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A SPLENDID OPPORTUNITY TO WIN A FORTUNE. EIGHTH GRAND DRAWING, CLASS H, AT NEW ORLEANS, TUESDAY, AUGUST 14, 1883—150th Monthly Drawing.

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LIST OF PRIZES.

1	CAPITAL PRIZE		$75,000
1	do	do	25,000
1	do	do	10,000
2	PRIZES OF $5000		10,000
5	do	2000	10,000
10	do	1000	10,000
20	do	500	10,000
100	do	200	20,000
200	do	100	20,000
500	do	50	25,000
1000	do	25	25,000

APPROXIMATION PRIZES.

9	Approximation Prizes of	$750	6,750
9	" "	500	4,500
9	" "	250	2,250
1967	Prizes, amounting to		$265,500

Application for rates to Clubs should be made only to the Office of the Company in New Orleans.

For further information write clearly, giving full address. Send orders by Express or Mail, addressed only to

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Unlocks all the clogged avenues of the Bowels, Kidneys and Liver, carrying off gradually without weakening the system, all the impurities and foul humors of the secretions; at the same time Correcting Acidity of the Stomach, curing Biliousness, Dyspepsia, Headaches, Dissiness, Heartburn, Constipation, Dryness of the Skin, Dropsy, Dimness of Vision, Jaundice, Salt Rheum, Erysipelas, Scrofula, Fluttering of the Heart, Nervousness, and General Debility; all these and many other similar Complaints yield to the happy influence of BURDOCK BLOOD BITTERS.

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50 Brls. Heavy Mess Pork;
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100 Dozen Brooms;
100 Boxes and caddies McDonald and Adams' TOBACCOS, Mariners, Imperial, Napoleon, Little Sargeant, Black Bird, Prince of Wales, Bird's Eye, and Brunette;
150 Half-chests TEA;
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20 Tubs BUTTER;
20 Puncheons MOLASSES;
20 Kegs SODA;

CHOICE BRANDS.

Superior Extra Strong.

BAKERS AND

PATENT FLOUR,

CORNMEAL & OATMEAL,

—AT—

Lowest Wholesale Rates.

JOHN McLAGGAN.

July 11, 1883.

Miramichi Advance.

CHATHAM, - - - - - JULY 19, 1883.

The Miramichi Valley Railway

The Railway advertisement of Messrs. Alex. Gibson, John Pickard and Hon. Wm. Muirhead, which appeared in the Fredericton *Capital* of Tuesday and an ADVANCE extra of the same date, as well as in the *World*, of yesterday, indicates that the work of building the Miramichi Valley Railway is to be undertaken by men of capital and experience and that the policy of inaction delay and obstruction, which has marked the history of the undertaking for the last ten years, is about ended. The situation of the matter is that certain men of means and experience, who have long wished to see the Railway constructed and had hoped that local parties who professed to be able to go on with it, would have done so, learned, a short time ago, that there was really no company in existence and that the organization professing to be the Miramichi Valley Railway Company had neither capital subscribed or paid up nor any legal status whatever. Such being the case, they decided to take the matter up, some of the gentlemen who were understood to be directors of the alleged "Miramichi Valley Railway Company" joining with them and, with others on the Miramichi, in Fredericton and elsewhere, subscribing the whole, or nearly the whole capital of $200,000 and paying $20,000 or more thereof as required by law. This means business and, as the advertisement shows, the meeting for organization is to take place at Fredericton on the second of next month—the earliest date possible under the provisions of the Act. If nothing unforeseen happens it is the intention of the Company to secure a contract from the Government and commence construction without delay. The people of Northumberland and York are to be congratulated on the bright prospects of this important work and it is to be hoped that any sectional feeling that may have existed and retarded the undertaking heretofore will now be laid aside, so that all may pull together and no further time be lost.

