage rooms where a temperature of 31 degrees Fahrenheit is maintained. They are held in that temperature until taken out next winter.

Water or No Water?

It is a fact that a good many young birds are raised in a natural manner without water, and it is by no means a necessity for young chickens. A good many of their ailments may be traced to bad water. Milk, as has been frequently pointed out in these columns, is very good for young chickens—it is food and drink too; but water is merely a liquid that quenches thirst. Even the most fanatic teetotaler has never found any other virtue in it. When there is no milk to spare for the chickens (and milk is generally most abominably scarce in the country) it is best to give them no water to drink for the first fortnight or three weeks at least. Their food for this period consists almost entirely of damped meal. It must be rather more moist, that is all. A certain proportion of moisture they also get off the grass. The danger of water is simply that they are prone to drink a surfeit of it, and this is avoided by withholding it as a liquid and giving it in the food. As they grow older and eat a certain amount of whole corn, water is necessary, but should be given with moderation—that is to say, a little at a time. It is a good plan to mix meal into it, and make a thin gruel, especially for very hot weather, when chickens, like ourselves, have a craving to swallow any liquid in larger quantities than is wise. C. D. L., in *English Farmer and Stock-breeder*.

Fattening Chickens in Coops and in Yards.

The custom commonly practiced by English and French chicken fatteners, and also recommended by some of the Canadian poultry-fitting experts, is to confine the birds in small coops. The Maine Agricultural Experiment Station, in their bulletin, No. 61, describes an experiment that deals with the fattening of chickens for market, in which they claim to have found that close cooping is less profitable and more troublesome than maintaining them in small flocks with restricted runs. Ten coops of four chickens each were fed as confined birds. Each coop had 16 by 24 inches of floor space, with slatted sides. The chickens used in the test were raised under similar conditions and from the same hatch. They were 130 days old at the commencement of the test, and all were pure-bred Barred Plymouth Rocks, White Wyandottes or Light Brahmans. Four chickens were placed in each coop, and fed on thick raw porridge made by mixing meal with cold skimmed milk, making it thick enough so that it would drop, but not run, from the end of a wooden spoon. The meal mixture employed was made up by mixing 100 pounds of corn meal, 80 pounds of middlings, 50 pounds fine ground oats, and

40 pounds fine animal meal. They were fed all the porridge they would eat twice each day. The troughs were removed and cleaned in half an hour after the commencement of each meal. They were constantly supplied with water.

Feeding was commenced August 24th, 1899, and continued until Sept. 28th—35 days. The birds were weighed at the end of each week. They consumed 477 pounds of meal and 81 gallons of skimmed milk. The 40 cooped chickens weighed at the commencement of the test 147.9 pounds, and at the close 237.1 pounds, gaining an average of 2.23 pounds per chicken, live weight. The quantity of dry meal required to produce a pound of gain was 5.94 pounds.

On the day that the feeding of the cooped birds was commenced, twenty of their mates were put in a house 9 by 11 feet in size, with an attached yard 30 feet square. They were fed for the 35 days on the same grain mixture with milk as those confined in the small coops. The 20 birds weighed at the commencement of the test 66.6 pounds, and at the close 116 pounds, making an average gain of 2.47 pounds each. The quantity of dry meal required to produce a pound of gain was 5.52 pounds. In these tests, total and individual gains and cheaper flesh were secured from the birds with partial liberty than from those in close confinement. The labor was less in caring for the yarded birds. The cooped birds were very quiet, and did not appear to suffer from confinement. When dressed, all the carcasses in both lots were even, well formed, and handsome.

In another test, made for the purpose of noting the effects of age, and the development and fleshing of chickens, it was incidentally shown that there is no advantage in very close confinement. This test included 40 chickens closely confined in coops and fed 34 days, and 20 chickens confined in house and small yard, and fed 35 days.

Financial Results.—Taking the sixty cooped and uncooped birds together, and considering the gains in flesh, and the cost of the food used, enables us to form opinions as to the advisability of selling chickens from the range when in growing condition, or specially preparing them for higher-priced markets.

If these birds had been dressed without fattening at the commencement of the feeding test, and had shrunk the same per cent. that they did when slaughtered, they would have yielded 165.5 pounds of dressed meat, worth, at 13 cents per pound, \$21.51. At the close of the test they dressed 272.7 pounds, and were sold at 15 cents per pound net, yielding \$40.90. This shows that their value was increased by fattening, \$19.39. The increase was probably more than this amount, as it was found in other tests that the percentage of shrinkage in dressing lean chickens was greater than in fat ones. Thirteen cents was as much as the unfattened birds would have sold for—slowly—while the fattened ones sold quickly in the same market at fifteen cents per pound. They were very much improved in quality by fattening. The flesh was white and soft, and when roasted, the thighs were soft, juicy and free from strings.

The amount of the dry food used was 750 pounds, and cost \$7.91. The skimmed milk was 140 gallons, worth \$2.80, making the total food used worth \$10.71, which amount taken from the increased value of the chickens leaves a balance of \$38.68 gain on the sixty birds; an average increase of a little more than 14 cents on each one above the cost of food used.

The quality of the well-covered, soft-fleshed chickens, if they are not too fat, is so much superior to the same birds not specially prepared that they will be sought for at the higher price. The dairy farmer is especially well prepared to carry on this work, as he has the skimmed milk, which is of the greatest importance in securing yield and quality of flesh.

Give the Fowls Exercise.

One of the secrets of success in the management of poultry in confinement is giving them plenty of exercise. I believe there is no exception to this rule of management if success is to be attained, for both large and small breeds are greatly benefited by agreeable exercise every day throughout the year. Large fowls, particularly the Asiatics, are inclined to be inactive and lay on fat if generously fed, and excessive fatness is sure to lead to disease sooner or later. Domestic fowls are in better condition the year through if they have ample space to exercise, and when they can have this space to exercise, and agreeable recreation, are seldom troubled with disease. It is not absolutely necessary that fowls should have unlimited range to do well and be profitable, for they seldom go beyond reach, unless forced to seek for their living. However, ample space is needed for walking, jumping and scratching, and if they get this, and the place is kept clean, pure and fresh, they will do well.

Sweet Pea Supports.

An Ontario (N. Y.) Co. sweet-pea grower says: "Instead of driving two lines of brush, as for the garden peas, we drive one stake every few feet between the plants in the center of the row. Heavy cord is then run on each side of the plants, giving it a twist around each stake and tying on every other one to prevent slipping. It is necessary to add new lines as the plants grow. Binder twine will answer for the purpose very well."

GARDEN AND ORCHARD.

Another Chapter on Gardening.

We have a good garden, with not half the work of the one described in your last *Advocate* by Mrs. Rodd. I am afraid if the average farmer's garden had to have as much labor put on it as the said one many of us would have to go without our "garden sass." We had to have a new garden spot this spring, as the trees had taken complete possession of our old one. It was plowed in the fall, and that was the only plowing it got. I do not believe in so much plowing; less plowing and more surface cultivation is better. During the winter it was well manured, then again in spring it had a good dressing of well-rotted manure; then it received a good cultivation with a spring-tooth cultivator, but no digging. I fail to see the necessity of digging out the weed roots, for my experience is that weeds cannot grow if they are never let come to the surface to breathe, as it were. The surface cultivation firms the ground, conserves the moisture, and kills all weed growth. Then, again, I believe in having the manure all over, instead of putting it in drills. It is less work, and answers the same purpose, as the roots of plants cover pretty much all of the ground. Everything was planted in rows—strawberries, raspberries (red and black), gooseberries, currants. And in spite of the very dry weather, I must say our garden looks fine. We had new potatoes, beets, and green beans on the last day of June, with a promise of abundance of all kinds of vegetables. The garden has been hoed twice, some choice things oftener, and now there is scarcely a weed to be seen. An Irishman was asked how it was he always had such good potatoes. He said he hoed them; they said, well, but what else? He said, I hoed them. Well, but surely you do something beside? He said again, I hoed them. I think he was about right. If I go to the trouble of planting a thing, and then neglect it so that it amounts to nothing, I have lost my first labor. Another thing, a woman must depend on herself for most of the work in the garden. The men have not time. MRS. EVERGREEN.

The Fruit Crop in Nova Scotia.

The prospect for apples, so far, is that the crop will be very large. Every tree of bearing size or age, with few exceptions, was full of blossom, and set well. Young orchards from 7 to 12 years are looking very full. There will be some loss from the ravages of the forest tent caterpillar, in some few localities where they have been more than ordinarily plentiful, and were allowed to get the upper hand before spraying. In this town, Wolfville, where every garden and vacant lot is orchard, and the streets lined with shade trees, elm and maple, it has been a serious and constant fight to save the trees from being stripped of foliage, simply because they were not taken in time. But from present outlook, taking into consideration the increase of area and growth of orchards, I should judge that there will be an advance of 25% over the crop of '96. Pears are promising heavy crops. Plums scarcely average; quinces good, cherries only fair, peaches good, currants very full, but gooseberries rather thin, raspberries fair, blackberries (just in blossom) strong and healthy. Strawberries came through the winter well, look strong and healthy, set full of fruit, just commencing to ripen (June 26th), but need rain.

Thinning has not been much practiced, except on plums, where it has been a great success, especially with the Burbank and Abundance. Lombard also frequently should have half the crop taken off. I know of no other way than hand picking that is practicable. Sometimes the curculio has been a benefit rather than a curse in thinning overladen plums; nevertheless, I had rather control my own thinning.

As to the tent caterpillar: Well, I am 70 years old, and have been fighting the rascal ever since I can remember. First it was *C. Americana*, but since somewhere in the sixties we have had *C. Sylvatica* to contend with, and the change is no improvement, but the reverse, as this fellow seems omnivorous, and is especially fond of large shade and ornamental trees, notably oaks, that are hard to get at and make grand breeding places to fill our orchards with the egg-laying millers. Almost everything recommended has been tried to exterminate them. Kerosene emulsion, very strong, applied to the clusters, will kill every time. We use a swab of sheepskin on a long bamboo pole to reach them. To make a swab for emulsion, take a piece of pine 8 or 10 inches long by 1 1/2 or 2 in. diameter, round; cover one end and sides with strong wool skin, well tacked on; bore a hole in the other end to fit the pole. The most effectual method is to spray early and often, as they hatch irregularly. Trees should be sprayed twice before blossoming, using dilute Bordeaux and Paris green, 4 ozs., at first application; watch closely; if not effectual, increase the arsenic to 6 ozs. at the next application. After blossoming you must double the quantity of arsenic to have any effect on them, as when they get big and strong, they appear to fatten on a weak solution. In this town, this season, 16 ozs. of Paris green, with dilute Bordeaux, and 2 lbs. lime additional, to 40 gals. water, have been used and found none too strong to be effectual, and yet has not injured the foliage.

Spraying has been very generally practiced this season, using both insecticides and fungicides. King's Co., N. S. R. W. STARR.

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Practical Notes on Onion Growing.

Watch the weeds and keep them down. A stitch in time saves nine. This is one of the important considerations. As a rule, four hoeings and weedings will do. However, this depends largely on the condition of the ground, how well the work is done each time, and also on the weather. If the surface is stirred every ten days, all the better. After the first hoeing and weeding, if well done, the after-weeding is a pleasure rather than a task. As a rule, hoeing is pretty well over by July.

About the last of August the onions lose their lively green color, and soon fall over, except the scallions and a few others. Where two-thirds or more fall over, pull them, by hand or with a hoe, or a wooden rake, handling them with care. Allow them to lie on the ground for three or four days; then gather into little heaps, about two bags in each, without dew or wet; in fifteen days open them, giving them frequent airings, for three bright, drying days, then house them in a perfectly dry condition. House them in an open, airy place. The floor must be open. Allow the air to circulate all around. A slight frost does not hurt, if not removed in that condition, and if many are grown, it is wise to sell the greater part early, and look out for the balance, as it is difficult to keep them in the right temperature from either growing or freezing.

The Pea Vine Louse.

At the recent joint meeting of the American Society for the Promotion of Agricultural Science and the Association of Economic Entomologists a paper was read by Professor W. G. Johnson, College Park, Md., on the ravages of this insect and the fight against it. A description of the pest was given by him in the *Canadian Entomologist* for February. A small, weak, harmless-looking creature, it came down on the pea plants in May, 1899, a blight as silent and as sudden almost as the destruction of Sennacherib's army. Whole fields turned black and perished, causing the loss of half the crop. The insect is viviparous; some are winged, some wingless, but all are females and parthenogenetic. Beginning to breed when eleven days old, they have six to twelve young daily for nearly a month, so that taking the minimum number, over 400,000 will be produced from one in six weeks. As soon as born they attach themselves to the leaf and remain for two days immovable, sucking the juice of the plant, which is converted into a sort of honey dew, sticky and tarry, ruinous to clothing and even to shoes of persons who go through the field. So numerous are they as sometimes to cover the leaf entirely. A bushel of them is shaken down from a row of peas ten rods long. Spraying was at first practiced to kill them, but this killed also their enemies. Now the system is to plant peas in rows, and to shake off the insects and follow with a cultivator, burying them, when they die within two days, and on the third day the process is repeated.

Their most efficient enemy is the larva of the Syrphus, which devours them at the rate of one a minute, but this in turn has its enemies. Other insects also prey on the aphides, among them the ladybird, beetle and lace-winged fly, and certain parasites attack them. A fungous disease, *Empusa*, has proved very destructive. Their original habitat seems to have been clover, from which last year they emigrated to neighboring pea fields, with such destructive results.

Professor Johnson stated, and others in discussion confirmed the statement, that this insect has appeared in destructive numbers this year at many places. Professor Webster reports its appearance in Ohio. The belief was expressed by several members that the insect may disappear as rapidly as it came.

Dr. John B. Smith, in his comprehensive work on insects in New Jersey, printed as a supplement to the annual report of the State Board of Agriculture, speaks of this insect as having been very injurious to peas in the State in 1899.

Professor Johnson writes from the Maryland Agricultural College, under date of July 2: "The loss estimated along the Atlantic Coast is now placed at about \$11,000,000 for this pest alone this season."

APIARY.**Making Late Swarms Profitable, Etc.**

It is getting a little late for swarms now, but likely several colonies will swarm yet. It is the custom of many beekeepers to have new swarms on a new stand at all times of the year; and while this is often profitable in the early part of the season, it is often ruinous, so far as a crop of surplus honey is concerned, where practiced the latter part of the honey harvest. As the season advances, a different plan is needed from that used during June. The plan is this: As soon as a swarm is seen issuing, take six frames filled with foundation, and also two wide frames of sections, putting the same in a box or hive which is convenient to carry; and at the hive from which the swarm is coming take the frames from the box and place them down by the hive. As soon as the swarm has mostly ceased coming out, the hive is opened, and all of the frames of brood and honey, with the adhering bees, taken out and placed in the box, after which the two wide frames of sections are placed, one at each side of the hive, and the six brood frames put between them. The hive is now rearranged and closed.

There is no trouble about the bees leaving the

combs. If the weather is warm, and there are many bees on the frames, about a third of them are shaken off in front of the hive, when the box is placed in the shade a rod or two away, so the bees from the swarm will not find it when being hived, which is the next thing to do; hiving them in the rearranged hive on the old stand. If the weather is cool, or but few bees are on the combs of brood, omit the shaking off, for it will want all of the bees to keep the brood in good condition. They are taken to a hive which has been placed where the colony is to stand, and arranged in it the same as they were in the old hive; and after tucking them up all warm and nice, they are left till the next morning. At any time during the forenoon of the next day they are given a virgin queen, or a queen cell just ready to hatch, and in this way there is no trouble with after-swarming, for the bees feel so poor at this time that they are glad of anything in the shape of a queen, the flying bees that were taken with the combs of brood having gone back to the old stand with the swarm. If the delay of giving the queen is longer than eighteen hours, this formed colony often becomes so strengthened by the rapidly-hatching brood that they will destroy the queen-cell, or kill the virgin queen, and after-swarming will be the result. Do not give them a laying queen unless you wish a prime swarm from the colony in from eighteen days to three weeks, for the bees will surely use her for such swarming if the honey harvest continues for that length of time.

By this plan a powerful colony is secured on the old stand, which will do as much, if not more, in the sections, than they would if they had not swarmed; for a new swarm will work with a vigor, rarely known to bees under any other circumstances. In ten days, if the honey harvest continues, sections are given to this colony, which has rapidly increased to such from the combs of brood carried in the box; and as the young queen has now commenced to lay, the bees will at once go into the sections, often giving a fair yield of honey; yet the main yield will come from the new swarm, as they have at least one-third more bees than they would had they been hived on a new stand, all of the field-bees returning to this place. The bees returning from the combs of brood and the fields all work with a will together; and as the harvest is at its height also, and the brood-chamber contracted, the storing of honey goes on in the sections at a rapid pace, such colonies often giving from 50 to 100 pounds of "fancy" honey to their keeper, while, if hived on the old plan, little save partly-filled or empty sections would be the result.

