

NEW ARTILLERY WAR MATERIAL.

The principal factors in the evolution of the latest artillery material have been the introduction of smokeless powders, which made high muzzle energies and great rate of fire possible; telescopic sights, by which the increased range and flat trajectory could be utilized for obtaining great accuracy at long ranges; perfection of time fuses for shrapnel shells, carriages without recoil, automatic mechanisms, guns and carriage for curved fire, the Vickers's breech screw, and the use of electricity, hydraulics and hydro-pneumatic power in manipulating carriages, guns and ammunition lifts and hoists.

The modern smokeless powders have done most perhaps to develop artillery, first, because by their means the old energies of the days of black powder have been more than trebled, so that with the use of telescopic sights and range-finders long range fire has been made accurate, and is consequently the order of the day on land and sea; secondly, owing to the fact that the target is never obscured by smoke but is visible at all times, they have rendered possible a great rate of fire, which is further increased by the fact that, not leaving any residue in the gun, the tedious operations of sponging can be dispensed with.

The smokeless powders increase the muzzle energies thus:

They have a much slower rate of burning than the old, consequently guns can be made longer with advantage, and the powder gases thus acting a longer time on the projectile gives it a higher velocity. Now since the energy varies with the first power of the weight of the projectile, but with the second power of its velocity, the remarkable effect of increasing the latter is at once explained.

The two classes of smokeless powder are nitro-glycerine powders and nitro-cellulose powders. Of these the latter is preferred on the continent of Europe and in the United States. Germany, where a nitro-glycerine powder was used until recently, has finally adopted a nitro-cellulose powder; England is the only great nation still using nitro-glycerine powder cordite.

The great advantage of nitro-cellulose powders consists in producing the highest ballistics (velocity and energy) with the least possible amount of wear to the gun. The temperature due to the explosion of nitro-glycerine powders is nearly double that of nitro-cellulose powders, hence, the great wear of the guns using cordite and similar powders. This erosion is greatest at the beginning of the rifling, and abnormally enlarges the seat of the projectile, so that after a few rounds the shot is over-rammed, increasing the size of the chamber, which, as there is more room for expansion of powder gases, reduces the pressure and consequently the velocity. Moreover this enlargement prevents the proper centring of the projectile at starting, affecting thus the accuracy of fire, the projectile receiving a gyrating motion. The result is that nitro-cellulose powders give velocities exceeding 3,000 foot seconds, while nitro-glycerine powders, after a few rounds, cannot be depended upon for more than 2,500.

As an example of the small effects of erosion due to nitro-cellulose powders, a Krupp gun was fired 534 times, and then dimensions came within the acceptance limits of a new gun.

The element of accuracy of fire, so important in these days of ships steaming twenty knots an hour, is also involved in the powder used, and the first consideration; for real accuracy under service conditions is the obtaining of a powder which does not cause variations in ballistics, either through change of temperature or damage to the bore of the gun. Close upon this comes the other main consideration of a good sight. With a telescopic sight the waste of ammunition is lessened, and the accuracy of fire is increased at least 50 per cent. One of the difficulties of such sights has been to bring the cross wires of the telescopic sight the waste of ammunition is lessened, and the accuracy of fire is increased at least 50 per cent. One of the difficulties of such sights has been to bring the cross wires of the telescope in focus with the object aimed at, but Sir Howard Grubb of Dublin has invented a sight recently in which an imaginary image, practically in focus with the object aimed at, can be brought into the alignment, so that no parallax results.

Another important element for accuracy of fire is a carriage so constructed as to give as little 'jump' as possible. Accuracy of fire at long ranges is the great point brought out by all recent wars, on land and at sea, for field, naval and coast artillery, and the manufacturers of all forms of

FARMERS MAKE MONEY

Do not sell your poultry, turkeys, geese or ducks till you investigate this great Company, its object and the high prices to be obtained by dealing only with it—cash is better than trading—who last year made money out of your poultry—Did you?—No.—JOIN this co-operative company for the protection of farmers—get high prices as well as your share of the profits of selling in England. Join at once.

The Canadian Dressed Poultry Company, Limited

Capital Stock, - - \$450,000

HEAD OFFICE: HAMILTON, ONTARIO.

PRESIDENT—MR. GIBSON ARNOLDI, Barrister-at-Law, Toronto, Ontario.
MANAGER—MR. WILLIAM S. GILMORE, Merchant, Hamilton, Ontario.

OBJECT OF THE COMPANY.