Since the above was written the *Advocate* of yesterday's date has come to hand with an advertisement over the names of Robert R. Call, John Miller and Robert Swim, calling a *first* meeting of "the stockholders of the Northern and Western Railway Company of New Brunswick" at the Waverley Hotel, Newcastle, on the same day and at the same hour as that advertised as called in Fredericton by Messrs. Gibson, Pickard and Muirhead. Mr. Call is the gentleman who has for a good many years been placing his name on official documents and in the papers as President of the "Miramichi Valley Railway Company" and "the Northern and Western Railway Company" and who has been a co-Director of these alleged companies with several of the gentlemen now interested with Messrs. Gibson and Pickard in the combined York and Northumberland organization. "John Miller" may mean John C. Miller, Esq., of Derby, though we can hardly believe he would join with Mr. Call, or anyone else, in further obstructive tactics, while it is not to be assumed that Mr. Swim will, when he realises the situation fully, stand in the way of the road being built and so many of his friends all along the Valley still left without the Railway accommodation now almost within their reach. It would be more reasonable and patriotic for these gentlemen to go heartily with those who are able to carry the undertaking through. We hope their advertising a meeting on the very next day after the *bona fide* corporators announced theirs will turn out to be only a hasty and insufficiently considered act, suggested by their knowledge of what others were doing and a desire on their part to protect some rights they may imagine they have in the premises. At all events they cannot prevent the York and Northumberland parties from going on and while they may continue to delay the work they cannot finally defeat its accomplishment.

Sale of Lumber Licenses.

The *Royal Gazette* gives notice that the right of License to cut Pine and Spruce Saw Logs, and also Pine, Birch, Hacmatac, Cedar, Maple and Ash Timber and Lumber until the first day of July, 1884, on Crown Lands which were recently under License in the Province, will be offered for sale at auction in Fredericton on Wednesday, Thursday, and Friday, the 8th, 9th, and 10th of August next, beginning at 11 o'clock in the morning of each day.

The Regulations as to price, etc., are as follows,—

The Timber Licenses shall be offered for sale as follows:—

First—Licenses for one year, with the right of renewal for the two following years, subject to the Stumpage and Regulations:—

For Spruce and Pine Saw Logs, per thousand superficial feet, Eighty cents, 80 cents.
For Pine, Hacmatac or Hardwood Timber, per ton, Eighty cents, 80 cents.
For Cedar Logs, per thousand sup. feet, Sixty cents, 60 cents.
For Railway Ties, Two cents each, 2 cents.
For Piling, Ten cents each, 10 cents.
For Boom Poles, Three cents each, 3 cents.
For Shingles, Twenty cents per thousand, 20 cents.

Second—Licenses for five years, the mileage being payable each year in advance, subject to Stumpage for each year during the continuance of such Licenses, as follows:—

For Spruce and Pine Saw Logs, per M. sup. feet,	$1 25
For Pine, Hacmatac or Hardwood Timber, per ton,	1 25
For Cedar Logs, per M. sup feet	0 90
For Railway Ties,	0 02
For Boom Poles,	0 03
For Shingles, per M.	0 25
For Piling,	0 10

And for all other descriptions of Lumber, such as Ship Timber, Knees, &c., &c., twelve and one half per cent. of the market value thereof at the mill, place of shipment, or place of consumption in the Province.

The upset mileage in all cases to be Eight dollars per square mile, subject to the Stumpage, Regulations and restrictions.

The Hemlock Bark Injustice.

The *World*, which seems to be, the special organ of its Company's President, the ex-Surveyor-General and the scalers who are yet largely in sympathy with their late chief, cannot understand that the intention of the Government in changing the Hemlock Bark Regulations may have been to realize only one dollar per cord and that such intention may have been thwarted and defeated, either ignorantly or intentionally by the under-officials of the Crown Lands Department. Referring to the subject last week, we said

The manner in which the new Hemlock bark Regulations are carried out is fast condemning them and driving people out of the business. It was understood that the Government's intention was to realize stumpage to the amount of about one dollar per cord under the regulations. To secure this a tax of one dollar per thousand superficial feet, measured as ordinary saw logs are scaled, viz,—merchantable lumber—is levied. Many of the scalers, however, have now become more than strict in the interpretation of their instructions and they measure everything in the form of hemlock lumber which the peelers cut. This makes the tax, in some cases, amount to as much as $2 a cord, which is more than one-half the value of the bark on the river bank. We know of one operator on Barnaby River who intended to bring out 500 cords, having to abandon his operation altogether because of the excessive scaling. Others are preparing to suspend operations for the same reason. It is to be hoped the Government will attend to the matter and that the Surveyor-General will deem this part of the Province, of sufficient importance to honor it with a visit. When he comes he will, no doubt, learn that his officers are not endeavoring to make his administration as satisfactory as they did that of his paedecessor.