If the hive is left as we now have it till winter, the bees are not liable to have sufficient stores; so when the harvest of white honey begins to draw to a close, the sections are taken from the sides, which were placed there at the time of hiving (if they have not been taken out filled before), and the combs necessary to fill out the hive are used to take their places. In this way the bees will fill these last for winter; and should a fall yield occur they will often have some extra stores to spare to help out any weak colony that may be short. The partly filled sections which may thus come from the sides are taken from the wide frames and placed with those which are on top, when the bees will finish them, if the honey season does not drop off too suddenly; or they can be kept and used for "bait" sections the following year.

There are various ways of keeping over these best sections so that they can be nice and clean, ready for use when wanted, such as extracting the honey from them and then placing a lot over some strong colony for the bees to lick the remaining honey off, when they are stored away in a clean, dry place till wanted. Or they can be uncapped and set over some colony short of stores till the honey is carried below. It is a better plan to set the whole lot in the cellar or some dark room, when on a pleasant day the door is opened, giving the bees of the apiary access to them, when, at night, I find them all cleaned up, with very few combs gnawed, provided we give the bees access to them at the right time, so that night comes at about the time the bees have the honey carried away. *Doolittle, in Gleanings.*

Dividing Swarms.

To the Editor FARMER'S ADVOCATE:

DEAR SIR,—My experience with two swarms that entered into a combine may be worth relating for the benefit of those of your readers that keep bees. The problem was to break up the combine, each of the swarms being large enough to take care of itself in a separate hive. The plan adopted was as follows: I took from a working hive a frame containing young brood. This I put into an empty hive, filling up with frames of foundation comb, and into it, so prepared, a reasonable proportion of the combined swarm was induced to enter. It was then removed to its stand. The same course was then followed with a second hive. The next day, the two hives being side by side on the stand, and one being evidently considerably the stronger, they were shifted, the one being made to take the place of the other, since which everything seems to be going on harmoniously in both hives. This is the first time I ever succeeded in effecting a forced dissolution of such a partnership concern. What happened to the rival queens I do not know. As each swarm was made practically independent by the possession of young brood, from which it might supply itself with a queen if lacking, it is not of much importance anyway. W. O. E.

Ontario Co., Ont.

QUESTIONS AND ANSWERS.

(In order to make this department as useful as possible, parties enclosing stamped envelopes will receive answers by mail, in cases where early replies appear to us advisable; all enquiries, when of general interest, will be published in next succeeding issue, if received at this office in sufficient time. Enquirers must in all cases attach their name and address in full, though not necessarily for publication.)

Veterinary.**INDIGESTION WITH BLOATING IN COW**

W. M., Sr., Bruce Co., Ont.:—"I have a pure-bred Shorthorn cow that bloats badly when she gets a full feed of grass, and she appears to belch up wind. I gave her Epsom salts, but that did not seem to do her any good. Will you kindly let me know what to do for her?"

[Your cow suffers from indigestion, due, in all probability, to defective secretion of the glands of the stomach. Put her in the stable and allow nothing to eat for 14 hours except a little bran mash. Then give 2 lbs. Epsom salts and 1 oz. ginger dissolved in 2 qts. warm water. Allow nothing to eat but bran mash until purgation commences, and after purgation ceases, feed as usual, but avoid sudden changes of food, and give night and morning, mixed with 1 pt. cold water, one of the following powders: Powdered nux vomica, 3 ozs.; powdered sulphate of iron, 3 ozs.; powdered gentian, 3 ozs.; powdered ginger, 3 ozs.; bicarbonate of soda, 6 ozs. Mix and divide into 24 powders. If you notice the bloating continue, do not allow large quantities of food, especially green food, for a week after commencing the powders. Feed often and a little at a time. If the bloating should become excessive at any time, give 2 ozs. oil of turpentine mixed with 1½ pint raw linseed oil. Repeat in 2 hours if necessary. J. H. REED, V. S.]

BONY ENLARGEMENT ON CANNON BONE.

SUBSCRIBER, Frontenac Co.:—"I have a yearling colt that struck its leg against the water trough last winter, and now there is a lump on the cannon bone about the size of a hickory nut; it doesn't hurt it very much, but looks bad. What would you advise me to do for it? As an agricultural paper the FARMER'S ADVOCATE can not be beat."

[The lump consists in an increase of bony material and thickening of the fibrous covering of the bone, resulting from organization of the exudate that occurred from the inflammation caused by the injury received. Enlargements of this kind are very difficult, and often impossible, to remove without an operation. It will never interfere with the animal's usefulness, and in all probability will become reduced by absorption as age advances. Absorption can be hastened by friction frequently applied with the hand or by repeated applications of irritant dressings. Get your druggist to make up the following ointment: 1 dr. biniodide of mercury well mixed with ½ oz. vaseline; clip the hair off the part and apply the ointment with smart friction, grease with hog's lard in 24 hours, and daily afterwards until the scale comes off. Apply the ointment every three weeks, and have patience and you will at least succeed in reducing the enlargement. J. H. REED, V. S.]

LARYNGITIS.

SUBSCRIBER, Elgin Co.:—"Young driving horse has a hacking cough of only a few days' standing, but seems to be growing worse. Coughs and sneezes most when trotting against strong wind. I think it is only a cold, but would be glad to have you prescribe. There is not much discharge, but often a rattling in the throat or more especially when checked up, although the check is not short. Otherwise he is in good condition and feels well."

[Your horse is doubtless affected with laryngitis, a disease that is epizootic in some districts. Take good care of him, avoid wet, cold draughts, severe exercise, overheating etc. When the weather is fine, a little gentle exercise will be beneficial. Give soft food, as boiled oats or scalded chop or bran; give all the hay and cold water he wants; feed and water out of high manger, as he will swallow more easily than if he has to get his head down. Give one of the following powders in his damp food 3 times daily: Sulphate of quinine, 4 drams; chlorate of potash, 1½ ounces. Mix and make into 12 powders. Rub the throat twice daily for two or three days (or until it commences to blister) with the following liniment: Raw linseed oil, 2 ounces; oil of turpentine, 1½ ounces; liquor ammonia Fortier, ½ ounce. As soon as it blisters cease its application and apply a little sweet oil daily. If he is not discharging from the nostrils, it would be well to cause him to inhale steam by holding his head over a bucket of boiling water and stirring the water with a wisp of hay. J. H. REED, V. S.]

INDIGESTION IN CALF.

D. P., Wellington Co., Ont.:—"A calf, four months old, got all the milk it could drink till 2½ months old, then took bad scouring. I can give no cause for it. I gave it oil, but no improvement. Got some powders from veterinary, but still it was no better, then stopped taking milk, and takes none now but out of the bottle. After taking milk it has a short cough."

[This calf was overfed on milk, which has deranged the stomach and caused indigestion. Give one of the following powders 3 times daily in a little milk: bismuth subnitrate, 1½ ounces; pepsin scales, 3 drams; powdered nux vomica, 1 dram. All well mixed and divided into 12 powders. Also give, once in two days, a cup of pure goose oil, and when the appetite returns give a teacup of lime water in the milk at each meal.]

LAME HORSE.

J. C. T., Welland Co., Ont.:—"Have a young horse, 5 years old, which goes lame in left fore foot. He has, as far as appearance goes, splendid feet, but last autumn was lame in the right fore foot or leg. I think it is in his foot, as he holds it out in front of him; there is no swelling. I keep his feet nice; runs in box stall, plenty of straw, and keep his feet moist. He is a carriage horse; have a full brother to him, and this one went lame just at fair time last season and was lame for about three months; he gets all over it if you let him stand a day or so in stable, but if I drive him 10 miles he will be quite sore in it next day. Can you tell me what to do for it?"

[From symptoms given, especially the horse holding the foot out or pointing, I should say that he is lame in the foot. The best treatment is to give him a long rest, and blister the coronet every three weeks. Use the following blister: Powdered cantharides and biniodide of mercury, of each 2 drs., well mixed with 2 ozs. vaseline. Clip the hair off for about 2 inches high all around the hoof, put a little of the blister on and rub it well in, put a little more on and rub it, etc. It will take about 20 minutes good hard rubbing. Tie his head so that he cannot bite the parts. In 24 hours rub well again with the blister, and in 24 hours longer wash off and apply some sweet oil or lard. Let his head down now and allow him to run in the box stall, oil the parts daily until the scale comes off. Blister him this way about every three weeks, and give as long a rest as possible. It would be better if he did no work until next spring. Of course that is a long time, but if he be a valuable horse it will probably pay. It would be as well to blister both coronets.] J. H. REED.

LAME COLL - HORSE WITH THICKENED LEG.

J. M., Stormont Co., Ont.:—"I have a colt, two years old, that is very lame in its front feet. Its breast is very badly fallen in, and its hoofs have grown scarcely any since I put it in pasture this spring, and are very hard and dry and uneven. It stood on a plank floor all winter, but had exercise every day; was never broken in, and it is in a low-land pasture now.

"I have another horse, seven years old, that strained his leg between the knee and the fetlock joints last spring. I banded it at the time and washed it twice a day with hot vinegar and salt-petre: lameness all left, but leg is slightly swollen yet. Would you kindly prescribe for these horses in next issue of FARMER'S ADVOCATE, and by so doing you will greatly oblige a reader of your valuable paper."

[The symptoms given are so indefinite it is impossible to arrive at a satisfactory conclusion as to the cause of lameness in colt. Probably the animal has ringbone. If so, there will likely be an enlargement noticed just above the hoof, or it may be the feet have become diseased from inflammation, resulting from too much standing on dry planks. In either case (we take it for granted that the trouble is in the foot or pastern), treatment such as is advised in this issue for J. C. T.'s lame carriage horse (that is, repeated blistering and keeping the feet in as nearly a natural shape as possible) is the best you can adopt. Details for blister and its application same as for "Lame Horse."

2. For the horse with the thickened leg below knee, use the following liniment: 1 1/2 drams each of biniodide of mercury and iodide of potassium, 8 ozs. soft water. Fill an 8-oz. bottle with water, add the mercury and shake. This will make a red fluid. Then gradually add the potassium iodide and shake well; as soon as the liquid becomes clear add no more. Rub the parts, with smart friction, twice daily. When it blisters cease applying, but apply a little sweet oil daily until the parts become smooth again, when you will apply the liniment again until it blisters, then oil, etc., etc. Keep this up until the parts regain their normal size.] J. H. REED.]

LAME MARE.

SUBSCRIBER, Sintaluta, Assa.:—"I have a mare, 7 years old, which has been lame for some time. She was strained in the tendon of the front foot. I took her to a 'vet.,' who gave some liniment, which I have been using all spring. He advised me to use her, but since I have started to work her she seems to keep about the same, walking slightly lame. Will she get better, or can anything be done to cure the lameness? Can she be worked breaking all summer?"

[You have stated that your mare has been lame for some time, which may mean a week, a year, or even longer, judging from the vet.'s diagnosis, "Strained in the tendon of the front foot," and am inclined to believe that the animal is suffering from navicular disease, usually called "coffin-joint lameness," a disease which even in recent cases is often very difficult to treat satisfactorily, and in cases of long standing it is generally incurable. As the mare is only slightly lame, I would merely advise you to keep the foot moist by soaking it in luke-warm water for at least one hour four times a week. Apply a shoe without a toe caulk, but with heavy heels about 1/2 inch in height. By strictly observing this simple treatment the mare may be able to do slow farm work for an indefinite period.] W. A. DUNBAR, V. S., Winnipeg.]

PROBABLY TUBERCULOSIS IN FOWLS.

H. S., York Co., Ont.:—"Last fall I purchased some silver Spangled Hamburgs, and noticed at the time that the cock was afflicted with a slight cough, and I treated for pip, but without success. It has

become worse, and apparently reached the maximum, spreading to nearly every fowl of the new flock, besides old flock of mongrels. The cock has a choking cough almost similar to that uttered by hens when gullet has become clogged through swallowing oats, etc. Hens have same symptoms in a less degree, those newly afflicted hardly exciting suspicion. Two hens have watery nostrils, and one swallows continually, in addition to the cough. The whole flock have healthy red combs; feed well and lay well, and the only batch of eggs set hatched 100%. If this disease is incurable, please say if fowls and their eggs are wholesome to eat?"

[The disease looks like the tuberculosis that affects hens. There is not much chance of a cure for your flock. I would not care to eat the hens, but the eggs are all right for use. The cock acts like what pheasants do which have the tuberculosis, and lay well and look fairly well for a long time, and suddenly die. The birds soon get very light in weight. I would think they are incurable. It looks to me like a form of tuberculosis. The treatment should consist of destroying all affected birds; give the healthy ones isolated quarters, and thoroughly disinfect the premises where the sick fowls have inhabited.] H. A. STEVENSON, M. D.]

INFECTIOUS OPHTHALMIA IN CATTLE.

E. M., Wellington Co., Ont.:—"Having received some excellent advice on different occasions from the Questions and Answers columns of your paper, I submit a few questions in relation to a disease that is affecting the cattle in this locality. The only visible symptoms seems to be on the eyes; first they run water very freely for a few days, sometimes swelling a little, and some a great deal; also a scum comes on them, which in most cases ends in temporary blindness. If you can draw any conclusions from these symptoms, will you kindly answer the following questions:

- "1.—What is the name of the disease, and is it contagious?
"2.—Is it a constitutional disease, or is it merely an affection of the eye?
"3.—The cause, if known?
"4.—Treatment, if any?"

[The disease described is a malady that has been epizootic in different sections of the Province for 4 or 5 years. To the questions I give the following answers:

- 1.—Infectious ophthalmia—some call it epizootic cellulitis, but the former more nearly expresses the conditions. It is infectious and contagious.
2.—It is a local disease, affecting the organ of vision, but in severe cases constitutional, occurring from sympathy.
3.—Infection.
4.—Isolate all affected animals, keep in comfortable and partially darkened stables, in order to protect the eyes from the sun, wind, etc.; feed lightly on easily-digested food; give each a purgative of from 1 to 2 pounds Epsom salts, according to size and age.

Bathe the eyes well with warm water three times daily; and after each bathing drop a few drops of the following lotion into each eye: Sulphate of zinc, 12 grs.; fluid extract belladonna, 15 drops, distilled water, 2 ozs. Get an assistant to catch the animal by the nostril and horn and turn his head sideways; then with the thumb and forefinger of left hand part the eyelids and let a few drops fall into the eye out of a dropper or even a small bottle. If a bulging and ulceration of the eyeball take place, it will be necessary to touch the part once daily with a stick of lunar caustic. Should the eyeball rupture, have patience and continue treatment and in most cases you will succeed in effecting a cure. Should a portion of the eye remain of a whitish color (resembling a scum), after the inflammation ceases you can either carefully touch with lunar caustic daily or use a lotion composed of 5 grs. nitrate of silver to 1 oz. water.] J. H. REED, V. S.]

Miscellaneous.

HESSIAN FLY (Cecidomyia destructor).

JNO. LAING, Wentworth Co., Ont.:—"I noticed sickly stalks of fall wheat amongst the healthy ones on or about the 20th or 30th of June last, some of them toppling over. Since the beginning of this week I have taken special notice of the crop, which was good, and every day the broken-down stalks were more numerous, and now to-day you would be sorry to see so much fine wheat destroyed by some insect pest which seems to burrow in the first or second joint near the ground; and so much is killed and fallen over now that it is difficult to walk through the crop. I herein enclose 3 stalks picked up, and send you to examine, and if you know its name and habits, will be pleased to hear from you. This is a great disappointment to farmers looking forward to the reaping of a good crop of fall wheat of No. 1 quality. If the wheat keeps going on at the same ratio until the wheat is ripe, there can't be much left. Every farmer we meet is wondering what is destroying the fall wheat."