THIS COMPANY is formed to advance Canadian trade with England in dressed poultry, ducks, turkeys and geese, dressed meats and other farm produce that the company may deem it advisable to deal in. This is the great object of the Company. It will be no monopoly and it cannot be made one; its success means the Farmers' success. The farmer who wants to make money must first become a shareholder in this Company, which is the only company of its kind, and by so doing show that he means business, as his money being invested, his interests and the interests of the Company are the same, and then raise poultry, turkeys, ducks and geese for the Company. This Company will buy only from its own shareholders; therefore, with care and attention every farmer and every farmer's wife and every man, woman and child of ordinary intelligence in Canada who has fifty dollars can buy ten shares and become a shareholder, and by beginning in a small way and saving his profits make himself wealthy, like Mr. Taylor has done. Who Mr. Taylor is is explained in the following extracts from a story told by Professor Robertson, the well-known Commissioner of Agriculture and Dairying for Canada, to the standing committee of the House of Commons:

"Well-to-do farmers fatten chickens. I learn also that there is money in the business. I had got the name of Mr. Samuel Taylor from one of the leading poultry dealers in London. When I got to his place I found Mr. Taylor was a successful farmer. He had begun life as a farm laborer without capital. When I visited him he had a fine farm-stead and was doing a prosperous business. I would not like to say how much money the chicken-fattening business brought him in, but I would not be surprised to learn that his annual net balance was over a thousand pounds (five thousand dollars a year)." This man had begun life as a farm laborer and by sticking to this business had made money out of it.

The Promoters are now arranging to establish not less than twelve receiving and shipping stations in Canada to be fitted with plants necessary to make the exported article as perfect as possible. The number of stations in each Province will be as nearly equal as possible, having regard for the size of the Province and the number of shareholders in each. The operations of the Company to be confined for the present to Ontario, Quebec, New Brunswick, Nova Scotia and Prince Edward Island. The Company is also engaging the most experienced help to be found in Canada and England and making arrangements in England to get the very highest price for its shipments.

The Buyers of this Company will commence operations, it is expected, on or about the first of June, 1901, when they will call on the shareholders and arrange with them as to the continuous supply—that is, the number each shareholder will raise and supply each month to the nearest receiving station of the Company. It is therefore necessary that all intending shareholders send in their subscriptions for stock at once, as the Company will only buy from its shareholders and the lists will be closed.

This is a grand chance to make money for either farmers or their wives and those who either cannot afford to keep up a large farm or who, through some infirmity or poor health, are not able to attend to the heavy duties of heavy farming.

Prices to Be Paid.—This Company will pay the very highest prices to its shareholders, so as to encourage the raising of first-class poultry, and, as it will year in and year out be selling at the high prices to be obtained in England, it can afford to pay more than the best prices now paid for birds now sold on the Canadian market.

Great Prices in England.—Chickens shipped to Liverpool, England, met with a ready sale at eight-pence (sixteen cents) per pound. As they weighed eleven pounds per pair, they sold for one dollar and seventy-six cents per pair. Just think for one moment—one dollar and seventy-six cents for a pair of chickens in England, and yet it is only a fair market price there, and the profits are equally as good, if not better, on turkeys, ducks and geese. The consignee wrote as follows about the shipment: "I was agreeably surprised at the all-round excellence of your small experimental shipment of Canadian capons (chickens). On opening the cases the birds were found to be in beautiful condition, and presented a most salable appearance. After the birds were uncased I hung one to find out how long it would retain its bright appearance, and found that it became milky white as soon as it had dried out of the chilled state; today, five days later, it is as nice looking as a fresh killed bird. I think the price obtained will both please and pay you. It is a fair market price."

Three Firms Alone Intimated Their Ability and Willingness to Handle About Two Thousand Cases Per Week at Good Prices.

Raising Poultry Pays.—It pays better to fatten them, and it pays best to ship them to England. The shipment sent to Liverpool, England, above described brought one dollar and seventy-six cents per pair; the farmer sold them to the shipper for fifty-four cents per pair, which is above the average price, as often he does not get more than thirty cents per pair; can anything be clearer than that the farmer is failing to make enormous profits? By becoming a shareholder you will commence putting the money in your own pocket.

Success.—This Company is a natural outgrowth of the great and wonderful cold storage system. Before "cold storage" became known it would have been an impossibility to carry on this great business, but now the great success of cold or chilled storage is the maker of this enormous business, which will prove a money-maker for its shareholders. Space will not permit giving a description of the great arrangements to be made, of the many receiving and shipping stations, abattoirs, cold storage plants, offices and agencies this Company will establish in the different Provinces of Canada and in England, or of the numerous employees it will engage to do the buying, killing, plucking, packing and shipping; the instructors the Company will engage will give to the working shareholders such directions and assistance as they may desire.