Our remarks, which are here given in full, were not of wearying length, for our desire was simply to direct the Government's attention to what we believed to be an injustice to a large industrial interest in this and adjoining counties, with a view of the changes necessary being effected. We recognized the fact that while the Government, as a whole, had a certain intention in the matter, the Crown Lands Department had, in its practical administration, defeated such intention. We blamed the scalers, the "officers of the Department" and also hinted that the Surveyor-General was not quite as attentive in the matter as he ought to be. In doing so we acted on the information we had received and which we yet believe was entirely reliable. We had, in the first place, the assurance of a member of the legislature that the leader of the Government had stated to him that the Government's intention was to so regulate the hemlock bark scale as to realize one dollar a cord as stumpage tax, and in the second place, we had the facts stated in the above-quoted reference to the subject. We thought that any local paper which followed our example, by discussing the matter, would endeavor to make public such information as it possessed, with a view of relieving the over-burdened industry, but the *World* saw an opportunity to make some political capital against the Government and, in embracing the chance, forgot the main question altogether. It says the scalers do their duty and, being in their confidence, it quotes from what it says is their instructions, by which they are ordered to scale any log "that may have been peeled, at its full contents without regard to the quality of the lumber." It further says that the ADVANCE is inspired from official sources to assail the poor, injured scalers, in order to shield the Government and, in fact, goes to the length of nearly a column with a characteristic reply to our paragraph.

We shall not follow the *World's* treatment of the matter further, than to say that, divested of its verbiage, it is an attempt to show that the scalers are a set of innocent angels—only surpassed, in that respect, we presume, by the Chief Seizing Officer—that the Surveyor General is a monster of oppression, the Government dishonorable and contemptible, and the ADVANCE so entirely bad, "slippery" and "cunning" as to shock the *World*, and its guileless President, and bring tears of pity for his poor scalers to the eyes of the late Surveyor-General.

We can afford to pass over the imputation that we are inspired by the Government in the matter, for the columns of the ADVANCE for the past nine years show that its general support of a party or Government has never caused it to refrain from condemning Departmental mistakes or mismanagement. In fact, we point out the errors of our friends oftener than we do those of others to whom we are opposed, for, in the one case, we may hope to secure reform, while, in the other, our chances for doing so are not so good.

In this bark matter we stated what we have excellent reason to believe was the intention of the Government, viz., to levy a tax of one dollar a cord on hemlock bark. The *World* may think that by pleading the alleged "instructions" to scalers it can establish its charges against the Government in condemnation of the new regulations, but it happens that these regulations were contemplated, if not prepared under the late Surveyor General's *regime*, the licences, which were approved by the present Government setting forth as follows,—

"All lumber cut under this license "shall be scaled and taken account of "in the usual or customary method of "scaling and taking account of lumber "for stumpage. Practical lumbermen know that "the usual or customary method of scaling" is to take account of merchantable lumber only. They know, also, that those who buy logs pay for nothing but merchantable stuff, and neither the Government nor the operator expects that wood used about camps or refuse logs are to be accounted for to the Crown Lands office. It may be that the letter of scalers' instructions requires *all* lumber to be scaled, but it is never done.

Whether the departure from the Government's intention in this matter is blameable upon the Surveyor-General, persons in his office, Seizing Officer Barker, or the scalers, matters little to those whose operations have been so scandalously over-scaled. Our belief is that the fault has been chiefly with the subordinate officers of the Department, although we cannot altogether exonerate the Surveyor-General from blame for being misled by the emisaries of the late Government, to the detriment and damage of an important industry. In the hands of men with a single eye to the promotion of the mutual interests of the operators and the Government the new regulations can be worked satisfactorily, but, in the hands of the manipulators left in the department by the late Surveyor-General, they may be converted into a nice arrangement for keeping his successor and the Government in hot water—especially in Northumberland. These agitators may not be very much pleased with the fact that the Government has taken action in the matter and issued instructions to Mr. Barker with a view of relieving the bark operators of the unjust scale imposed upon them. The latter may, however, be assured that it is the intention of the Government to levy no more than one dollar per cord on their industry, and whenever the scalers are unreasonable and disposed to stretch their "instructions" as some of them have already done, let the fact be stated and we think redress may be relied upon.

