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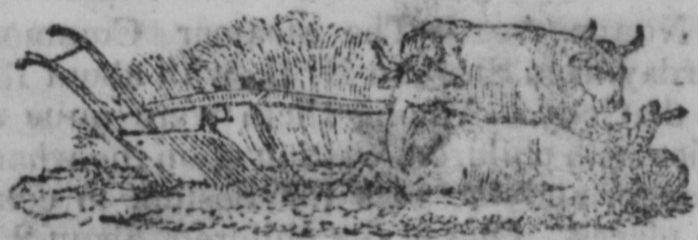
"Our Queen and Constitution."

By James S. Segee.

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### AGRICULTURE.

REPORT ON THE AGRICULTURAL CAPABILITIES OF  
THE PROVINCE OF NEW BRUNSWICK.

BY J. F. W. JOHNSTON, F.R.S., S.L. & E.

(Continued from our last.)

#### CHAPTER XV.

Suggestions as to Improvements which may be promoted by  
the exertions of Agricultural Societies.

In several parts of the Province Agricultural Societies exist, headed in general by active, zealous, and intelligent men, whom I have had much pleasure in meeting, and from whom I have received much information. There is nothing uncommon or peculiar to the country in the complaints I have heard expressed by the heads of these Societies, that they are inadequately supported by the general mass of the farming population. The same complaints are made, more or less loudly, in nearly all parts of the world—the cause of advancing Agriculture being almost everywhere supported and promoted by the few. As the value of knowledge to the practical farmer becomes more generally understood, probably this indifference in the masses will be overcome.

That Agricultural Societies are capable of doing much good, no one will deny who has attended to the results which have followed from their exertions in some of the countries of Europe. That they are often ill supported, ill directed, and are sometimes found asleep at their posts, is not more true in the agricultural than in other walks of life, and is no argument against their establishment, or their claim to the general support of the country.

But it has in most countries been found desirable to unite the best heads, the warmest zeal and the soundest discretion of the whole agricultural community in a Central, National or Provincial Council, capable at once of embracing those large views which comprehend the good of the whole, and of descending to, and minutely discussing the small details on which the special culture of each district, and the profits of its farmers depends. Through such a central council, board or society, an impulse may be given, and a general direction to the proceedings of County and Local Societies—an example is set, and advice given, and the general wisdom and discretion of the whole solves the doubts and removes the difficulties which lie in the way of those who preside over the agricultural improvement of the several parts of the country. The languid in remote districts are stimulated, the discouraged are cheered up to new efforts, and a unity and fixedness of purpose is imparted to the little knots of willing men, who by council and example, are labouring in remote places to improve the art by which they live, and to elevate in the social scale the class to which they belong.

It would therefore, I think, promote the general advance of scientific agriculture throughout the Province were a Provincial Agricultural Society to be established—with such a constitution, and such a staff of officers as exhibiting no party bias of any kind, and regarding agricultural improvement only as a means of promoting the good of all, should command the general confidence and support of the entire community.

In regard to such a Society, I take the liberty of observing—

First.—That it ought to be an entirely voluntary society, supported mainly by its own funds, and having full power to elect all its officers.

Second.—All topics of discussion should be prohibited at all its meetings, which are in any degree of a political or party character, or are likely to become subjects of party discussion before the Provincial Legislature.

Third.—It may fairly claim from the Legislature an annual grant in promotion of its general objects—and so long as the managing council possesses the confidence of the Legislature, the grants which are now annually made to each of the County Societies ought to pass through the hands of the Central Society, and be subject to a certain extent to their control.

Fourth.—In the event of a Central Agricultural School or College being established in the neighbourhood of Fre-

derickton, or elsewhere, it might be directed in part or in whole by the Council of this Provincial Society.

Fifth.—In return for these privileges, the Society should be bound to report every year to the Assembly how the money granted to themselves had been expended—how that apportioned to each of the County Societies had been applied—what had been done in the College—what exertions they had themselves made during the past year for the progress of the Province—what the County Societies had done—what they would recommend in aid of a more rapid progress—what new means they would desire—what hinderances stood in their way, and how they were to be removed. Such a report could not fail to be valuable, generally acceptable, and generally useful. It should therefore be annually published at the expense of the Assembly, and widely diffused throughout the Province.

But two things are indispensable to the beneficial working of this Society—

First.—It must have the general confidence of the Legislature and of the Province, and must exhibit no party bias. Among other means by which, in consistency with our representative institutions, it might be made to combine the wisdom, zeal, and opinions of all, it might be provided that the President and Secretary of each County Society should be ex-officio members of the governing body or General Council of the Provincial Society.

Second.—It must be provided with a zealous, energetic, skilful, experienced and discreet Secretary. The whole life and efficiency of the Society depend upon this officer—knowing what the Agriculture of the Province is, what it may become, and how this improvement is to be brought about. If a man possessing this knowledge, free from prejudice, open to conviction, ready to comprehend the influence of circumstances in modifying principles and rendering inexpedient generally useful modes of procedure—if such a man could be found, who would willingly throw his heart into this matter—no reasonable sum which the Province could pay would approach the great value of the services which in a few years he might render to the best interests of the agricultural community.

Besides this central Society, the formation and support of local Societies in every County should be encouraged. As at present, they should receive grants in aid of their funds from the Province, as they do now, only through the Provincial, to the Council of which they should report, as the central Society does to the Legislature. In more limited districts, Farmer's Clubs with Agricultural Libraries attached, would be eminently useful; and in encouraging and aiding these, a portion of the funds both of the Provincial and of the County Societies, might be very usefully expended.