[Word comes from many of the fall wheat growing sections of Ontario, of serious destruction of the crop by Hessian fly. The stalks received were evidently killed by that insect, which is one of the oldest and best-known insect pests of American agriculture. It has ranked as a destructive species for more than a century, and has followed the introduction of fall wheat wherever it has been grown. The mature adult is a small two-winged mosquito-

like fly, the females of which deposit their eggs on the upper surface of the wheat blade, early in autumn. In a few days the larvæ hatch, and each descends the leaf to the base of the sheath, where it attaches itself head downwards to the stalk, where it remains stationary. When full-grown (which occurs in three or four weeks from the time of hatching) the larva is a soft, white, footless maggot. Its outer skin now becomes hard and brown, and separates from the rest of the body, although it still surrounds the latter, forming a sort of cocoon, or, as it is more correctly called, puparium, within which the insect changes to a pupa. This is the flaxseed state, so called because of the resemblance of these brown puparia to flaxseeds. The winter is usually passed in this condition, and in spring the flies emerge from the flaxseeds to lay eggs for another brood. The larvæ of the fall brood affect the young wheat plants just above the roots, between the stalk and sheathing base of the leaf, but the spring generation are formed a little higher up, at the joints an inch or more above the soil surface. This second generation completes its transformations before harvest, and there is often, if not always—at least as far north as the latitude of 40 degrees—a third brood, which develops during summer in volunteer wheat; and Professor Forbes has shown that there may occasionally be even a fourth brood during the year. But the chief damage is done by the fall and spring broods. By the ravages of this insect the fall wheat crop in several States in the American Union and Ontario has this year been practically ruined.

Remedies.—The most promising method of preventing the injuries of this insect appears to be that of inducing the flies to deposit their eggs in young wheat, and then destroying it. When a third brood develops in volunteer wheat, this end may be accomplished by turning under this volunteer growth when the Hessian fly larvæ are about half-grown; or in case no such brood develops in the volunteer wheat, a few strips in the field may be seeded to wheat a few weeks before the regular planting time, and the flies will lay their eggs in these, which are afterwards to be plowed under. Thus the main crop will escape infestation.—Prof. C. M. Weed, in Insects and Insecticides.]

RE "MARE KICKS OVER TONGUE."

Reply to query in issue of June 15th: Put a Rockwell bit and attachment on your bridle. Fit your harness snugly all over. Draw down the running keeper on the face, and fasten it to position, bring the head well up with checkrein. Do not whip for kicking in harness, always speaking kindly. The Rockwell bit is an old one, but it is new enough for the most of kickers. It is also neat and tidy. F. W. M.

Perth Co., Ont.

CATERPILLARS ON WHITE TURNIPS.

G. W. McK., P. E. I.:—"Could you give me any remedy or preventive for the preservation of the late white-fleshed turnip from destruction by worms. For two years past our late white turnips have been almost completely ruined by a worm about 1/2 of an inch in length, which, after stripping the leaves, thus preventing any growth of bulb of any consequence, then attacks the bulb, riddling them full of holes and causing them to rot. I was afraid to use Paris green for fear of injury to the cattle. Have a piece of land left yet on which I intended to sow white turnips if I knew of any way to save them, but if not, it will be no use to do so."

[In reply to Mr. McK.'s enquiry concerning the destruction of his late white-fleshed turnips by what he calls "a worm," it is, of course, impossible to know what he means by such an indefinite description, but from the fact that he says it is 1/2 of an inch long, and strips the plants of their leaves, I judge that it was some kind of leaf-eating caterpillar. The proper treatment of the foliage-eating caterpillars of the turnip is to spray them with Paris green, putting a little flour in the water to make it adhere to the foliage: One pound of Paris green, 1 pound of fresh lime, 4 pounds of flour, and 100 gallons of water. If this mixture is sprayed over the turnips at the time the caterpillars first appear, there is not the slightest danger of injuring stock; the roots have not yet formed, and the small amount of Paris green which falls on each plant has long disappeared before the turnips are fed, and at any rate the tops are cut away, so there is no possibility of the poison doing any harm. If no spraying pump is available, a dry mixture may be dusted over the plants. One pound Paris green may be mixed with 50 pounds land plaster or cheap flour and dusted over the plants. This should, if possible, be done in the early morning when there is dew on the plants. Three or four years ago there was an outbreak of the clover cutworm in the counties lying round Rice Lake, Ont.; both peas and turnips were attacked, and Paris green was found to be the best remedy on the latter crop. There is still ample time for Mr. McK. to sow his late turnips and get a good return. The application of the poison should be made as soon as possible after the caterpillars are seen to be at work. It would be far easier to give definite and useful information if farmers would send with their enquiry, or whenever they see insects injuriously abundant, specimens of the insect, with a description of the way in which it is destroying the crop. There are several kinds of caterpillars which feed on the leaves of turnips, and when the leaves are all eaten some of them will eat cavities into the roots.] J. FLETCHER, Entomologist. Central Experimental Farm, Ottawa.]

THE QUIET HOUR.

Members One of Another.

"It was only a sunny smile,
And little it cost in the giving;
But it scattered the night
Like morning light,
And made the day worth living.
Through life's dull warp a woe it wove
In shining colors of light and love,
And the angels smiled as they watched above,
Yet little it cost in the giving.

"It was only a kindly word,
And a word that was lightly spoken,
Yet not in vain,
For it stilled the pain
Of a heart that was nearly broken.
It strengthened a fate beset by fears,
And groping blindly through mists of tears
For light to brighten the coming years,
Although it was lightly spoken.

"It was only a helping hand,
And it seemed of little availing,
But its clasp was warm,
And it saved from harm
A brother whose strength was failing.
Its touch was tender as angel's wings,
But it rolled the stone from the hidden springs,
And pointed the way to higher things,
Though it seemed of little availing.

"A smile, a word, or a touch,
And each is easily given;
Yet either may win
A soul from sin,
Or smooth the way to heaven.
A smile may lighten the falling heart,
A word may soften pain's keenest smart,
A touch may lead us from sin apart—
How easily either is given."

A Living Unity.

St. Paul's statement that the members of a body

are united so closely together that "If one member suffer, all the members suffer with it; or one member be honored, all the members rejoice with it," gains new force in the light of some recent scientific experiments. When certain exercises were practiced by the right hand alone for nine days, not only did that hand increase about 70 per cent., but the left hand also, which had not been practiced at all, had gained about 50 per cent. The same result appeared in similar experiments. A professor of music also experimented with twenty of his pupils. After practicing scales and exercises for two months with the right hand alone, it was found that the left hand, absolutely without practice, had gained in skill and speed almost as rapidly as the right. In addition to tests proving that one arm affected the other, it was satisfactorily proved that to exercise one member was to influence the whole body to some extent. Does not all this show that the Scriptural statement of the unity of the body is supported by modern science? It has taken clever men nearly two thousand years to prove to their own satisfaction an important truth revealed so long ago. They are also beginning now to show their practical belief in this truth as it applies to mankind. See how quickly the suffering of the members in China has thrilled the whole body. If one member suffer, all the members suffer with it; if one member perish unjustly, all the members are roused to avenge it. The civilized world has also begun to see that "Those members of the body which seem to be more feeble are necessary; and those members of the body which we think to be less honorable, upon these we bestow more abundant honor." The weak, in mind or body, receive more attention than the strong. To oppress or ill-treat helpless members means to injure the whole body. We are closely linked together, and, as in the experiments I have described, to educate and strengthen one part of the body is an advantage to all the rest. The law does not insist on the education of each child solely for his own sake. If one member have an infectious disease, it is not his own life only that is endangered. The health officers do not inspect a man's drains or back yard because they think his individual value is very great, but because he cannot breed germs of disease without endangering the whole community. Selfishness in national matters is a crime against the country. Selfishness in the home is a crime against the family.

But it is very little use seeing the truth of this unity of the members one with another, unless we carry it out in some practical fashion. Some people show real sympathy in a very delicate way. When neighbors are in trouble they send a kind note, a few dainty flowers, or some other welcome little gift. In times of joy, too, they show their fellow-

feeling in the same thoughtful fashion. Are we letting such opportunities slip by us unheeded?

"We can all do more than we have done,
And not be a whit the worse;
It never was loving that emptied the heart,
Nor giving that emptied the purse."

May I suggest one more thought, and that is the comforting truth that death cannot break this living unity. Dear friends who have passed out of our sight are still with us, members of the one body. We may not be able to speak to them, but we can speak to Christ, and He is in closest communion with them. HOPE.

An Apron Worth \$50,000.

There has recently come to light an apron—probably the most exquisite example of needlework extant—that busied the fingers of hapless Mary, Queen of Scots, during her long imprisonment, and served to divert her mind from the impending doom at the block. The fallen sovereign—all hope gone—centered her interest upon it during the latter part of her long confinement, and created the masterpiece of needlework. Just before her execution she secreted her prized apron under the lining of one of her robes, which kept her treasure safe until recently the garment was ripped apart. Its history has since been fully authenticated through letters written by the ill-starred Queen to a friendly ambassador at Paris, who smuggled the materials out of which it was wrought into her dungeon. By strange chance the apron came into the possession of an American, who has refused \$50,000 for it, and has also declined \$5,000 for the privilege of unraveling a single stitch to learn its secret, which is a mystery to all the experts. Its owner has consented, however, to its reproduction in large size in the *June Ladies' Home Journal*.

complete restfulness to the whole scene which is charming. This is one of those "tireless" pictures, if we may so name it. Imagine the rich and varied tints in this shady meadow! Imagine the luxury of lying in its friendly shelter, forgetting for a time life's worries, whilst drinking in the loveliness of nature, the grandeur of God's work!



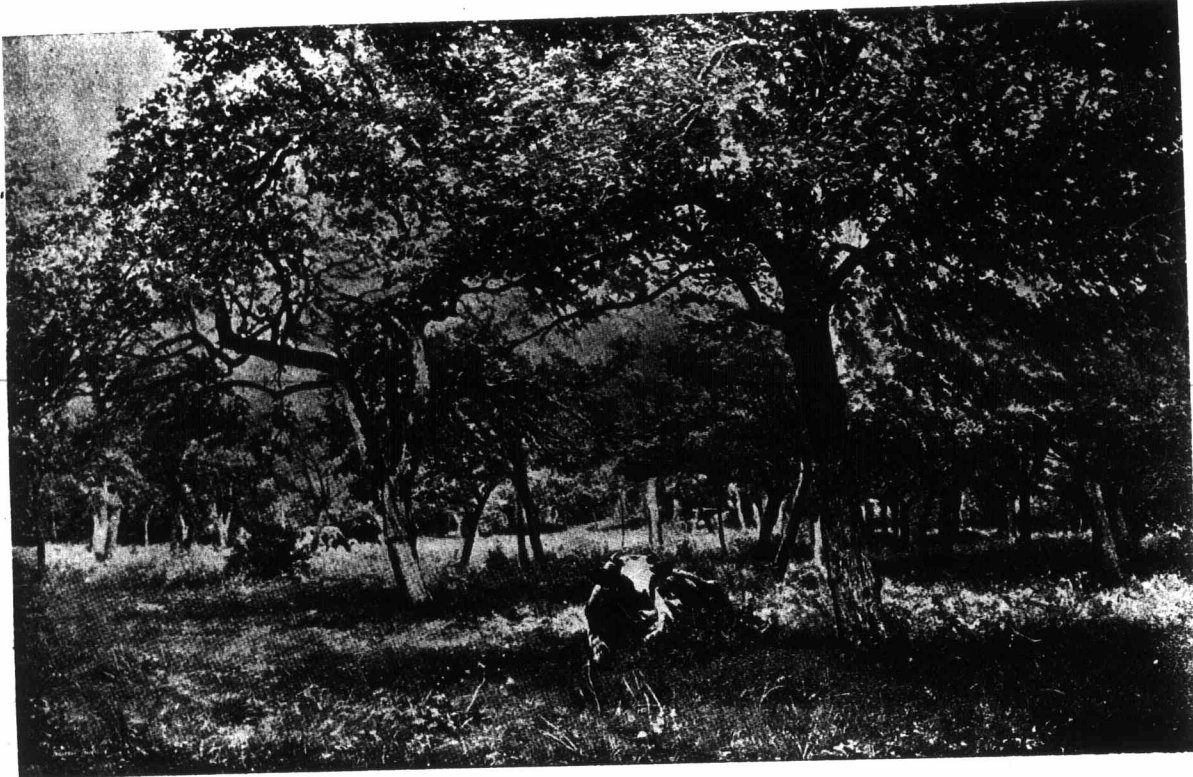
DEAR CHILDREN,—

You will be glad to hear that the "Lookout Regiment" is still growing. Names of new recruits are: Edith Bowman, Hilda Bowman, Frank Manners, Lillian Robson, Minnie Dickson, Alfred Johnson, John Graham. This competition closes at the end of August, but I hope to announce another before long, open to all who have enlisted. In the *Advocate* for June 15th you will find full directions for this first competition. All letters should be addressed to *Cousin Dorothy, Box 92, Newcastle, Ont.* If you have sent for a badge and have not received it, let me know. Letters sometimes go astray, and I don't want any of you to be disappointed. I hope you are all enjoying the holiday-time, and are reasonably careful not to eat too much green fruit. Green apples may be very nice, although tastes differ on that point, but the medicine you have to take afterwards is not so pleasant.

Talking of medicine, did you know that many of the animals are pretty good doctors, and take medicine when they need it, without making half as much fuss as you children often do? When bees are not very well they suck pieces of dogwood, poplar, wild cherry, or hickory, and soon cure themselves. Dogs have found out that grass is a good medicine. Cattle with the "scratches" have been known to cover the painful parts with a mud poultice, and then stand still until it has dried, when it acts as a healing plaster. Hunters sometimes declare that they have seen elephants plugging shot holes with moistened clay. Cats will go miles, when they are feeling "under the weather," for a dose of catnip. A gentleman was once out hunting rabbits, after a snowstorm, when he saw his house-cat making her way with difficulty through the deep snow. He wandered why she came so far from the warm kitchen on such a cold day, so he followed her.

She went about three miles and then scratched in the snow until she found a bunch of catnip, which she began to eat. That cat had certainly great faith in the power of medicine. When dogs, cats, and other animals lick their wounds, it not only keeps them clean, but also helps to cure the sores. Do you remember a poor beggar, spoken of in the Bible, who had no friends but the dogs? They came and "licked his sores." Probably they were trying to do all they could to help him. Sometimes an animal has a wound on its back, out of reach; then some good Samaritan in the shape of a fellow dog, cat or monkey will step in and doctor it by licking the injured parts.

Several years ago there was a big ape in St. Louis that had to be kept in a cage by himself, because he was so wicked. A board partition divided the cages. One day he discovered a crack, and soon made it larger with his sharp teeth and strong fingers. Then he put his paw through the opening and caught a smaller monkey, which he severely injured. A keeper nailed a board over the hole. One of the nails was very long, and came right through. Soon after, the big monkey was dashing about his den in a fit of anger, when he ran against this nail and scratched his shoulder pretty badly. He stopped at once and examined the hurt with his fingers, then he went to a corner of the cage where there was a box of clean sawdust and pressed a handful on the bleeding scratch. The sawdust soon stopped the bleeding, and also covered the wound, keeping it safe from the attacks of flies. Don't you think he showed great cleverness in using to such good purpose the only remedy within reach? But if he had only been as good as he was clever, he wouldn't have got hurt at all. Here are some verses called "The Bee's Wisdom," which are pretty, even though they may not be founded on fact, for I have heard that some honey is poisonous.



"SHADY MEADOW."

What Troubled Pat.

An old Irish laborer walked into the luxurious studio of a New York artist and asked for money to obtain a meal, as he was too weak to work. He was given a quarter and departed. One of the young lady art students who was present said: "Mr. M., can't we sketch that old man?" M. ran out and caught him, and said: "If you want to make a dollar, come back. The young ladies want to paint you." The Irishman hesitated, so M. remarked: "It's an easy way to make a dollar." "O' know that," was the reply, "but O' was awonderin' how O'd git th' paint off."

A letter has been received from a farmer's daughter relating to the article, "Her Money Makers." If we remember rightly, the chief point of discussion was whether time or means could be found for theatres, concerts, operas, etc., and we might mention that *Wagner* operas (which were mentioned) are very expensive.—ED. HOME DEPT.

"Shady Meadow."

A wonderful charm lies in this picture. The perspective is very fine, and we can peer and peer into the depths of the noble trees and imagine that the shady meadow is infinite. This is especially noticeable to the right of the picture. What a thoroughly contented air has that wise-looking cow! Some of her companions are still grazing in the distance, but she has evidently come here for a rest, and, perhaps, to work out some bovine problem regarding matters of moment in her domain. Perhaps the sly thing knew that a picture of this lovely spot was going to be taken, and thought what a pretty addition to the foreground she would make. Cows may have a little pardonable vanity, like *other feminines!* Well, anyway, she has succeeded in adding a touch of

Said a little wondering maiden
To a bee with honey laden,
"Bee, at all the flowers you work,
Yet in some does poison lurk."
"That I know, my little maiden,"
Said the bee with honey laden:
"But the poison I forsake,
And the honey only take."
"Cunning bee, with honey laden,
That is right," replied the maiden;
"So will I, from all I meet,
Only draw the good and sweet."