The Salmon-Hatchery Question.

Mr. Mowat, whose letter appears in another column, ought to be a good authority on the subject of our fisheries generally and particularly in regard to salmon, but as he is very much astray in several important points on which we have exact information, it is fair to assume that he is not any nearer the truth in others. We are prepared to accept his statement of the salmon taken in his own district, but it does not follow that the Hatchery is entitled to any credit for the large quantity of fish in the river this year. The Restigouche, as we all know, is one of the best protected rivers in the Dominion. Mr. Mowat, is, himself, entitled to much credit in this connection, but, efficient officer though he was, there would not have been the fishing he describes this season had it not been for the guardianship of the riparians and lessees. It has been *the protection of the natural spawning grounds* and not the Hatchery that preserved the Restigouche salmon fishery.

Mr. Mowat is altogether wrong in stating that the salmon supply is being maintained on the Miramichi. Our best year for salmon since Confederation, was 1874. We had no Hatchery in operation then and, although there was fair fishing for a month or six weeks of last season, salmon have been noticeably decreasing in numbers in the river since the Hatchery was established. The general reader of Mr. Mowat's letter would at once believe that the Hatchery has done wonders for the Miramichi, but when he is informed that there is a gradual falling off, instead of an increase in our salmon fishery, he will, at once, realize that the whole argument, being based on a square misstatement of facts, must fall.

If Mr. Mowat will turn to the Departmental blue books he will find that he is reported as having placed 50,000 salmon fry from the Restigouche Hatchery, in the Nepisiquit in 1878, while the Miramichi establishment is credited with having contributed to the salmon stock of the same river in subsequent years. Yet Mr. Mowat cites the scarcity of salmon in the Nepisiquit this season to support his prejudices in favor of the Hatcheries. If artificially hatched salmon do such wonders as he would have us believe, and the Nepisquit has received a share of them, why does Mr. Mowat not admit they have been a failure there, instead of doing what he can to cry down the Nepisquit and attribute its poverty of salmon to the absence of a hatchery? All salmon rivers have good and poor years, and we may expect, when the Nepisquit has its next good year, to find Mr. Mowat, or Mr. Wilmot attributing the apparent improvement in its fishery to the salmon-fry it received from the Restigouche and Miramichi Hatcheries. Such a line of argument would be quite as fair and consistent as Mr. Mowat's quoting the Nepisquit as a river suffering because its salmon fishery needs artificial maintenance when he knows it has already received whatever advantage can be derived from our hatcheries.

Having spent a good many years of his official life in superintending a salmon breeding establishment and placed himself on record as a champion of that process of surpassing the Creator's method of reproducing the noblest of our game fishes, it is natural for Mr. Mowat to stick to his text; his prejudices can never be accepted however, by those whose industry has been injured because a few specialists have succeeded in diverting to their own pockets public money which should have been expended in protecting our salmon nurseries from poachers, and who have so long deceived the public that they are, themselves, incapable of realizing how great a humbug their whole system is.

CENTRAL RAILWAY SURVEY.—Work on the survey of the Central Railway was begun last week by Mr. Bright, C. E., commencing at Gibson and proceeding towards Salmon River, at the head of Grand Lake. It is understood that the survey is to be pushed on as rapidly as possible. The survey party consists of twelve men.

SIR ALBERT SMITH'S DEATH.—The County Council of Westmorland, N. B., has passed the following resolution:—

Whereas, By the death of Sir Albert J. Smith this county has lost one who, for thirty years, was its representative in the Councils of the country; and

Whereas, By his death our county, Province and Dominion at large have met with the loss of an able and honorable public man; and

Whereas, Our great loss is severely felt and mourned by the people of our county as well as beyond its bounds;

Therefore Resolved, That this board tender to the bereaved widow, Lady Smith, and the members of the family of the deceased their heartfelt sympathy in their hour of trouble and grief, and convey to them our expression of the sorrow with which the people of the county mourn the death of the departed.