The Head Office will be at Hamilton, Ontario, and from there MR. WILLIAM S. GILMORE, THE EXPERIENCED MANAGER, will direct its affairs. Mr. Gilmore is already well known to many Canadians, but for those who do not know him and who would naturally like to know something of the man who is to direct the affairs of the Company in which they intend to invest their money the following extract from a letter written by the celebrated firm F. W. FEARMAN CO., LIMITED, the greatest pork packers and provision merchants, and probably the oldest established firm of its kind in Canada, to the proposed bank of this Company, will be of interest:

GENTLEMEN,—At the request of Mr. W. S. Gilmore I write to advise you that we have known him for years, and have had during that time continuous dealings with him as one of our customers. He is a practical provision dealer and butcher of many years experience. He is about fifty-five years of age, but active and progressive, and as a judge of poultry, live or dressed, he is certainly the equal of the best in Hamilton. As to his personal character, respectability and integrity, we believe he is fully to be relied on for anything he will undertake.

SPECIAL NOTICE.

Every shareholder in this Company is not obliged to raise poultry simply because he is a shareholder—anybody can buy stock in the Company, and the net profits or dividends will be divided among all shareholders alike, and it is safe to say they will get large dividends for their money.

Exclusive Privilege.—The Company extend an exclusive privilege to those who hold ten shares or more of the Company's stock to raise poultry, turkeys, ducks, geese, etc., for the Company, to supply the great demand, and to this class of shareholders the Company will pay the very highest prices for their birds. They will be given the great advantage of careful instruction, free of charge, in the art of raising and fattening poultry, as well as receiving their share of all the profits of the Company, and, as the promoters wish to make this a Company by the farmers and for the farmers, all the servants and employees of the Company will be chosen from among the shareholders and their families.

The Capital Stock of this Company is divided into shares worth five dollars each, and of this only a limited number of shares are offered for public subscription, but no subscription will be accepted for less than ten shares (\$50). If you wish to become a subscriber lose no time, but send in your subscription at once, as the stock will be allotted in the order in which the applications are received, and no stock will be held open for anyone. Fill out the APPLICATION FORM given below, be careful to state how many shares you want and the amount of money you enclose, sign your name to it and then fill in your address and send it by registered letter to Mr. Gibson Arnoldi, the President of the Company, 9 Toronto Street, Toronto, Ontario, accompanied by a marked cheque, postoffice order or express order for the full amount of your subscription, payable to the order of Mr. Gibson Arnoldi, President of the Company.

The promoters reserve the right to change the name of the Company if the Government requests them to do so as a condition to the granting of Letters Patent under the Great Seal incorporating the proposed Company, and also at the same time to ask incorporation with any other amount of capital stock than named in their discretion.

APPLICATION FOR SHARES.

GIBSON ARNOLDI, ESQ., PRESIDENT, THE CANADIAN DRESSED POULTRY COMPANY, LIMITED, 9 TORONTO STREET, TORONTO:

DEAR SIR,—I enclose you herewith \$..... in full payment for..... shares of fully paid and non-assessable stock in the Canadian Dressed Poultry Company, Limited, which I wish allotted to me, as I wish to become a fully qualified shareholder and entitled to all the advantages of the Company, as described in the published Prospectus.

YOUR NAME,..... ADDRESS,.....

gun carriages are striving to attain this end. The latest form of non-recoil carriage is that designed by Messrs. Ehrhardt of Dusseldorf, Germany, in which the gun recoils in a cradle. The characteristic feature, however, is a long telescopic trail, drawn out in firing, and by its great length preventing unsteadiness as well as jump.

The use of electricity, hydraulic and hydro-pneumatic power has also made the heavier guns practically quick firers. In one of the latest designs of Krupp mountings the latter is elevated and trained by electricity, but the rammer is operated by

hydraulic power, conveyed by means of flexible hydraulic piping. The recoil is taken up by a hydraulic cylinder, a portion of the liquid of which is used for compressing air which stores up energy and after ward used for running the gun out to the firing position. The ammunition supply is obtained electrically. On the U. S. S. Alabama the mounting for the 13-inch guns uses no power except electric, with the exception of the recoil arrangements, which are hydraulic combined with heavy spiral springs. A recent Vickers mounting, now being supplied to the Turkish

Government, is worked entirely by hydraulic power.

These are the main features in the recent development of artillery. Ere long the traversing and elevation of our sea-coast guns will probably be done by electric power, and the tedious operation of retracting heavy guns—bring the gun back to the loading position without firing it, as is so often necessary at drill with guns on disappearing carriages—will soon be accomplished by an electric motor.

Good Name For It.

'What kind of paintings did you say they

were, Francis?' said a mother to a small daughter who was describing a 'view' to which she had been invited.

'They were there impressionless paintings, mamma.'

'What church are you going to this morning, William?' asked the young man's mother.

'To the First,' responded William. And presently as it was one of those rare Sundays when it didn't rain, the deceitful young man mounted his wheel and rode out among the groves.