Well, I must say good-bye now, wishing you all
a very happy holiday. Your loving friend,
COUSIN DOROTHY.

Travelling Notes.

LEAVING AUSTRALIA.

Someone says, "Parting is such sweet sorrow," but it seems to us that partings are all sorrow, and we don't see exactly where the sweetness comes in, however much we may desire to see loved ones again, and feel that we are—although still so many thousands of miles away—coming home; yes, to part from Australia was a wrench. It would be utterly impossible to describe adequately all the loving kindness we have met with. No words can paint it; so let it suffice that it is a beautiful, glowing remembrance which can never die in our hearts, but will bloom and bloom again with unfading radiance.

After leaving our relatives in South Australia, we passed a few days in Melbourne and Sydney, which gave us a further view of those important places. Certainly Sydney, to us, is the most interesting of the chief cities. In some respects, the palm may be given to Melbourne, whose public buildings are, perhaps, more imposing, but the picturesque surroundings of Sydney, its magnificent harbor especially, place it first in interest and beauty. Whilst in Melbourne, we had a delightful excursion to one of those lovely hilly districts where the fern trees luxuriate over everything and make the landscape a glorious vision of beauty. We stayed the night in a lonely, but comfortable, hotel, The Hermitage, right in the mountains. Oh, but it was lovely indeed! We then returned by coach-and-four and train. When shall we ever see such ferns again as one sees in Australia?

It seems as though Sydney possesses all the requisites for an ideal home. A city of beautiful buildings and streets, with numerous advantages, and surrounded by the loveliest seaside and riverside resorts. Hawksbury River has been called "The Rhine of Australia." There are also highland residences within a few miles, which are much resorted to in the very hot seasons, and where the breezes are said to be most invigorating. Only about ten miles from Sydney is a most popular resort, "Manly," where the scenery is beautiful. It is worthy of mention that the "Australia" is not only Sydney's best hotel, but is considered by experienced travellers to be the most comfortable and luxurious, with the best service, of any hotel in America or Europe! This is high praise, when one thinks of the veritable palaces which are the "Australia's" rivals on both continents. But it is not always size which tells in these matters; as old travellers well know. It is interesting to note also that the prices are absurdly low, as compared with those we are accustomed to. We quote the prices of this magnificent hotel alone (including all meals), and for convenience we quote prices in dollars and cents: single rooms from about \$3 a day, double rooms \$7 a day, suite of rooms \$10 a day. The Hotel Metropole and others of this high class are equally moderate, whilst the others, including good boarding houses, range from about 70 cents to a dollar a day, and less by the week. Remember that the first prices quoted are for hotels which in the larger cities of America would be from \$5 to \$10 or even \$20 a day. Although the difference is noticeable in all, it is chiefly so in these higher-priced hotels. After a couple of days in Sydney, we bid a final adieu, and left Australia's hospitable shores with a heavy heart. To cheer our journey home we have with us a fine young cockatoo, just learning to talk; some dear little love-birds, some magpies, and a lovely pink jubah, and some of these (certainly the cockatoo) will go home with us, and make acquaintance with a rather different climate to the one in which he flies about in the forest with his particular friends, the parrots, and others. And so we sailed away in the good ship Warrimoo out of lovely Sydney harbor. Good-bye, good-bye.

Our Library Table.

"THE LIFE OF D. L. MOODY." The death of so celebrated a man has naturally brought forth several biographies of his life, which will be read with deep interest. In his special sphere, Dwight L. Moody stood out unique, enduring a truly wonderful man—of such deep earnestness of purpose, such marvellous eloquence that none could hear him and be unimpressed. The volume before us is by J. N. Hallock, D. D., and others, and gives an intimate insight into his fine character. Published by Poole Publishing Co., Toronto.

"HER LADYSHIP'S ELEPHANT." D. D. Wells.—Anyone who is on the lookout for a thoroughly amusing book should not pass this by, for if it cannot cause irresistible laughter through its intensely amusing situations, we don't know of any book which can.

Recipes.

EGGS, CHEESE AND TOAST.

This is decidedly novel, and by no means difficult or expensive to make. Take some slices of bread, toast them, butter thickly, and cut into squares, and on each square put a quarter of a hard-boiled egg. Melt in a pan on the fire any pieces of dry, hard cheese you may have; season with a little salt, pepper, and mixed mustard. Pour this over the egg and brown before a clear fire. Serve hot. This is a good way to use up old pieces of cheese which are too hard to be eaten in the ordinary way.

RHUBARB JELLY.

Should not be made earlier than June. Cut, not break, the stalks from the roots, wash and slice, add a very little water, cook until soft, and strain through cheese-cloth, squeezing lightly. For every pint of juice allow a pound of granulated sugar. To every quart add the juice and rind of half a large lemon. Boil briskly fifteen minutes, meanwhile heating the sugar in a shallow pan in the oven. It should be very hot, but not scorched. Skim out the peel, add the sugar, stir, and when it boils briskly, turn into jelly glasses, set on a folded towel wrung from cold or warm water. All jelly should be exposed to the sun twenty-four hours, protected with mosquito netting. A thin covering of melted paraffin is a sure preventive of mold.

TOMATO JAM.

Scald, peel and slice the tomatoes. Use two pounds of sugar to one of tomatoes, boil together until well thickened, then add one tablespoonful of white ginger, the juice and peel of two lemons, for every three pounds of tomatoes. Cook until very thick, skimming off the froth as it rises. Before putting into jars remove the lemon peel.

RHUBARB.

Allow "pound for pound." Cut the stalks in rather small pieces, add the sugar, and let stand several hours, or until the juice is extracted. Turn off the liquor and boil until it thickens, put in the rhubarb and let simmer until done.

CHERRY.

Weigh the cherries before removing the stones. Stone them and boil them until the juice is nearly evaporated; add half a pound of sugar for each of fruit. Add also a pint of red currant juice for each six pounds of cherries, and half a pound of sugar for each pint of currant juice.

GOOSEBERRY CUSTARD.

Boil a quart of gooseberries in half a pint of water, add a piece of butter the size of a walnut. Boil the gooseberries quickly, and when soft, pulp them through a sieve. Add three-quarters of a pound of sugar, and the yolks of four eggs. Stir over the fire till thick, but do not allow the berries to boil. Serve in custard glasses or a glass dish.

Seizing Their Opportunities.

The manner in which American boys have grasped the opportunities that have come to them, and have made others for themselves, is interestingly told by Success. We select two instances and present them to our readers, with the request that they remember that opportunities wasted cannot be regained, and leave us the poorer because we have rejected them.

Only thirty-five years ago, in a sleepy little town in Maryland, a boy of twelve was hired, at a dollar and fifty cents a week, to run errands and keep the ink bottles filled in a merchant's office. The town was Cumberland, and the boy was George L. Wellington. For six years the little chap performed all the duties of the position, finding time also to practice penmanship and to study bookkeeping. The merchant happened to be a director in the Second National Bank in the same town. One day a vacancy existed in a clerkship in the bank. The merchant recommended young Wellington, "the best boy I ever had around the place," as he termed him, and he was appointed. From a clerk he became the teller at twenty-one, and soon after he came the treasurer of his county. On the fourth day of March, 1897, he took his seat as a United States Senator. The other Senator from Maryland, Arthur P. Gorman, congratulated his colleague warmly, and reminded him that he too had gone to work, at the age of twelve, at a salary almost equally small, not as an office boy, but as a page of the Senate in which both are now members.

"This theory about fish being brain food is all nonsense."
"Why do you say so?"
"Because the greatest number of fish are eaten by the very people who are idiots enough to sit out all day waiting for them to bite."—Brooklyn Life.

There was a piece of cold pudding on the lunch table and mamma divided it between Willie and Elsie. Willie looked at his pudding—then at his mother's empty plate.
"Mamma," he said earnestly, "I can't enjoy my pudding when you haven't any. Take Elsie's."
Life.

Officer—I understand that you and Private Peterkins were calm and collected when the explosion occurred at the powder magazine.
Pat—Well, I was calm, but poor Peterkins was collected.

Puzzles.

[The following prizes are offered every quarter, beginning with months of April, July and October: For answers to puzzles during each quarter—1st prize, \$1.50; 2nd, \$1.00; 3rd, 75c. For original puzzles—1st, \$1.00; 2nd, 75c.; 3rd, 50c. This column is open to all who comply with the following rules: Puzzles must be original—that is, must not be copied from other papers; they must be written on one side only of paper, and sender's name signed to each puzzle; answers must accompany all original puzzles (preferably on separate paper). It is not necessary to write out puzzles to which you send answers—the number of puzzle and date of issue is sufficient. Partial answers will receive credit. Work intended for first issue of the month previous; that for second issue not later than the 5th of that month. Leave envelope open, mark "Printer's Copy" in one corner, and letter will come for one cent. Address all work to Miss Ada Armand, Pakenham, Ont.]

1—NUMERICAL ENIGMA.

I am composed of 22 letters.
My 19, 17, 9, 11, 16 is a guard.
My 22, 8, 6, 14 to incite to evil.
My 18, 12, 3 to fondle.
My 2, 7, 20, 5, 13 quality of enraging hate.
My 4, 15, 21 is a bird. F. L. S.
My whole is a good motto.

2—CHANGE OF VOWEL.

(Example: same, some.)

Her gifts were many. She could make good pies.
To mix great ones of dough was her delight.
And then her bread was always sure to rise.
Her cake was lovely and her biscuit right.
And she could write, no matter what the theme.
She ever gave one something good and new.
Her letters cheered one like a sudden gleam.
There almost seemed some magic in her two.
And she could sew; with nearly faultless taste.
She'd fashion bonnets, trim and snip and THREE;
Dressmaking too; she'd never cut to waste.
Her perfect fits were beautiful to see.
And she had wit; loved FOUR and repartee;
With learned divines on ologies could talk.
And yet her husband sighs—how selfish men can be—
This gifted woman never darned a sock! F. L. S.

3—PI.

Niebert a reworrob orn a rendlegh.
Orf anol fot essol hobt isleff dan dander.
Dan wongbirro skull het geed fo bandhuryrs. F. L. S.

4—DROP VOWEL—HIDDEN NAME—SENTENCE PUZZLE.

1—G-v-m-b-l-b-l-f-br-ss.
2—T-l-ndr-w-t-b-qu-ck.
3—d-r-t-l-ft-th-br-w-n-m-s-br-d-n.
4—Y-u-r-f-l-f-y-s-n-y-o-sly-l-d-f-x.
5—G-r-ssh-p-p-r-s-m-m-dly-t-d-l-ght-n-j-m-p-s.
6—Th-r-b-b-r-t-d-th-r-v-m-s-ry-j-w-nd-th-n-r-b-b-d-h-m-f-h-s-g-l-d.
7—Th-m-st-r-d-s-n-t-w-sh-t-m-r-y-r-pl-s-r-r.
8—H-sh-wr-th-ll-fr-n-th-l-z-y-s-d-rry-wk-ns.
9—str-ck-th-d-g-w-th-th-fr-sh-v-l-l-n.
Each sentence contains the name of a girl.
Take a word from each sentence and form a sentence containing all the letters of the alphabet. IKE ICELE.

5—OBLIQUE.

(Reads the same down and across.)

1, a letter; 2, in the E. Indies, an umbrella; 3, an E. Indian lady of high rank; 4, the south-east wind; 5, in Hindustan, a Mohammedan learned in the law; 6, sluggishness; 7, rubbish of mines; 8, in Arabia, a wise man; 9, a fruit; 10, to attack as a crowd; 11, a letter. ROLLY.

6—CROSSWORD.

In paid, but not in borrow.
" wall, " sorrow.
" aid, " help.
" bark, " yelp.
" day, " night.
" peace, " fight.
" bake, " brook.
" water, " sleep.
" rest, " brook.
" high, " deep.

The whole, in history, gives a name
Where the Beaver's Sons achieved great fame. NOTA BENE.

7—BEHEADINGS.

Behead to be indebted, and leave a pronoun.
Behead a river, and leave a useless plant.
Behead a tree, and leave a wind instrument.
Behead a sentence, and leave a person under a guardian.
Behead to be destitute, and leave an insect.
Behead improperly, and leave a young woman.
The beheaded letters will form a city in Canada. FLO.

Answers to June 15th Puzzles.

1 The dictionary.
2 c
c h a
c h a s e
c h a m p a c 3—As-sets.
a s p e r
e a r
c

4 Pa tent.
5 P ink, a part, r ant, i deal, s camp—Paris.
6 Life.
7 Tides reversed it.

SOLVERS TO JUNE 15TH PUZZLES.

"Diana," Lizzie Conner, "Ike Icele," Sila Jackson, "Flo," M. R. G.

ADDITIONAL SOLVERS TO JUNE 1ST PUZZLES.

M. R. G., "Ike Icele," "Sartor," Lizzie Conner, Sila Jackson.

COUSINLY CHAT.

Lizzie C. I think most, if not all, the puzzlers are like your self in not knowing any of the cousins. You have done well this quarter.
Nota Bene.—You did not comply with all our rules the first time you sent puzzles. We will use all that are suitable for our column.

Sila J. You were very close to the winners, and would perhaps have secured a prize had you not missed the first issue of the quarter. You have still a chance for the special prize, which will soon be awarded.

The prizes for April, May and June are awarded as follows:
For original puzzles—1st and 2nd, Howard Mills (Rolly), Malakoff, Ont., and G. J. McCormac (Ike Icele), St. George's, P. E. I., equal; 3rd to F. L. Sawyer, Toronto, Ont.

For answers—1st to M. R. Griffith, London; 2nd to Miss Lizzie Conner, Hyde Park, Ont.; and 3rd to Miss Helen McQueen (Diana), Salem, P. O., Ont.

Sila Jackson and "Ike Icele" were the closest competitors in this contest. Those trying for the special prize should be particular to send answers to both the July numbers, as this issue closes that contest. Get your work in early. ADA ARMAND.

SECOND ANNUAL SALE OF HIGH-CLASS SHORTHORNS

FROM THE TROUT CREEK HERD OF W. D. FLATT, HAMILTON, ONT.,

AT

DEXTER PARK, UNION STOCK YARDS, CHICAGO,

ON

Tuesday, August 7th, 1900.

60 IMPORTED AND HOME-BRED SCOTCH SHORTHORNS.

Including 20 imported young cows in calf or with calves at foot; 20 imported heifers, served by noted bulls in Britain, or by high-class imported bulls in Canada; 6 choice imported bulls, one to three years old; 5 imported bull calves; 2 home-bred bull calves; 2 first-prize Canadian-bred two-year-old bulls, of first-class Scotch families; 10 choice prizewinning Canadian-bred cows and heifers. This is admittedly the best consignment of high-class Shorthorns ever offered at public sale in America, and comprises

Show Bulls and Show Cows

that will be sure winners, and are regular breeders. Also heifers and bull calves FIT TO WIN in first-class company. Cattle purchased at this sale will return to Canada on the tuberculin test which has been made to admit them into the U. S. Catalogues will be sent on application to

Col. F. M. Woods, W. D. Flatt,
AUCTIONEER. HAMILTON, ONT.

GOSSIP.

W. D. FLATT'S GREAT SHORTHORN SALE.

A great event is foreshadowed by the announcement of the forthcoming disposal of 60 head of valuable imported and home-bred Shorthorns at Chicago, on the 7th of August, inasmuch as the collection comprises undoubtedly the best collection of Shorthorns ever presented at public sale on the American continent, and the offering is made at a time when cattle of this character are wanted as never before, and at the place where of all others the stockmen of America can most conveniently congregate. The limits of space make extended reference to individual animals in the list impracticable, and condensation imperative, so that we can in these lines make but brief mention of a few of what appeared to us, on a hurried inspection, to be the most outstanding numbers in this remarkable consignment.