Home Items.

—"All your own fault
If you remain sick when you can
Get hop bitters that never—*Fail.*

The weakest woman, smallest child, and sickest invalid can use hop bitters with safety and great good.

—Old men tottering around from Rheumatism, kidney trouble or any weakness will be almost new by using hop bitters.

—My wife and daughter were made healthy by the use of hop bitters and I recommend them to my people.—Methodist clergyman.

Ask any good doctor if hop
Bitters are not the best family medicine
On earth.

—Malarial fever, Ague and Biliousness, will leave every neighborhood as soon as hop bitters arrive.

"—My mother drove the paralysis and neuralgia all out of her system with hop bitters."—*Ed. Oswego Sun.*

—Keep the kidneys healthy with hop bitters and you need not fear sickness.

—Ice water is rendered harmless and more refreshing and reviving with hop bitters in each draught.

—The vigor of youth for the aged and infirm in hop bitters.

If you would escape the ravages of that scourge of the Summer season, Cholera Morbus, keep Dr. Fowler's Extract of Wild Strawberry at hand for use. In that and all other forms of Bowel Complaint, it is infallible. Sold by J. D. B. F. Mackenzie. Chatham, N. B.

The Potato Bug.

A good many of our farmers whose potatoe crops are threatened with destruction by the Colorada Potato Beetle, or what is, quite as properly, called the Potato Bug, may require, just now, some information respecting the pest and the best mode of dealing with it. We, therefore, present a few notes on the insect, together with practical suggestions gathered from Dr. Tache's pamphlet on the subject, and other sources,—

The perfect insect is of ovoid shape, less than half on inch long when it is contracted, but is larger when, in action, it has the head and prothorax disengaged and elevated; its breadth is about three-tenths of an inch and height about a quarter of an inch. The female assumes larger proportions in the abdominal region when the receptacle is full of eggs.

The female is larger than the male and is distinguished by the greater development of the abdominal part; when she is loaded with eggs the distended part always encroaches on the wing-sheaths and shows on the edge of the latter like a yellowish-brown border, which enables her to be distinguished from the male at some distance; becoming more distended, the abdomen forms a sack below the wing-sheaths. The general character of the structure and organization of the insect are those of its order and tribe. Neither the larvæ nor the perfect insects have hairs; all the integuments are of extraordinary solidity. The eggs are deposited in rows and by groups, of which the number most frequently ranges from ten to forty; but groups have often been observed of all degrees of numerical value.

The eggs are usually deposited on the lower side of the potato leaf, but sometimes also upon the stalk, or on the upper side of the leaf; on other plants, and occasionally even on other objects. It is curious to witness the work of laying. The egg, which swims in a yellowish liquid in the receptacle, is pushed against the object to which it is to adhere, preceded by a little drop of the liquid; it is held in this position for at least a minute, often much longer, according to the humidity of the surrounding air, to be completely expelled by an upward movement, only when the dessication of the glutinous liquid by which it is firmly fixed has taken place. The eggs are small, oblong, sharpened at the ends, of a fine orange color, and glossy from the protecting varnish which covers them; they are about a sixteenth of an inch in length and are very slender. The receptacle of a pregnant female, when much distended, can contain at one time more than a hundred eggs, all perfectly developed, besides those which are in progress. These cases, however, must be rare, for in numerous dissections more than sixty-five eggs which had arrived at their perfect growth at one time have not been found.

The larva when hatched is about a sixteenth of an inch long, having its head and feet black, and with two black rings on the first segments; the rest of the body is of a dark red; it is furnished with six feet, is very vigorous and moves with ease. In a few days it grows to the size of a large bug, to which it bears a resemblance, at a distance, at this stage of existence. In the process of development, the larva passes through red, brilliant rose colour to a colour approaching orange, which it assumes at the time of burying itself in the ground to undergo its transformations. During its whole existence, the head, legs and above-mentioned rings of the larva are black; it is plainly marked with two rows of black points on the sides; these points are found under the abdomen of the perfect insect, with the exception of the row which has disappeared or become transformed. The larva always retains the ovoid form, is fairly active, and travels, when necessary, from one field to another. At the time of burying itself, it has grown nearly to the size of the perfect insect, and always retains a repulsive appearance, in spite of its brilliant colours. The pupa calls for no particular notice; it is of a dingy orange colour.