Supposing these Societies to be organized something after the manner above described, there are numerous points to which for the benefit of the Province, their attention might be especially directed; such as—

1st. The encouragement of a system of thorough drainage, especially on the heavier soils of the Province.

I have already spoken of arterial drainage by which main outlets are provided—the system of thorough drainage is a perfecting of the means for carrying off the surface water which this primary drainage has begun. It consists essentially in establishing a system of ditches about 3 feet deep and 18 feet apart, over the entire field to be dried, at the bottom of which ditches a passage for water is left either by putting in 6 or 9 inches of stones broken of the size of road metal or hollow tiles of burned clay, and filling them up again to the level of the soil.

On my first arrival in the Province, I was doubtful how far it would be safe to recommend the introduction of this method of improvement which has proved so successful in England. A careful consideration however of the nature of many of its heavier soils—of the climatic conditions of this part of the Continent—especially of the mean annual fall of rain, and the baking and parching effects of the severe droughts of summer, which render a deeper available soil necessary to the verdant growth of the plants—together with the results of actual trials made in different parts of the Province; these considerations have satisfied me that in North America, as well as in great Britain and Ireland, much good is to be expected from the judicious introduction of a system of thorough drainage.

Thorough drainage such as I have described, has not hitherto been much practised in New Brunswick. Mr. Henry Cunard, upon his farm near Chatham, on the Miramichi, has skilfully and completely dried some of his fields by this method, and as he assured me, with a reasonable expectation of profit. Others I believe in the same neighbourhood,—for there are upon that river and its tributaries many excellent and zealous farmers,—have, I believe, drained to a small extent; but generally throughout the

Province, very little has been done in making trials upon the efficiency or profit of this means of improvement.

The following quotations comprise all the information tendered to me in answer to my queries regarding the experience of practical men in New Brunswick as to the practice, benefits and profits of thorough drainage:—

My land is composed of various soils, all of which require draining—my drains are made 4 feet wide at the top and 3 feet at the bottom, and 4 feet deep. I fill the drain with the stones taken from the land, choosing round stones one foot in diameter for the sides, and stones a size larger for the cover, and then I fill in with 18 inches of the top, covering with brushes or straw, and levelling the soil over all. The cost is one dollar per rod for labour, the stones are free. The previous year to digging my land, I dug a drain across the head of the slope 6 feet wide at the top and 4 at the bottom, and make a vent on to the river; while digging I find out the sprouts, cutting a drain just above, and run it into the main drain, I then level and plough the land three times, which makes it in good order for a green crop.

JOHN H. REID, York.

Our principal drains are open, the shorter ones are dug about 3 feet deep, 2 of which are filled with small stones and then covered over; we have covered some with broad flags extending across the ditch, to prevent the earth getting through and obstructing the water current at the bottom. The result has been so highly satisfactory that we consider ourselves only beginning in this branch of good husbandry.

WM. WILMOT.

I have taken off surface water by open drains with great success where there was a great flow of water. I have made underground drains through a swamp, having cut off the Springs that fed the swamp, and have succeeded well. I cut drains 3 feet deep, no wider than necessary for the workman to use his tools freely in. I piped the drains with stones drawn from the field in the form of a triangle and filled smaller stones over the piping to within 18 inches of the surface, I covered the stones with a light layer of straw and filled in the earth; cost 2s 9d per rod.

ROBERT D. JAMES, York.

I have had a good deal of experience in what is called French drainage, both for the purpose of cutting off springs and removal of surface water, and consider it to be a profitable improvement where there are many small stones to be taken off the land, (which is generally the case in wet high lands in this country.) I have the drains dug 3 feet deep, one foot wide at the bottom, the small stones put in the bottom, the larger ones in top, the whole of the stones being about 18 inches deep, cover with fir bushes or straw about 6 inches, then fill in and plough over.

EDWARD SIMONDS, York.

I drain wet land for the purpose of removing surface water. I take the course of my drain with a little descent across my field, ploughing it 4 feet wide, making the drain very slanting on each side until it comes to the pan; I then dig from 6 to 12 inches deep, which is sufficient to carry off the water—open drains are best to carry off surface water, springs may be drained with deep narrow drains filled with stones part way, and then with earth; but the frost going so deep in this country disturbs the earth and stones, so that in a few years covered drains are apt to get stopped.

ISRAEL PARENT, York.

The above opinions are all in favour of drainage, but none of the writers adopt methods such as our best English and Scotch farmers would approve of.

Mr. Reid's drains are too large and expensive; and are intended partly to drain the springs which show themselves on his sloping fields, and partly to bury the numerous stones which overspread it. The same is the case with the drains put in by Mr. James. They are such as may fitly be used to lay swamps dry, but could not profitably be inserted for the purpose of carrying off the surface or rain water only.

Mr. Wilmot and Mr. Simonds both bring the stones too near the surface. Twenty four inches is the smallest distance where slopes are employed, which ought to intervene between the upper surface of the stones in the drain and the soil. Indeed if Mr. Parent be correct as to the depth to which the frost will penetrate and disturb the materials of which the drain is made, the upper surface of the stones ought to be still further below that of the soil.

I have heard from many persons in conversation, the objection to covered drains which is put by Mr. Parent, and is one which is not without an apparently good foundation. The frost, when the land is uncovered with snow, is observed to harden the soil to a depth even greater than three feet; but it does not follow from this that the materials of a drain laid at that depth should be displaced so as when the thaw returns to render the drain inefficient. I have been told on the contrary, that drains only one foot in depth have continued unimpaired even after the severest