Beginning with the bulls, and taking them in the order of age, we find at the head of the list imported *Golden Fame*, of the favorite Kinellar Golden Drop family, in his 3-year-old form, having been the chief stock bull in service in the Trout Creek herd for the last two years. The pick of a choice importation, and the son of one of the best cows in Aberdeenshire, having for his sire the magnificent, prize bull at Perth, the second highest priced bull of his year at the sales, and a son of the great Cruickshank show bull and sire, Dauntless, Golden Fame's prepotency as a sire, as seen in the uniform excellence of the character of his calves, comes to him honestly in the line of individual excellence by inheritance. Sound, smooth and straight in all his lines, evenly covered with a good quality of flesh, standing squarely on legs of the best texture, and taking also into account his success as a tested sire, it is doubtful if he could be duplicated in Britain to-day for less than \$5,000, and we can well believe it is only the desire to make the offering of bulls a strong one in the interest of the breed that has induced Mr. Flatt to include him in the sale. The massive roan home-bred 2-year-old bulls, *Royal Banner* and *Royal Standard*, sired by Judge (the great son of imported Royal Sailor, from Upper Mill, and of a Kinellar Mina dam, a first-prize Toronto winner as a yearling, and champion at the Winnipeg Industrial in 1898), were up and tuck at the three principal shows in Canada last year, standing first and second in turn, and are big, sappy bulls, with grandly covered backs, carrying the best quality of flesh, and in the pink of condition. *Orange Chief*, a rich roan, bred in Aberdeen, coming 2 in December, sired by the Duke of Richmond's Orange Duke, by Musgrave, a richly bred Marr Missie, and tracing on his dam's side to Cruickshank's Butterflies, is a blocky bull with a capital back, standing squarely on his pins, and promising to make a very impressive sire. *Prince of Dalmeny*, a rich red yearling in March, bred by Earl of Rosebery, got by the Collynie-bred Scottish Sailor, and out of Mr. Duthie's Vain Princess, of the ever popular Miss Ramsden tribe, from which came the Iowa College bull, is one of the most valuable in the list, a show bull for sires, with style, substance and quality combined in high degree,

and walking like a winner. A number of the heifers in the importation were served by this bull in guaranteeing an increase which will add in no small measure to their value. A chip of the old block is *J. I. Marengo*, a roan 10-months-old of the Royal champion Marengo, undoubtedly the greatest in Great Britain to-day as a show bull and sire, having a show record of 7 championships and over 30 first prizes. The dam of this youngster is pronounced the best breeding cow in the Ruddington herd of Mr. Philo L. Mills, and is of Mr. Bruce's favorite Mayflower family, from which has come a host of winners. He has length, depth and width, combined with the best quality of flesh and hair, and proclaims himself a show bull from the word go. Another magnificent young bull catalogued with his dam is *Magenta*, a roan 9-months-old of Solferino, one of Marengo's best sons, and out of Roan Bess, of the Upper Mill Bridesmaids, by Mr. Duthie's great Star of Morning, a Royal and Highland Society winner, whose blood carries weight wherever found, producing wide-ribbed, thick-fleshed cattle like himself. This is one of the best bull calves, if not the very best, that has been imported in recent years, and his dam, a first prize winner in Scotland, sold for 100 guineas when a yearling, is one of the very best in this great importation. *Our King*, a red-roan bull calf of November last, in catalogue with his dam, is another capital son of Solferino, and of Our Queen, by Denmark, winner of many prizes, including 1st and championship over all breeds at Inverurie in 1896. *Sharon Duke* bull is a handsome red 10-months-old son of Lordly Archer, half-brother to Marengo and Brave Archer, recently imported by Mr. Kelly, of Ohio, at a cost of \$6,000. The dam of this bull is a Renick Rose of Sharon, bred from one of the fine cows of that tribe taken to England some years ago, and the Scotch cross has evidently mixed well, as this is a bull of excellent type and quality. *British Prince*, a red 6-months calf, is a promising son of Proud Star, bred by Duthie and sired by Star of Morning, his dam being a Miss Ramsden, by Mac-tepiece, of the Missie family, by the Sittytion-bred Athabeta. Still another red B. C. of fine quality and promise is *Cairngorm* (coupled with his dam in the list), a 9-months son of the Cruickshank bull, Clifton, of the Cicely tribe, and out of Queen Mary, a first-prize and sweepstake winner at the Royal Northern, by Clan Alpine, a Sittytion Clipper, of strong, substantial and thrifty bulls, by Scotch-bred sires, and from deep-milking dams, are the yearling *Hollywell Victor*, bred by Sanders Spencer, St. Ives, and sired by Count Valiant, a richly-bred Cruickshank Victoria, and *Huantha Chief*, a big, sappy 9-months calf by a son of the Nonpareil bull, imp. Royal Member, bred at Kinellar.

Of the fifty females in the sale list, it is safe to say that two-thirds are good enough to go into the showing in first-class company this season, and probably three-fourths of them are now in calf to high-class Scotch-bred bulls, while a considerable number of them are impressing their calves. Among the bulls to which they have been bred may be mentioned the champion Marengo, Golden Fame, Orange Chief, Grand Duke of Ruddington, and Solferino, sons of Marengo, Primate of Dalmeny, and imp.

Lord Banff, now in service at Trout Creek, a capital son of the celebrated bull, Cap-a-Pie, of the Augusta family, a prizewinner at the Royal Northern, champion at Udenny in 1887, and the sire of many good things. The dam of Lord Banff is a Kinellar Roan Bessie of remarkable scale, a deep milker, and a grand breeder. The catalogue comprises representatives of nearly all the favorite families, and daughters of over a score of the most noted Scotch-bred sires of Britain and Canada, including Marengo, Star of Morning (four of whose daughters are listed), Pride of Morning, Morning Star, Rising Star, Merry Mason, and Craibstone, by William of Orange; Star of Lancaster, by Star of Morning; Touchstone, Corner Stone, and his son, Sittytion Secret; Nonpareil Victor, Lordly Archer, Sittytion Seal, and Golden Fame, a galaxy of stock sires unequalled in the universe. Prominent in the list of imported cows and heifers, of which special mention may be made, is the charming roan 4-year-old *Mayflower 4th*, bred by Mr. Turner, of Portsoy, Scotland, and purchased from Mr. Leopold de Rothschild, of Ascot, England, winner of 7 first prizes at the leading shows in Britain, including first at the Royal Show as a 2-year-old and as a 3-year-old. She was sired by Resident by a son of Scottish Archer, out of a Princess Royal by William of Orange, and the sire of her dam was also by a son of William of Orange, out of Bright Belle, who was the dam of several noted bulls, including Brave Archer, recently sold for \$6,000. If *Mayflower 4th* is not the flower of the flock, she is right in the front rank, and we are free to confess we would a little rather take her "for better, for worse," as a show cow and a breeder, than any other of the score and a half of show things in the list. Her symmetry of form, sweetness of character, spring of ribs, thickness and quality of flesh, breezy look, true outline, and general make-up, leave nothing to long for, and then she is making such a record as a breeder. She is nursing now her own handsome 6-months heifer calf, by Magistrate, a son of Deane Willis' famous breeding bull, Count Lavender, and of Moon Daisy, by Captain of the Guard, and is in fit condition to go into the showing and win, and it is a way she has, for her last year's calf, which she also nursed while she herself was winning at the Royal, is winning first prizes at prominent shows in Britain this year. But despite all her charms there is another charmer, namely *Mayflower 5th*, of the same family, selected from the same herd, that will doubtless divide the crowd, at least equally in the contest for precedence. She is red, a young but a big 2-year-old, having just passed her second birthday in this month, big, but with not a suspicion of coarseness, sweet-faced and fine of head and neck, and smooth as a peach all over, but with breadth of back and fullness of ribs in amazing degree for so young a heifer. She is indeed a marvel. She was in training for the Royal this year, and competent judges who saw the winners say she would have won hands down, but Mr. Rothschild's steward was worried into pricing her, and she was claimed for consignment to Canada. What makes her more valuable is that she is believed to be safe in calf to the Duthie-bred President, who defeated Bapton Emperor at Oxford last year, a great honor, and she comes from a deep-milking and prizewinning dam, her mother having defeated Brunet Queen, the first-prize cow at Windsor last year. *Cornelia*, a red 2-year-old, bred by Gordon of Newton, a Cruickshank Clipper, by the Highland champion, Corner Stone, dam by a son of the Royal champion Mario, by Field Marshal, granddam by Star of Morning, and in calf to the Royal champion, Marengo, and due the day after the sale, reads like a roan yearling, and is a living reality, and she is one of the best individuals in the outfit. Mr. Cruickshank's closest friends claim that this one is true to the type. *Fair Duchess*, a roan 2-year-old, bred by Fletcher of Rosehaugh, from one of Lord Lovat's favorites, of the Sittytion Broadhooks tribe, which produced Royal Champion, one of Mr. Duthie's favorite stock bulls, bought at \$1,000, is "all wool and a yard wide." She has size, substance and quality in close combination, and is in calf to a son of Marengo. Her sire, Watchfire, was a Highland Society winner, while her grand sire was Merry Archer, by Scottish Archer, and six of the ten highest-priced bulls at the Scotch spring sales were of her family. *Matchless 18th*, the sweepstakes female of Canada's leading shows last year, is only 4 years old, has been a winner from calfhood, and is nursing her second calf, a red 3-months heifer. This champion is a Cruickshank Matchless, by the Marr-bred Royal Sailor, by the Spicy Bull, Sea King, and his dam by William of Orange. She is big enough, and as smooth as they are made, has nice cow character, and is nursing her second calf, and a way of usefulness that should win favor wherever she goes. The Duke of Richmond's *Lily of the Valley 17th* is number 16 in the catalogue (arranged alphabetically), but ranks close up among the best individually. She is a roan 2-year-old, with a lovely head and neck, with perfect fitting shoulder plates, a grand back and quarters, deep-ribbed, and full of the best quality of flesh. She is a daughter of the Marr Missie bull, Musgrave, by the Sittytion Clipper Criterion, and is in calf to Primate of Dalmeny, one of the choicest bulls in the importation. *Royal Bess*, a 3-year-old, bred by Gordon of Newton, a daughter of Star of Morning, and her dam by Prince of Fashion, is one of the Upper Mill Bridesmaids, was a first-prize winner in Scotland, and sold for 110 guineas as a yearling at the Newton sale. For quality of flesh and hair, covering of back, and breezy character, she excels, while as a breeder she has made a grand success in producing her elegant roan bull calf, *Magenta*, dropped in October, of which a Scottish critic says: "He is regarded as quite an exceptional calf, having well-laid shoulders, great width of back and loin, rare under line, and wonderful symmetry, set off to great advantage by his beautiful covering of hair." *Queen Mary*, a roan 3-year-old, three times a first-prize winner in Scotland, and twice a cup winner as best Shorthorn in the show, is a daughter of the Sittytion Clipper, Campbell herd at Kinellar. She is head down, broad-topped, and has the quality and character, and has a capital red bull calf in Cairngorm, by Clifton, a Sittytion Cicely, and a show bull, *Lady Percy*, by Marengo, and her dam by the Duthie-bred Eastern Star, a dark roan 2-year-old, in calf to Primate of Dalmeny, is a lovely heifer, very even of tail in all points, and showing typical breed character. *Collynie Missie*, a pretty roan yearling, by Nonpareil

Victor (sire of Messrs. Cargill's \$1,500 bull, Golden Drop Victor), is one of the very best of the Upper Mill Missies that has ever come to America. She is blocky, smooth, well filled in her quarters, and does credit to the family which produced Marengo and many other noted sires and prizewinners. *Coronet*, a beautiful roan yearling, bred at Newton, is a daughter of the champion Cornerstone, for whom Mr. Gordon refused \$5,000, and her dam is a daughter of Mario 2nd, by the Royal champion, Marengo. She is such a heifer as is difficult to buy in Britain, and like most in the catalogue, was intended for a place in the herd to produce more of her kind. *Dalmeny Nonpareil*, bred by Earl of Rosebery, a handsome roan 2-year-old of the favorite Cruickshank Nonpareil family, by Sittytion Seal, a Sittytion Seal, bred by Mr. Duthie, and sired by the Brawith Bud bull, Roan Robin, is rich in the blood of the best of the Kinellar and Cruickshank bulls, and is smooth, level and well-balanced, and in calf to Primate of Dalmeny. From the choice herd of Earl of Rosebery also comes *Cladys*, a comely red 4-year-old daughter of Mr. Duthie's favorite cow, Glad Welcome, of the Wimple tribe, and by Prince of Fashion by Scottish Archer. She is of fine type and quality, and has a handsome red bull calf by Primate of Dalmeny, and is again in calf to Lord Banff. A quartette of Canadians which well claim admiration are: *Mildred 14th*, *Dora of Stamford*, *Ury*, and *Queen of the Louans*. The first two are well-known Toronto winners, by Royal Sailor, the sire of the sweepstakes cow, Matchless 18th, and Mildred 6th has more than once won over the champion, and is considered by many good judges the better of the two. *Queen of the Louans*, by the grandly-bred Cruickshank Victoria bull, Golden Victor, won first without a struggle at Toronto last year, in the strongest class of calves under a year ever seen in Canada, which virtually means the best ever seen on this continent. She is perfect in symmetry, sweet in character, fine in quality, and simply irresistible in her charming personality. Ury is a beautiful red 2-year-old representative of the Kinellar tribe of that name, and a daughter of Indian Wave, a son of the Sittytion Victoria bull, Indian Chief, a most successful sire of prizewinners. A typical trio of red Cruickshank Clippers is the grand, Gordon-bred *Red Ruth*, a Scottish prizewinner, by Star of Morning, and her daughters, *Naomi's Ruth*, by Touchstone (sire of the champion Cornerstone), and *Naomi's Sister*, by the Royal champion, Marengo. Still another strikingly useful young Gordon bred cow is the red-roan 3-year-old *Rosalind*, by Star of Morning, and her dam by the Marr-bred Monticello, bred on similar lines with Marengo. She is thick-fleshed, and of the approved type.

Space forbids further reference to the scores of good things unnamed in this necessarily partial review, among which are many highly meritorious matrons, all in their prime, and breeding regularly, as well as a lot of excellent young things of similar breeding to those mentioned.

Mr. Flatt is certainly to be congratulated on this splendid collection of cattle, which represent a heavy investment, and which we only wish were all remaining in Canada, but since they are to be submitted to the salesman's hammer, we hope the breeders of the Dominion may claim a share of them by putting in some last bids.

HORSEMEN! THE ONLY GENUINE IS GOMBAULT'S CAUSTIC BALSAM.

None genuine without the signature of
The Lawrence Williams Co.
Sole Importers for the U. S. & CANADA, CLEVELAND, O.

The Safest, Best BLISTER ever used. Takes the place of all liniments for mild or severe action. Removes all Bunches or Blemishes from Horses and Cattle. SUFFERS WITH AIL, CAUTERY OR FIRING. Impossible to produce scars or blemish. Every bottle is warranted to give satisfaction. Price \$1.50 per bottle. Sold by Druggists, or sent by Express, charges paid, with full directions for its use. Send for free descriptive circular. THE LAWRENCE-WILLIAMS CO., Toronto, Ont.

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HAS BEEN CURED BY

WEST'S FLUID

In several of the finest herds of prize stock in the country; but as it would injure the reputation of the breeders, they will not give written testimonials. These statements are facts.

Write for circular on this disease, specially prepared by a V. S. Headquarters for "STANDARD" Sheep Dip Manufacturers: The West Chemical Company, Agents W. & M. TORONTO, ONT.

FARM FOR SALE

Adjoining corporation of Streetsville, 20 miles west of Toronto; 200 acres, in high state of cultivation; well fenced; 20 acres good timber; well watered by never-falling springs; soil clay and clay loam; 6 acres orchard; splendid brick house, 14 rooms; 6 roomed cellar; new bank barn, 50 x 72, cement floor; 2 other barns, tub silo, sheep house, hog pen, and driving house; suitable for dairy or stock farm. Ten minutes' walk from station. This is a rare opportunity to secure a choice farm, as the estate must be sold. Apply

JOHN DOUGLAS,

STREETSVILLE, ONT.

PLEASE MENTION FARMER'S ADVOCATE.

"POST" FOUNTAIN PEN

SOMETHING THAT EVERY MAN, WOMAN, BOY AND GIRL NEEDS.

It is a wonderful tribute

to the greatest invention in fountain-pen construction of the age.

THE PRICE OF THE POST IS \$3.00. IT CANNOT BE PURCHASED ELSEWHERE.

The patentee has a hard-and-fast agreement with the trade and agents that \$3 shall be the lowest retail price. By a special agreement we are in a position to make

A Great Offer: We will send one of these pens to anyone who sends us three new subscribers, accompanied by \$3.00 in cash.