On leaving the ground, some time during the month of May—earlier or later, according to the season, and some much later than others,—they seek the potato in pairs. Usually mating takes place when the plant is sending out its first leaves. Before beginning to propagate they appear generally to wait the presence of their favourite food, the stimulus of which has carried their fecundity to the frightful degree from which we now suffer.

In its perfect state, the potato beetle is abstemious, except for a few days after leaving the ground—the mischief it commits is often unnoticed by careless observers—but the larvæ are very voracious; the field left to them is doomed to destruction. The perfect insect and the larvæ further damage the plant by soiling the stalks and leaves with their ordure and their disgusting excretions.

The perfect bug appears in May and June; the second generation in June, July and August, and the third generation in July, August, September and October. The eggs are laid in May and June by the 1st generation, in June, July and August by the second and in July, August, September and October by the third, while the larvæ is in the ground once visited all the year round. The perfect insect is in the fields of New Brunswick from June until October.

The first of the eggs are seen under the leaves in May, earlier or later, according to the season and the forwardness of vegetation, and continue to show themselves till the end of the season, so long as the leaves keep green.

The vitality of the potato beetle, in all stages, is astonishing; it resists scorching heat, storm and cold, and survives under conditions which, it would seem, must cause its death in a few hours. The autumn larva buries itself in the ground, penetrating, before the frost, to considerable depths, whence it issues a perfect insect, after remaining in the earth for seven or eight months, according to locality and season, in the North American regions.

We are confronted, in this insect, with a phenomenon of fecundity without a parallel. In spite of its natural enemies of the animal kingdom, in spite of the war of destruction carried on by man, this insect, which has so recently become known, has, in less than twenty years, covered with its legions over a million and a quarter square miles, which it occupies to such a degree that the slightest neglect, in any place whatever over this vast extent, is followed in the same year by the more or less complete loss of the potato crop thus left to the ravages of the insect; for all the eggs which are not destroyed by an enemy of some kind, except those of the latter part of the season, seem to produce with certainty a perfect insect, whatever, generally speaking, be the atmospheric vicissitudes.

Counting for one female the partially successful hatching of 500 eggs of her brood, there would be, as the product of about twenty days' laying in the month of May, 225 females for the months of June and July, of which each can produce 500 eggs, or 225 females for July and August, of which each wonld propuce 500 larvæ, or 225 females for hybernation in the ground. A single female, or a single pair of the month of May, is capable, then, of leaving in the soil in autumn, fer the following year, upwards of eleven millions of couples (11,000,000); more than twenty-two million descendants (22,000,000) of both sexes. It must be remembered that there are millions of them on each mile of country invaded, endowed with such powers of multiplication, and that, notwithstanding, war properly conducted always succeeds, unfailingly succeeds, in saving the crops, and this under economical conditions which do not unduly detract from the value of the return from the potato crop; in fact, the expense and care would be almost insignificant if all proprietors of fields and gardens would faithfully discharge their duty in this regard.

In the course of about thirty days, each female lays daily. Hence the last eggs are much later than the first, and thus it happens that the first beetles give three generations of larvæ, whilst only two are produced by the majority of the eggs of the later beetles, the last comers of the succession being destroyed by the rigour of the season.

The only sure means of fighting the insect, and these only completely successful when employed with perseverance and without relaxation, are the gathering and destruction of the perfect insect, the crushing of the eggs and especially the use of arsenite of copper (Paris green) for the larvæ, the latter of which succeeds of itself, and is the only one which is unfailing. Undoubtedly any means whatever besides these, which would accomplish the destruction and death of the insect at all stages and degrees of growth, without hurting the plant, would be efficacious, provided that it suited the purse and available labour of the farmer; but innumerable attempts of every imaginable kind of remedies have been made for more than fifteen years, by hundreds of thousands of persons, superintended by scientific men, and practically tested on a large scale but without success. With such results, is it not deplorable to find expedients, often of the most absurd kind, and quack preparations, recommended even in agricultural journals? Is it not painful to see the press raising objections and exciting prejudices, a hundred times met and refuted, against the only remedy which has been found efficacious against a plague which Europe views with dread at a distance, instead of seeking to gain approval for the methods now practised and firmly established in places where the same objections and the same prejudices have, under the lash of necessity, been compelled to yield to reason?

The objections to the use of Paris green, are in brief: 1. That there is a social danger incurred by the fact of the practice of putting a virulent poison into the hands of everybody, so to speak. 2. That the plants must absorb poison, and, consequently, become poisonous. 3. That the soil itself will become saturated with poison, to the detriment of plants, of man and of animals.

It is, no doubt, painful to recommend the general use of a poisonous substance; in fact, it would be improper to do so were it only on a question of minor importance; but when it affects, neither more nor less, public prosperity, and the comfort or misery of whole communities, it then becomes a necessity to which, willingly or unwillingly, we must, sooner or later, submit. If sooner, with direct and immediate advantage; if later, then only after having been subjected to wretchedness, suffering and irreparable loss.

Experiments made by eminent scientists prove that,—1. That plants cultivated in soil largely mixed with Paris green contained not a particle of Paris green or its components in their substance; 2. That the quantity of Paris green in the soil required to begin the work of deterioration in the vegetable growth is such that the use of Paris green in the quantities necessary to protect the crops from the beetle might be continued for ages in the same field without any appreciable effect, on the impossible supposition that the total mass of the poison would remain intact all the time; in other words, that there is not the shadow of such a danger.

It is proved that the *prudent employment* of Paris green is absolutely free from danger; it is equally proved that the application of Paris green may become a necessity, wherever the devastating insect has penetrated. The experience of nearly the fifth of a century in the United States is the demonstration of the practical truth, that Paris green is the only known effectual remedy, and that the farm culture of the potato can only be conducted profitably, in countries invaded by the beetle, on condition of using Paris green.

Paris green alone has solved, after thousands and thousands of fruitless researches, conducted by scientific men and by agriculturists, with a commission to make enquiries, and the qualifications necessary for the proper conduct of the investigation. It is not merely an insecticide, pure and simple, which is necessary; it is the establishment of a method of practical agriculture which demands the employment of an insecticide capable of remaining effective, and of lending itself to the other conditions of the problem.

Picking machines, insect gatherers and other mechanical contrivances for taking the crop of beetles and larvæ from the potato plants have been tried; but, in the end, these are not worth the trouble and expense, and the enemy thus attacked is always the conqueror.

There remain, as the only practical means, the hand-picking of the perfect insect and larvæ, the crushing of the eggs on the leaves and the employment of Paris green.

The hand-picking of the perfect insect on its first appearance in spring, and the crushing of the eggs on the young plants, also in spring, are proceedings which are commendable, and which should be carefully attended to during the first weeks of the sprouting of the potatoes, in May and at the beginning of June. But when the larvæ have begun to make their appearance in numbers, and when the potatoes have many leaves, there is then only the one means to employ, which, fortunately, has of itself been sufficient always and everywhere, and that is Paris green, the only agent capable of making head against a real attack of the beetle, whatever be the extent of the field.

Paris green is in the form of an impalpable powder of the most beautiful green, very heavy, and adhering persistently to objects on which it falls. It is insoluble, or nearly so, in water. From its tenuity it colours relatively enormous quantities of water in which it is held in suspension, or of flour with which it is often incorporated to be used against the potato beetle. It is known to be a virulent poison, which acts in extremely minute doses.

The packages containing Paris green should be ticketed in a particular manner, giving warning as to the poisonous nature of the contents. Great care should be observed in keeping Paris green out of the reach of children, and in taking every precaution to prevent animals from obtaining access to the place in which it is kept, to the utensils used or to the fields in which is employed. Paris green must be used as an insecticide upon no plants except the potato—the exceptions to this rule are of too delicate an application for the general public. The utensils which have been employed in the distribution of Paris green must be used for no other purpose, in any manner or at any time, for particles of this substance persistently adhere to wooden or tin vessels, brooms, etc., so employed. Care must be taken not to inhale the poison, and not to allow it to come in contact with skin affected with cracks, chaps, cuts or wounds of any kind. All other precautions, also, which care and prudence suggest, should be observed.