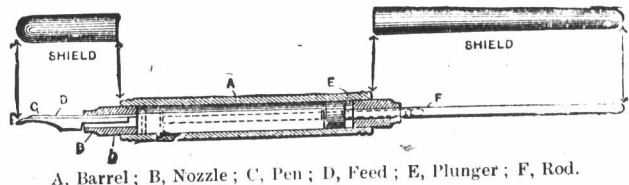
General Lew Wallace, the author of the greatest book of the age, "Ben Hur," also "Prince of India," "Commodus," etc., says in a letter in his own handwriting: "The fountain pen, Post, was received, and I have taken the liberty of trying it thoroughly. Please accept the excuse for failure to acknowledge sooner. "I have tried every pen of the kind on the market, and now unhesitatingly give the preference to the Post. It not only feeds itself with less care, but has the immeasurable advantage of re-supply without inking the fingers. I do all my work with it."

Lew Wallace.

To show our confidence in this pen, we will send you one on trial for a week upon receipt of \$1.00, which, if not entirely satisfactory, you can return to us and we will refund you the \$1.00 paid us. If satisfactory, you must send us the names and addresses of three new subscribers and \$2.00 additional cash.



THE only self-filling and self-cleaning pen manufactured in the world. To fill the pen, put the nib in ink and draw the piston rod up. To clean, put the nib in water and draw the piston rod backwards and forwards a few times.



A, Barrel; B, Nozzle; C, Pen; D, Feed; E, Plunger; F, Rod.

The world's greatest singing evangelist, who has thrilled thousands and tens of thousands, now raises his voice in praise of the Post Fountain Pen.

Mr. Sankey sends the following characteristic letter: "I have used the Post pen for some time, and have had great satisfaction with its use. It never fails or gets cranky. One can at least have clean hands by using the Post, whatever the heart may be."

Wm. Sankey.

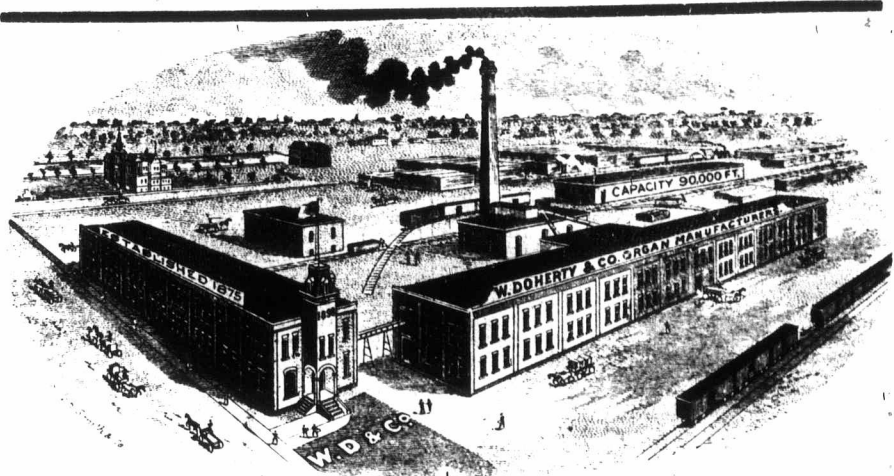
ADDRESS—

The William Weld Co., Ltd., London, Ont.

WM. GRAINGER & SON'S SHORTHORNS.

Among those who were fortunate enough to be well equipped with Shorthorn breeding stock when the rise in prices came, we know of few who were found in better shape than Messrs. Wm. Grainger & Son, London, Ont. It will be remembered that Mr. Grainger furnished one of the Shorthorn cows to the dairy test at the World's Fair, Chicago, which was selected by the commission as being not only a superior dairy cow but one of the best to be found in the Province. It has always been Mr. Grainger's aim to maintain the standard of excellence established by that noble cow, and to-day may be found a long string of worthy descendants of the same tribe, the Fair Maid of Aha, whose hardy, prolific and excellent dairying qualities she transmitted to her progeny to a most remarkable degree. It is easy to tell a good milking cow by the calf she suckles, and we have frequently found not one but two good ones being reared at one udder at Messrs. Grainger's. The herd is made up of 14 cows and heifers, 3 heifer calves, and the stock bulls, and in the breeding of the former such sires as Golden Nugget and True Bearer must receive the credit for much of the heeling qualities in many of the matured females, and as the bulls were personally selected by Mr. Grainger with a view of maintaining the dairying qualities of the herd, this feature has not suffered by their employment. Among the younger females we saw a very superior young cow, Britannia Lass 304, a daughter of Britannia Lass 2nd, and by Beau Ideal, the present stock bull. She is a black and well-matured young cow, and evenly bred, with long, well-sprung ribs, and a broad, clean back and well-developed quarters. She is an all round good young cow, of which any breeder might well be proud. We also saw a pair of choice yearlings out of Red Princess

2nd and Britannia Lass, that are full of good quality and Shorthorn character. We cannot pass the young bulls without giving favorable notice, and first, we wish to briefly state that the yearling, Look at Me 3222, by Beau Ideal, and out of Kitty Clay by Golden Nugget, has surprised us in his development. He has grown all over, carrying the strong features of the Strathallan and Golden Drop tribes, from which he has descended, with a splendid head and horn. His full brother, a year younger, has also started in the right direction, and at his age will compare very favorably in development and quality with the best. In all we were shown seven young bulls under a year, and shown seven young heifers under a year, and they are perhaps the best bunch Beau Ideal has sired on the farm in one season. Many of them are worthy of much greater praise than our space will allow, while the sire keeps his form and holds his flesh quite equal to former years. To follow Beau Ideal, the firm purchased from Messrs. W. & J. Russell, Richmond Hill, the young bull, Golden Eagle 30943, by Golden Measure 30942, and out of Isabella 14th 13944, and in his selection Mr. Grainger has evidently acted wisely in placing a member of so worthy a family at the head of his herd. The Isabellas have always been noted for their thickness of evenly distributed, mellow flesh, and uniformity of quality. To this tribe is due much credit for the high standing of Canadian Shorthorns, and this family has produced many of the worthy ones. Golden Eagle's dam produced the champion Money-fuffe Lad and Imp-son Stanley, both of show-yard fame and the right sort. We would be pleased and not surprised to see Mr. Grainger in the large showings at no distant date. Breeders desirous of obtaining sires to head pure-bred herds will do well to note the firm's advertisement.



W. Doherty & Co. ORGAN

Clinton, Ontario, Canada.

The Largest Reed Organ Factories in Canada.

Established 1875.

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GOSSIP.

At a graft sale of Shorthorns, from the herd of Lord Feversham, June 16th, cows and heifers averaged £49 17s. 5d., and bulls £28 3s. The highest prices were 230 guineas and 225 guineas respectively for Duchesses of Rievaulx 2nd and 3rd.

Mr. James Dalgety, of Messrs. Dalgety Bros., 463 King St., London, Ont., left his home on July 9th, to take the ocean steamer, Tritonia, for the Old Land, for an importation of from 20 to 30 stallions, all ages, of Clydesdales, Shires and Percherons. This firm has done a big trade in high-class horses during the last few years, and the coming shipment will consist of horses of the same high character. They will reach home early in September. Watch for their advertisement.

Mr. W. H. Gibson, manager of the Huntleywood Farm for Hon. G. A. Drummond, Pointe Claire, Que., writes to say that their South-down flock is in very fine condition. The spring lambs are an extra good lot. A three-month-old lamb, that has had no grain since going out to grass, weighed 86 pounds. The Dexter Kerry cattle feel quite at home. Recently a two-year-old bull and yearling heifer were shipped to Mr. Geo. Wilson, Dundurn, Assn., N. W. T. See Huntleywood advertisement in this issue.

A Model Pea Harvester.—There are many ways of harvesting a crop of peas, but no other that we have seen so satisfactory as with Tolton Bros.' pea harvester, made by Tolton Bros., Guelph, Ont. This machine gathers up all the vines, cuts them at a stage of ripeness to make first-class fodder; it does not shell out and waste grain, and the work is done easily and rapidly.

ST. CLAIR FARM FOR SALE.
North part 1, con. 15, township of Sonbra, County of Lambton; 73 acres; best of land; newly fenced; good barn and passable house; all under cultivation; nearly square; lies wholly between railway and the St. Clair, stretching nearly half a mile along that famed river; 15 miles from Sarnia, 3 from Courtright; lies opposite midway point between St. Clair and Marine Cities, Michigan, both in plain view. Post and express offices, store and railway station at corner of farm. If no satisfactory offer to purchase is received, will rent to good tenant, term of five years, with proviso to terminate lease at end of any year if a sale is made. Open for offers till 1st Sept. Apply to A. DINGMAN, Stratford, Ont.

Good Young Bulls
Of best Scotch breeding, and a desirable lot of HEIFERS
of the low-down, blocky type. Royal Prince 31211 = (bred by J. & W. B. Watt), a worthy son of Imp. Royal Sailor = 18959 =, heads the herd.

H. K. FAIRBAIRN,
Theftford P. O. and Station, Ont.

PLEASE MENTION FARMER'S ADVOCATE.

GOSSIP.

W. G. PETTIT & SON'S IMPORTED SHORTHORNS EXPECTED HOME IN AUGUST.

While calling upon Messrs. W. G. Pettit & Son, at Freeman, Ont., recently, a member of the FARMER'S ADVOCATE staff was informed that the firm expected their recently imported Shorthorn cattle home from quarantine about August 23rd. Mr. Pettit is busily engaged in the preparation of a catalogue of his herd, which will be ready about August 1st, in which he is introducing the new feature in Shorthorn catalogues of announcing the name of both sire and dam, a feature which will simplify very materially the tracing out of pedigrees, as he believes it is important that the breeder of a large herd should be personally selected from the portation was personally selected from the large herds around Aberdeen, and comprise some 54 head, 16 of which are bulls of various ages, particulars of which will be given later.

JAS. TOLTON & SON'S SHORTHORNS AND OXFORDS.

When we called at Mr. Jas. Tolton's comfortable home at Walkerton, Bruce Co., Ont., in the latter part of May, we found the farm the scene of extensive building operations, the firm being engaged in building a large barn to accommodate their increasing flocks, herds, and crops. Mr. Tolton has been steadily improving his herd of Shorthorn cattle, and at each move scoring a point towards the more popular and approved type, the herd now containing more imported cows than at any former time in our knowledge. The son of Imp. Cleopatra, by knowledge, and of Imp. Blue Ribbon, now heads the herd. He is an even, thick-fleshed bull, full of Shorthorn character, and is sufficiently masculine in type to make an impressive sire. Like his sire, he is a solid deep red. The elegant imported red 2-year-old heifer, Sybella, recently been added to the herd. She was sired by Prince of Pittivie, and out of Sarcasm, of the favorite Sittytown Secret tribe, and having a liberal supply of Cruickshank-bred sires in her pedigree, she is being bred to Messrs. Carzell's famous 300-guinea bull, Imp. Golden Drop Victor, so highly esteemed by his owner. Another good cow lately added is the large light roan, Ideal 2nd, by Earl of Moray, and out of Ideal by Lord Elcho. She is a massive, thick-fleshed cow approaching her prime, and has been a sure breeder. The 10 Florida and 4 Fancy Lady females were found in good flesh, from a breeder's standpoint, in which condition they have proven prolific and profitable in Mr. Tolton's hands.

In Oxford sheep, the firm were able to show us some 35 strong breeding ewes and a good crop of lambs, approaching three score in number, sired by a shearing ram imported last year. A few well-developed shearing ewes were also in the flock, which we judge will be retained except tempting figures are offered. The ram lamb list can furnish good individuals for stock rams, and are in the pink of health.

IN WRITING
PLEASE MENTION FARMER'S ADVOCATE.

Cargill's \$1,500 bull, one of the very best of that has ever come to smooth, well filled in credit to the family and many other noted Cornet, a beautiful wpton, is a daughter of e, for whom Mr. Gorer dam is a daughter of champion, Marengo. It is difficult to buy in the catalogue, was in the herd to produce any Nonpareil, bred and some roan 2-year-old Cruickshank Nonpareil Secret, bred by the Brawwith Bud h in the blood of the Cruickshank bulls, well-balanced, and in ny. From the choice comes Gladys, a daughter of Mr. Dunthie's come, of the Wimple Fashion by Scottish type and quality, and calf by Principal of Lord Banff. A h. Dora of all time ad uans. The first two winners, by Royal epstakes cow, Match has more than once n, and is considered grandly-bred Cruick-en Victor, won first onto last year, in the nder a year ever seen y means the best ever in the perfect in sym- fine in quality and charming personality. year-old representative at name, and a daugh- of the Sittlyon Vic- most successful sire al trio of red Cruick- and Gordon-bred fied ner, by Star of Morn- Naomi's Ruth, by umption Cornerstone, the Royal champion, rkingly useful young red-roan 3-year-old rning, and her dam ello, bred on similar is thick-fleshed, and

ONLY GENUINE IS
WELLS' BALSAM.

ABORTION
FLUID
would injure the
ers, they will not
als. These state-

GLAS,
ETSVILLE, ONT.
ER'S ADVOCATE.

FOR SALE:
3-YEAR-OLD Hackney Stallion



Winner of 7 first-prizes at Toronto and London, and also a silver medal given by the English Hackney Horse Society. Five Clydesdale colts, two coming 1 year old, two coming 2 years old, one coming 3 years old. Also a choice lot of fillies, 1, 2 and 3 years old.

QUEEN.
D. & O. SORBY,
GUELPH, ONT.

Dalgety Bros.

463 King Street, London, Can.
Have gone over to the homeland by steamer Tritonia (which sailed on 12th inst.) for a fresh importation of

CLYDESDALES, SHIRES, AND PERCHERONS.

Will return about September, with 20 or 30 stallions, all ages. Watch for their later advt.

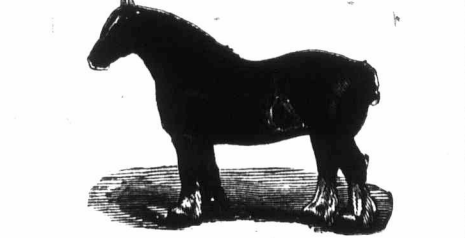
Important to Breeders and Horsemen.
Eureka Veterinary CAUSTIC BALSAM.

A reliable and speedy remedy for Curbs, Splints, Spavins, Sweeney, etc., etc., in Horses, and Lump Jaw in Cattle. See pamphlet which accompanies every bottle, giving scientific treatment in the various diseases. It can be used in every case of veterinary practice where stimulating applications and blisters are prescribed. It has no superior. Every bottle sold is guaranteed to give satisfaction. Price 75c. per bottle. Sold by all druggists. Guaranteed remedy for sterility in cows, with full instructions. Price, \$2. Prepared by **THE EUREKA VETERINARY MEDICINE COMPANY, London, Ont.**

THORNCLIFFE Stock Farm

The largest stud of Clydesdales in Canada, headed by the Champion Stallion of all ages,

"LYON MACGREGOR."



Stallions and Colts

From the best blood in Scotland and Canada. Ayrshire bulls and heifers from imported stock. Jersey heifers and bull calves, sired by the prize-winning bull, Distinction's Golden. Best milking strains, with good teats.

Terms reasonable.
A visit to Thorncliffe will well repay you.
ROBT. DAVIES,
Thorncliffe Stock Farm, TORONTO.

Rosedale Stock Farm.

CLYDE AND SHIRE HORSES.
SCOTCH SHORTHORNS.
LEICESTER SHEEP.
A choice lot of Leicester ewes and rams with superior quality and as good blood as is obtainable. My motto, "The best is none too good."

J. M. GARDHOUSE, Highfield P. O.
Malton Sta., G.T.R. om Weston Sta., C.P.R.
LIVE STOCK AUCTION SALES
Conducted in all parts of the country. Pedigree stock a specialty. Write for terms. References: J. C. Snell, Edmonton; John I. Hobson, Guelph; Hon. M. H. Cochrane, Compton, P. Q., or his office.
JOHN SMITH, BRAMPTON.

IN WRITING
PLEASE MENTION FARMER'S ADVOCATE

GOSSIP.

Dr. E. P. Ball, Rock Island, Quebec, has, by persistent effort, accumulated a beautiful herd of almost pure St. Lambert Jerseys, from which he proposes to make a draft for exhibition at the leading eastern exhibitions this coming autumn.
At the sale of surplus animals from the herd of Shorthorns owned by Mr. Richard Booth, of Warlaby, held near the Royal Show yard at York during the week of the show, twenty-three head were sold at an average of \$18 68. The highest price paid for a female was 115 guineas, and for a bull 115 guineas.
The steady advance of the chestnut color, amongst Hackneys in particular, was a subject of much comment at the Royal Show at York, and it is not surprising that it was so, as in some of the classes every competitor was of that shade of color.

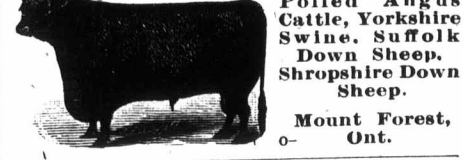
MORE CLYDESDALES FOR CANADA.
Mr. Neil Smith, of Brampton, Ont., sailed from Glasgow June 22nd with five Clydesdales, three of which—two colts and a filly—were purchased from Messrs. A. & W. Montgomery, and a colt was purchased from Mr. David Gilchrist, Ballevain, Campbelltown. One of the former is Marquis of Millfield (10813), another is a yearling of Good Gift (10815), and the third is a yearling of Good Gift and Gold Mine (9540). The Ballevain colt is by the famous Prince of Fashion, which stood second to Prince of Albion (6178) at the H. and A. S., Glasgow, in 1888, and the sire of all the others were first prize stallions either at Glasgow or the Highland Society, and, in the case of Good Gift and Gold Mine, they were first at both shows. Marquis of Millfield is a big colt by Prince of Millfield, out of the noted prize mare Ellen Terry, by Flashwood (3604). From Mr. Wm. Taylor, Park Mains, Renfrew, was purchased the well-bred colt, Colyton, by Mr. Kilpatrick's big horse, Ethiopia (5750), and a well colored, good horse every way. Mr. Smith has bought well-bred, big horses, which ought to do him some good.

SHORTHORNS AND SHROPSHIRE AT PENNEBANK STOCK FARM.
At Messrs. Pugh Bros.' stock farms at Whitevale, Ont., a useful herd of Shorthorn cattle are kept, of the Devonshire, descended from the imported Aberdeenshire cow, Dorothy 121st, upon which have been employed sires descended from Scotch-bred foundations. The firm generally have a few good young bulls to offer, and are contemplating making some additions to their herd owing to the good demand. The Shropshire flock receive attention, about 50 breeding ewes being constantly kept. The foundation was selected from Miller's importations, being selections from the flocks of Cooper and Mansell, upon which have been employed Mansell-bred sires. The Messrs. Pugh Bros. have bred with a view to increasing the quantity and quality of fleece, selecting only those rams whose covering was of the highest quality. A few lambs will be offered for sale, having good Shropshire character and well-developed bodies. Watch the firm's offerings.

DAVID MILNE'S SHORTHORNS AND LEICESTERS.
Shorthorns have been bred for 20 years by David Milne, of Ethel, Ont., the herd being founded upon stock of Watt's breeding. There are now in the herd 26 breeding cows, a number of which are descendants of Vain Duchess 5218, imported from Aberdeenshire by Green Bros., and sired by Edgar (41501), a first-prize winner at the Royal Show. Descendants of imported White Rose, through the champion winner, Royal Bampton, came formerly from Kentucky, and are a very prolific and heavy milking tribe. Two Marchioness females descended, through Viscount and Indian Prince, from Nonpareil dams. Ten females of the Scotch-bred Rosebud tribe, through the imp. Cruickshank bull, Baron Lenton, and the imp. Kinloch-bred Rose of Aberdeen, are mostly reds, and are a remarkable lot. A few daughters of Lord Lovell, of various ages, are very creditable, and speak well for their sire as a breeder. Among the bulls used in the herd are the following, all of which were superior individuals of high-class breeding: Perfection, by Bampton Hero, and out of imp. Lovell 1941, a Siltyston cow of fine character; Bampton Hero, employed 9 years; Red Knight, a Kinloch-bred bull of the Mysie tribe, 4123 (54904); Lord Lovell 2630, of the favorite Matchless tribe, by Bampton Hero; May Duke 21048, by Clipper King, of the Cruickshank tribe, and out of Mildred 4th, of a noted prizewinning family, by imp. Hospodar, exported to Scotland as a sire. Mr. Milne also breeds Leicester sheep, and has an excellent flock of 40 head of all ages, founded on first-class imported stock, and has used the best class of rams obtainable.

SUMMARY OF OFFICIAL TESTS OF HOLSTEIN-FRIESIAN COWS RECEIVED IN THE MONTH OF MAY, 1900.
Thirty-nine tests made of thirty-seven cows were received, approved and recorded. They were invariably for periods of seven consecutive days, made by representatives of Experiment Stations. The butter is estimated first on the basis of the 80 per cent. rule, which all the World's Fair estimates were made, and secondly by the 85.7 per cent. rule uniformly used by all Experiment Stations.
Of full-age cows, ten records were made, averaging as follows: Age, 8 years 2 months 12 days; commencement of test, 41 days after calving; milk 389.6 lbs.; butterfat 13.108 lbs.; butter 80 per cent. fat, 16 lbs. 6.2 ozs.; butter 85.7 per cent. fat, 15 lbs. 4.7 ozs.
Of cows between four and five years old, nine records were made, averaging as follows: Age, 4 years 6 months 27 days; commencement of test, 33 days after calving; milk 356.7 lbs.; butterfat 12.705 lbs.; butter 80 per cent. fat, 15 lbs. 11.1 ozs.; butter 85.7 per cent. fat, 14 lbs. 13.2 ozs.
Of cows between three and four years old, six records were made, averaging as follows: Age, 3 years 5 months 24 days; commencement of test, 21 days after calving; milk 347 lbs.; butterfat 11.288 lbs.; butter 80 per cent. fat, 14 lbs. 1.8 ozs.; butter 85.7 per cent. fat, 13 lbs. 2.7 ozs.
Of cows less than three years old, 14 records were made, averaging as follows: Age, 2 years 4 months 26 days; commencement of test, 26 days after calving; milk 295.5 lbs.; butterfat 9.51 lbs.; butter 80 per cent. fat, 11 lbs. 11.8 ozs.; butter 85.7 per cent. fat, 11 lbs. 2.1 ozs.
S. HONK, Superintendent, Yorkville, Y. Y., June 1, 1900.

W. R. BOWMAN,
BREEDER OF



Polled Angus Cattle, Yorkshire Swine, Suffolk Down Sheep, Shropshire Down Sheep.
Mount Forest, Ont.

FOR SALE: 50 Shorthorns of all ages and both sexes. Founded on good Scotch-bred cows, upon which have been employed Scotch bulls for 20 years. -o-
DAVID MILNE,
ETHEL, ONT.

Bonnie Burn Stock Farm
Forty rods north of Stouffville station, Ont., offers for sale Shorthorn bull calves and yearling heifers, Shropshire lambs and shearings (both sexes), on **D. H. RUSSELL, Stouffville, Ont.**

ASHTON FRONT VIEW STOCK FARM.
Four Shorthorn Bulls for sale, from 8 to 15 months old; all of choice breeding. Also Cotswolds of all ages for sale at all times. Visitors welcome.
A. J. WATSON, Castlederg, Ont. C. P. R. Station and Telegraph Office, Bolton; or G. T. R., Palgrave.

JAS. DORRANCE,
SEAFORTH, ONTARIO.
BREEDER OF
Shorthorn Cattle and Berkshire Pigs
Young stock always for sale. -om-

8 Scotch-topped SHORTHORN BULLS 8
And a few females, sired by Revenue and Bonnie Lad, a son of (imp.) Blue Ribbon.
ROBT. DUFF,
G. T. R. and C. P. R. -o- Myrtle, Ont.

SCOTCH SHORTHORN BULLS AND HEIFERS
HERD ESTABLISHED IN 1872.
Such sires as imported Royal George and imported Warfar have put us where we are. Imported Blue Ribbon now heads herd.
A. & D. BROWN,
ELGIN COUNTY. -om- IONA, ONTARIO.

H. SMITH, - Hay, Ont.
Shorthorn Cattle,
Two good roan bulls and a fine bunch of heifers
FOR SALE.
Exeter Station on G. T. R., half a mile from farm. -om-

Hillhurst Farm.
ESTABLISHED 1861.
Scotch Shorthorns.
SIRE IN SERVICE:
Scottish Hero and Joy of Morning.
BRED BY W. DUTHIE, COLLINGIE.
Oldest Stud of Hackneys in America. Shropshire, Dorset Horn and Hampshire Down Sheep. -om-

M. H. COCHRANE.
Hillhurst Station, Compton Co., P. Q.
SHORTHORNS
Cows and heifers, some of them the same family as the first and second prize cows at Provincial Dairy Show, London.
F. MARTINDALE, York P.O., Ont.

SPRING GROVE STOCK FARM
Shorthorn Cattle and Lincoln Sheep. Herd prize and sweepstake at Toronto Industrial Exhibition 1897 and 1898. Herd headed by Topman =17847=, champion at Winnipeg, Toronto, London and Ottawa, 1899. High-class Shorthorns of all ages for sale. Also prizewinning Lincolns.
Apply -om-
T. E. ROBSON, Ilderton, Ont.

Shorthorns and Leicesters.
Herd Established 1855.
A number of young bulls, cows and heifers for sale. Herd headed by imported Christopher 28859, and Duncan Stanley =16361=. Grand milking cows in herd. Also a number of Leicesters of both sexes, from imported foundation.
JAMES DOUGLAS,
CALEDONIA, ONT.
IN WRITING
PLEASE MENTION FARMER'S ADVOCATE.

Spavins, Ringbones, Splints Curbs, and All Forms of Lameness Yield to



Works thousands of cures annually. Endorsed by the best breeders and horsemen everywhere. Price, \$1.50 for \$5. As a liniment for family use it has no equal.
West Lorne, Ontario, Can., Dec. 14, 1898.
DR. B. J. KENDALL CO.
Dear Sirs:—A year ago I had a valuable horse which got lame. I took him to the Veterinary Surgeon who pronounced it decubitus spavin and gave me little hope, although he applied a sharp blister. This made matters only worse and the horse became so lame that it could not stand up. After trying everything in my power I went to a neighbor and told him about the case. He gave me one of your books and I studied it carefully and being resolved to do the utmost in favor of my beast, went to the nearest drug store and got a bottle of your Spavin Cure and applied it strictly according to directions. Before the first bottle was used I noticed an improvement, and when the seventh bottle was about half used, my horse was completely cured and without leaving a blemish on him. After ceasing treatment I gave the horse good care and did some light work with him, wishing to see if it had effected a cure. I then started to work the horse hard and to my entire satisfaction he never showed any more lameness through the whole summer. I can recommend Kendall's Spavin Cure not only as an excellent, but as a sure remedy, to any one that it may concern. Yours truly,
SAMUEL TRITTON.
Ask your druggist for Kendall's Spavin Cure, also "A Treatise on the Horse," the book free, or address **DR. B. J. KENDALL COMPANY, ENOSBURG FALLS, VT.**

FOR SALE:
Six choice young Shorthorn bulls—bargains for quick sale. A few heifers could be spared.
-o- **E. JEFFS & SONS, Bondhead, Ont.**

SHORTHORN CATTLE AND LINCOLN SHEEP.
Imp. The Baron at head of herd. Seven young bulls for sale—good ones. Also a few females. Stud rams all imported from H. Dudding, Esq.; the same blood as the 1000-guinea ram.
J. T. GIBSON,
DENFIELD, ONT.

SPRINGBANK FARM.
Shorthorn Cattle, Oxford Sheep, and Bronze Turkeys. Young bulls for sale.
JAS. TOLTON, WALKERTON, ONT.

Shorthorn Bulls
FROM 8 to 17 months old. Red; in good condition. Also thick young cows, bred to imp. Prince William.
R. MITCHELL & SON,
Burlington Jct. Station, Nelson, Ont.

Maple Lodge Stock Farm
ESTABLISHED 1854.
SHORTHORNS—An excellent lot of young bulls, and a special value in young cows and heifers in calf to our imported Knuckle Duster.
LEICESTERS—Imported and home bred—the best.
ALEX. W. SMITH,
-om- **MAPLE LODGE P. O., ONT.**

Shorthorn
-o- (imported in dam). **A. P. ALTON & SON, Appleby, Ont.**

Shorthorns and Shropshires FOR SALE.
Am offering a few young bulls and heifers from imported Rosebud and Countess females, upon which have been employed imported sires from Duthie, Campbell, and Cruickshank herds. Shrop-ram and ewe lambs.
WM. D. DYER, COLUMBUS, ONT.

Shorthorns for Sale.
12 FEMALES, from 1 to 7 years old, descended from Red Knight (53512), Hopeful (55903), Crown Prince 10637, Canada 19536, and Riverside Stamp 23589, on a Crimson Flower and Stamford foundation. All in good breeding form.
WM. SHIER,
SUNDERLAND, ONT.

5-- Shorthorn Bulls --5
From 9 to 15 months. Also a few choice yearling and 2-yr.-old heifers, among which are grand, thick-fleshed and choicely-bred animals, mostly solid red colors. Speak quick, for they will not last long.
G. A. BRODIE,
G. T. R. **BETHESDA, ONT.**

Pure Scotch Shorthorns for Sale. Two bulls thirteen and fifteen months old, and three two-year-old and two one-year-old heifers. All right. Good ones. Meadowdale station, G. T. R. **S. J. PEARSON & SON, Meadowdale.**

Spines, Splints
All Forms of
Yield to



ALL'S CURE

Endorsed by the
Veterinary Surgeon who
gave me the little horse,
and so lame that it could
not walk. He gave me
a bottle of your Spavin
Cure, and in a few days
the horse was sound and
able to work. I have
since used it on several
other horses, and it has
proved to be a most
valuable medicine.
Y. ENOSBURG FALLS, VT.

R. & S. NICHOLSON
SYLVAN P. O., PARKHILL STATION.
Scotch Shorthorns, imp. and home-bred.
The Imp. Clipper bull, Chief of Stars, heads the herd.
Eight extra good 2-year-old heifers for sale, in calf to
Chief of Stars (72215). Inspection invited. -om

Scotch Shorthorns.
100 head to select from.
Imp. Diamond Jubilee = 28861 =
at the head of the herd. Eight
grand yearling bulls, and cows and
heifers of all ages of the most ap-
proved breeding.
T. DOUGLAS & SONS,
Strathroy Station and P. O.
Farm 1 mile north of the town.




HAWTHORN HERD
OF DEEP-MILKING SHORTHORNS.
We are offering 5 young bulls for sale, of
first-class quality, and A1 breeding. -om
Wm. Grainger & Son, - Londesboro, Ont.

GUERNSEYS.
This is the dairy breed for ordinary farmers.
Large, vigorous, and hardy, giving plenty of rich
milk. Several fine young bulls for sale at very
reasonable prices. A few heifers can be spared.
Address— SYDNEY FISHER,
17-y-o ALVA FARM, KNOWLTON, P. Q.

Herefords for Sale.
Three or four one-year-old bulls.
Cows and heifers.
The Plains Farm, Arkell; Moreton Lodge, next the
O.A.C. College; containing 200 to 250 acres each.
The F. W. Stone Stock Co.,
Guelph, Ont., Can.

75 HEAD
High-quality,
Early maturing
Herefords
Prizewinners,
Producers of Money-
makers in the
feed lot.
The blood of "Corrector," "Eureka," "Ancient
Briton," and "Ruppert," on an "Anxiety" foundation.
Send for illustrated catalogue. -om
H. D. SMITH, COMPTON, QUE.



GLEN ROUGE JERSEYS.
WILLIAM ROLPH, Markham, Ont., offers
twelve Jersey Bulls and Heifers (pure St. Lamberts),
out of tested cows. Grand individuals. Prices right.
FOR SALE:
Jersey bulls from tested and prizewinning dams,
and sired by our champion bull. They are fit to head
any show and dairy herd. Also a number of
young A. 1. C. C. cows, and a few unregistered cows
and heifers—grand family cows. Write now for
prices, stating what you want. -om
B. H. BULL & SON, Brampton, Ont.
G. T. R. & C. P. R. Stations, 20 miles from Toronto.

JERSEY CATTLE
That will put
Money in your pocket.
MRS. E. M. JONES,
Brockville, Ontario, Can.
Box 321.

ST. LAMBERT OF ARCFOST 36943
whose sire was 100 Per Cent.; dam St. Lambert's
Diana 62451. Official test, 18 lbs. 6 ozs. in seven days.
A few choice young bulls and heifers rich in his blood,
from deep and rich milking dams, for sale at moderate
prices. Tuberculin tested. H. E. WILLIAMS,
Sunnyside Farm, Knowlton, P. Q.