There are two methods of applying Paris green: in a dry and in a liquid state.—Each of these has its peculiar advantages and disadvantages, and each has its adherents. The advantages of the dry state are its adhering better to the leaves, and, in the absence of heavy rains, its retaining its power for a longer period; the advantages of the liquid state consist of the facility with which it is applied, and the diminution of the danger attending its use.

In using Paris green in the dry state, it is mixed with from twenty to thirty times its volume of ground gypsum, ashes, slack lime, or still better, with flour—the worst is as good as the best for this purpose. The more intimately it is mixed the better and more economical will be the result. When the Paris green is of superior quality and carefully mixed with finely ground flour, one part of poison to forty of flour is sufficient.

The liquid method is, however, the best, and we, therefore, recommend it.

In applying it a teaspoonful (level, not heaped) is sufficient, that is, about 110 grains (quarter of an ounce) of Paris green, of superior quality, to an ordinary pail holding from two to two and a half gallons of water. A pound of Paris green is sufficient, therefore, for sixty-four pails of water, or about 140 gallons. Should the Paris green be of inferior quality, or adulterated, a greater quantity, proportioned to the reduced value, would be necessary.

According to the number of insects, at all stages, appearing on the potatoes, there must be used, for each application per acre, from two to eight pails of water into each of which has been put a teaspoonful of Paris green. The number of applications vary with the number of insects attacking the field; the owner must be sure to make a fresh application on every renewal of the attack. The rule is, not to suffer the insect to devour and soil the potato plants. It must not be forgotten, either, that heavy rains wash the poison from the leaves.

The following is the mode of application: The Paris green being measured in a spoon, or, which is better, having been previously divided into papers containing the requisite quantity, is put into a pail of water. If the poison has been divided beforehand in papers, the paper, after being simply opened, is thrown into the pail, so that further manipulation is unnecessary. Care must be taken then, and whilst sprinkling it, to stir the mixture, for Paris green, being insoluble, must be kept in a state of suspension, so as to be equally diffused through the water.

Furnished with a small broom, with a handle long enough to prevent the hand from being needlessly thrust into the water, the operator enters the rows of potatoes, carrying the pail in one hand and the broom in the other. Whenever a perfect insect or a larva is observed on the stalks or leaves, the liquid should be stirred up with the broom, which then takes up the water well coloured with green; with it lightly sprinkle the insects and the plants on which they appear; sprinkling right and left the two rows between which the operator is walking. This process is continued till the whole field has been traversed, always taking two rows at once, thus reducing the labour of going over the field by one half, taking care to agitate the liquid every time the broom is charged, and sprinkling the plants and insects on both right and left.

This operation should be performed rapidly but carefully, and be renewed as often as the insect appears. In fields which are very badly attacked, it is often necessary to go over them twice a week, or even three times if there have been rains The process, as may be seen, is very simple and cheap; any one may in this way go over and protect several acres during the time which would be scarcely sufficient to hand-pick a single acre, with the further advantage that Paris green effectually clears it, a task which can never be accomplished by hand-picking.

The destruction of the insect must in all its stages be continued in autumn, even after the potatoes are no longer exposed to injury, for the larvæ which are not destroyed now will be perfect insects in spring.

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Chatham, April 18th, 1883.

NOTICE.

ANY person who, without my consent, in writing, makes, constructs or put in operation the Champion Creamer for which five different articles of patent have been obtained, for its construction, or any person or persons who procure such Champion Creamer from any person not authorised and uses it, or any person infringing on such Champion Creamer will be prosecuted by me with the utmost rigour of the law.

GLODE CONWAY,
Proprietor for the County of Gloucester of the Champion Creamer.

Dated at Bathurst this 3rd day of July, A. D. 1883.

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WILSON'S Carding Mill at Derby, is now in full operation. All orders left at the Mill will be promptly attended. Wool left at the store of M. M. Sargeant, Newcastle, E. A. Strang, Chatham, or with Wm. Stothart, Moorfield, will be taken to the mill and returned within one week.

R. D. WILSON.

Derby, May 16, 188