Wm. Willis, NEWMARKET
BREEDER OF
Jersey Cattle (St. Lamberts).
Some fine young bulls for sale at farmers' prices, if
taken at once. Also Cotswold sheep. -om

DON JERSEY HERD.
Offering choice young Bulls and
Heifers by Costa Rica's Sons.
DAVID DUNCAN,
DON, ONTARIO.
Nine miles from Toronto Market. -o
PLEASE MENTION FARMER'S ADVOCATE.

GOSSIP.
FAIRVIEW SHROPSHIRE.
Mr. John Campbell, Woodville, Ont., writes:
"My nephew will land at Quebec, if all goes
well, with our annual importation of Shropshires
early this month (July). He has notified me
that a very choice lot is coming from the flocks
of the well-known leading breeders, Messrs. A.
E. Mansell and H. Williams. He advises me
that the importation is sure to please. Our
home flock has thrived well this season. Plenty
of good fresh grass, lots of rape and vetches from
June 15th, and good health, have put the flock
in nice bloom. All being well, we will show at
Toronto, the eighteenth year in succession, and
probably at other fairs. I will not now add a
word as to what our exhibit will be, but cus-
tomers can rest assured that good Shropshires
will be found in our pens, and that the Fair-
view flock's reputation will not suffer from
comparisons."

MR. A. P. ALTON'S SHORTHORNS.
Mr. A. P. Alton, Appleby, Ont., whose farm
lies a few miles east of Burlington Junction,
near Hamilton, encouraged by the excellent
demand for Shorthorns last year, added to his
already select little herd, the red imported
cow, Northern Empress, by Northern Star, out
of Vain Empress, of the favorite Rosedale
tribe as bred at Kinellar, and in calf to Count
Vanity (74315). She is a large, smooth, well-
proportioned and useful cow of the Scotch type,
and gave her owner a beautiful roan heifer
calf, which would do credit to any family in
the breed. Northern Empress has been bred to
Mr. Pettit's roan imported bull, Prince Cruick-
shank; while among those of other families
owned on the farm are: Lady Aberdeen, a de-
scendant of the Wallflower tribe; Favorite
4th, by Grand Warrior 9322; and Miss Rock
Rose, which couples her family name with that
of the Strathallan family. Mr. Alton's atten-
tion, good judgment and judicious management
has been such as to breed up a lusty, strong,
rugged herd of cattle, which have improved
with each generation. We think we overheard
Mr. Alton say that he might visit the big sales
in Scotland this fall, and make further selec-
tions, and with his facilities and ability to
handle pure-bred stock he cannot go far astray,
since that portion of Halton Co. is becoming so
famous as a Shorthorn center.

YORKSHIRES AND HOLSTEINS:
Boars and sows, not akin, from 2 to 6
months, from prizewinners at Toronto
and local shows. A 3-year-old bull,
of the Tirania family; and young stock at
reasonable prices.
R. HONEY, Warkworth, Ont.

BROOKBANK
Is headquarters for Holstein bulls. They are going
fast; be quick if you want one. A writing, state
age, etc., preferred.
GEO. RICE,
Oxford Co. Currie's Crossing, Ont.

MAPLE HILL HOLSTEIN-FRIESIANS
Three Yearling Heifers, sired by Colanthes
Abbecker 2nd, and in calf to Daisy Teake's King
(brother to Daisy Meake's Queen, the great test and
show cow).
Three Bull Calves, sired by De Kol 2nd's Paul
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fine show cows, Lady Akkrum 2nd, Cornelia Artis,
and Madge Merton. -om
G. W. CLEMONS, St. George, Ont.

3 Holstein-Friesian Yearling Bulls FOR SALE.
Prices right. Apply to
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Maple Glen Stock Farm.
The home of officially tested, Advanced Registry dairy
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Sylvia now for sale. Price is in keeping with breed-
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Brockville, on C.P.R. or G.T.R. Glen Buell, Ont.

WE WANT TO SELL A FEW
Holstein Heifers, coming 2 years old
They are of the richest and
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strains, fine individuals, and bred to as good bulls as
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yearling bulls also for sale. -om
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AYRSHIRE CATTLE.
KAINS BROS., Byron, Ont. (R. R. London),
are offering a number of grand young bulls, prize-
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SHOW AYRSHIRES FOR SALE.
As we are not going to show any cattle at the fairs
this year, we will sell the imported prizewinning
bull, Napoleon of Auchenrain, champion and head
of first prize herd at Toronto, 1898. Also first-class
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them for that purpose. For prices and particulars
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Farm close to St. Anne Station,
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Breeders of
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AYRSHIRES, 1 yearling and 6 bull calves from 2
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BERKSHIRES. Booking orders for young pigs.
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Farm 1 mile from Ottawa. Electric cars to farm. -om

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Manufacturers of QUEENSTON CEMENT. Proprietors of
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Lord Gloster 26995 at head of herd. We have for sale seven young bulls, 4 to 20 months; also young
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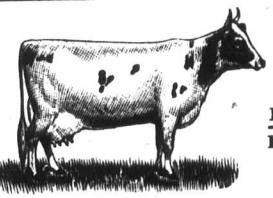

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ALL imported females of suitable age bred before leaving Scotland. Catalogue
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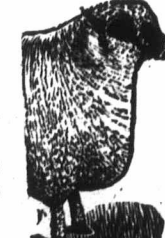
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OFFER FOR SALE: 1 imported bull, extra good; 3 imported cows, with calves at their side
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Burlington Junction Station and Telegraph Office, G. T. R., within half a mile
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Laurentian Stock and Dairy Farm, Pine Grove Stock Farm, ROKELAND, ONTARIO.
Scotch Shorthorns and Shropshires.
The imported Missie bulls, Marquis of Zenda and
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British Knight. We have a few extra good young
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We can be reached either by steamboat, the C. P. R., or C. A. R.; the C. A. R. making connection
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Ayrshires, Guernseys, Yorkshires and Shropshires are our leaders.

ALL high-class, pedigreed stock.
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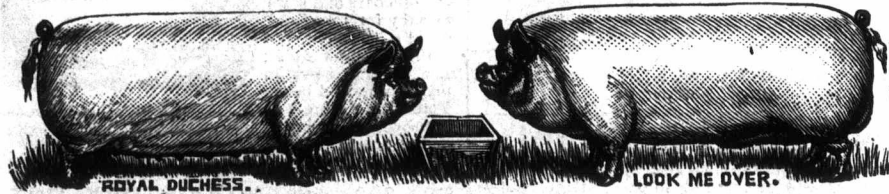
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WM. WYLIE Importer and Breeder of High-class Ayrshires
The winnings of this herd last season (1899) were
37 prizes, 17 of them being firsts; also gold and sil-
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sweepstakes at Toronto, London and Ottawa belong
to this herd—one imported bull; 13 imported females
and a number of A1 home-bred animals. A few
choice cows, heifers and calves for sale at moderate
prices.
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Ayrshire Bull Calves of 1899
One bull 5 months and young calves 2 to 3 weeks,
from some of our best imported cows. Will sell at
reasonable prices. Address:
ROBT. HUNTER,
Manager to W. W. Ogilvie. LACHINE RAPIDS,
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Summer Hill Herd

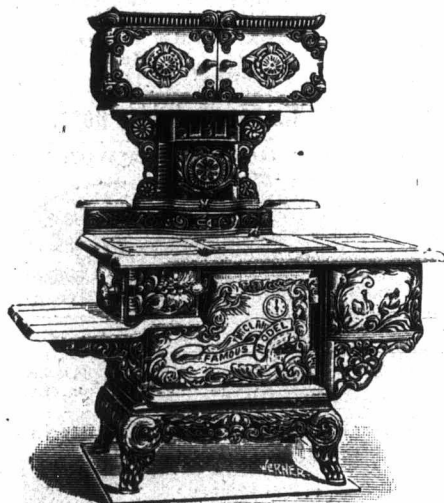
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The largest herd of pedigreed Yorkshires of the large English type in Canada. Purity of breed, size, and general excellence is my motto. One hundred awards with one hundred and five exhibits at 7 shows in 1899. A choice selection of young boars and sows of all ages for sale; also boars fit for service, and pregnant sows. Fifty breeding sows, of which 25 (twenty-five) are imported; also three imported stock boars bred by such noted breeders as Sanders Spencer and Philo L. Mills. Am also using two Canadian-bred stock boars, first prize at Toronto in 1898-99. Express charges prepaid. All stock carefully shipped and guaranteed as described. Telephone, Millgrove, Ont. Telegraph 254 Bay St. S., Hamilton, Ont.

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FAMOUS MODEL RANGE FOR WOOD.

THERMOMETER in oven door shows exact cooking heat for pies, cakes, bread, etc.
VENTILATED OVEN allows of a constant circulation of pure warm air.
STEEL OVEN BOTTOM (that cannot crack or warp) heats oven quickly.
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EXTRA HEAVY FIRE EXPOSED PARTS.
SECTIONAL FIRE-BOX LININGS AND STOVE TOP THAT CANNOT WARP.

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 LONDON, TORONTO, MONTREAL, WINNIPEG, VANCOUVER.

Government Analysis.

LABORATORY OF INLAND REVENUE,

OFFICE OF OFFICIAL ANALYST,

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"I hereby certify that I have drawn, by my own hand, ten samples of

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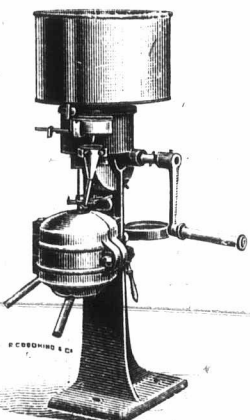
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LIST AND TESTIMONIALS POST FREE.

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Machines sent on an Eight-days Free Trial, and taken back if not satisfactory.

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THE NEW CENTURY ALPHA

BABY Cream Separators

Have never been beaten!

AN EVERYDAY STAND-BY.

SEE HOW IT TURNS UP.



SHELBURNE, JUNE 18, 1900.

The Canadian Dairy Supply Co., Montreal:
 GENTLEMEN.—I have bought a No. 2 Alpha Separator from your agent, Mr. Hugh Taylor, of Shelburne, Ont. It is now working four months, and I am pleased to give you this testimonial.

Last March I got a DeLaval on trial, which was satisfactory. Just then the Melotte agents from Dundalk got me to try a No. 1 Melotte separator, saying it would "beat the DeLaval, as it had done often before." But it came far from giving the results which they claimed for it. My barn is about 8 rods from the house, and the weather being very cold at the time, I found the Melotte separator would clog at times as the milk was a little chilled. The agents then brought a No. 2 Melotte, which gave the same results. I found that the discs in the Melotte separator would start and clog, commencing at the bottom and continuing upwards the longer you skimmed. As a result of the trial, I bought a DeLaval, and would advise my fellow farmers to try a DeLaval Separator before buying any other, as it is a machine that is well constructed, and will skim milk at any temperature and not clog.

Yours truly, SILAS MYERS.

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 327 Commissioners Street, MONTREAL.

Strong, durable, cheap. The only "Hinge" Stay. Write for circular and prices.

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ENSILAGE CUTTER B. 6

With Slow-Speed Pneumatic Elevator (Blower).



This machine is the result of years of experiment and work upon Corn Cutters and Blowers. Most of the Blowers upon the market have given only partial satisfaction, and that only under specially favorable conditions, and even now they are far from being a success. In order to produce "wind" enough they have to run at a speed that is dangerous, and that racks the machine and elevates it out very fast. The B. 6 machine will cut and elevate from five to ten tons of corn per hour while running 500 revolutions per minute. No other Cutter and Blower will do this. Have a suspicion of Blower Cutters that require high speed; they are apt to become ugly and kill a man or two while throwing themselves into the air and the surrounding country in pieces.

"The B. 6 Cutter arrived and our customer is highly delighted with the way the machine works. The machine is a 'Daisy.'" CUMSFORD & McELEN, South Woodlee, Jan. 15th, 1900.

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 Medal and Diplomas for plows at World's Fair, Chicago.

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SUCH A COMPANY IS

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(Formerly The Ontario Mutual Life Assurance Company)
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 FOUR WELL-EQUIPPED DEPARTMENTS.

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 For further information apply to any agent of the Company, or

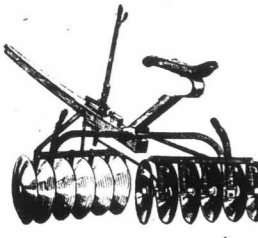
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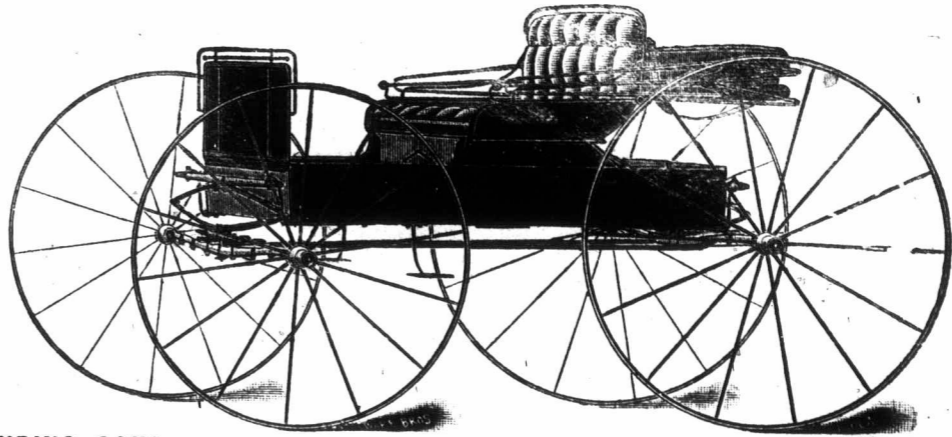
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 Road Wagons,
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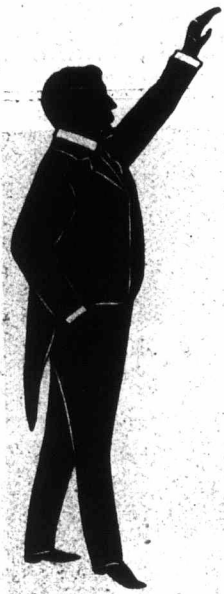
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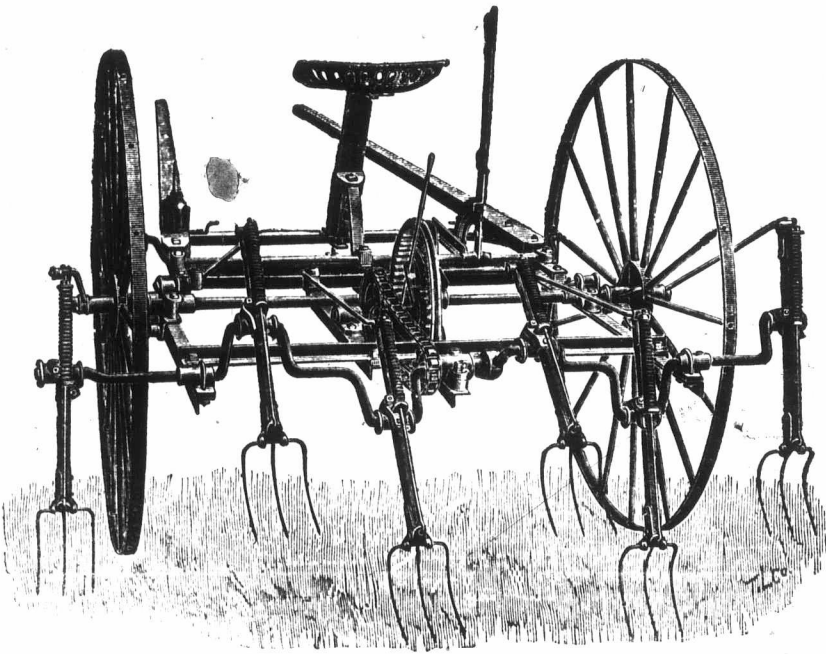
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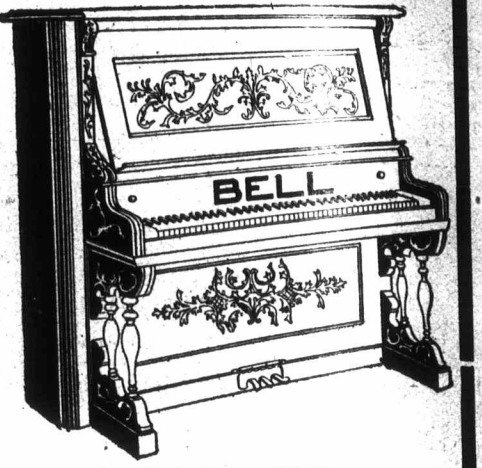
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