

of the Council of Agriculture of the Province of Quebec, be revoked, and that the said Council of Agriculture be in future composed of the following persons:—

Hon. A. C. P. R. Landry, Senator, Beauport.  
 Hon. John McIntosh, Agronome, Waterville.  
 Hon. H. G. Joly de Lotbinière, Agronome, Lotbinière.  
 Rev. M. T. Montminy, Curé of St. Georges, Beauce.  
 F. avien Dupont, Notary, St. Liboire.  
 Benjamin Beauchamp, M. P. P., St. Hermas.  
 Milton McDonald, M. P. P., Acton Vale.  
 Joseph Girard, M. P. P., St. Gédéon.  
 Joseph de la Broquerie Taché, Notary, Quebec.  
 I. J. A. Marsan, Professor, School of Agriculture, l'As-  
 somption.  
 Robert Ness, Freeholder, Howick.  
 Thimothée Brodeur, Freeholder, St. Hugues.  
 Charles D. Tylee, Freeholder, Ste. Thérèse de Blainville.  
 Henry S. Foster, Agronome, Knowlton.  
 Rev. M. E. Dauth, Curé of St. Léonard.  
 Dr. Wilfrid Grignon, Freeholder, Ste. Adèle.  
 Basile Lamarre, Freeholder, Longueuil.  
 Rev. L. O. Tremblay, Director of the School of Agricul-  
 ture, Ste. Anne de Lapocatière.  
 A. A. Ayer, Exporter of butter and cheese, Montreal.  
 Ora P. Patten, Freeholder, agent, Montréal.  
 Andrew J. Dawes, Agronome, Lachine.

Certified.

(Signed) GUSTAVE GRENIER,  
 Clerk of the Executive Council.

**Notice—Gratuitous distribution of plans of barn-byres and of pamphlets on drainage.**

The Hon. L. Beaubien, Commissioner of Agriculture and Colonisation, requests us to inform our readers that, by addressing the Secretary of the Department, plans of barn byres and pamphlets on drainage may be obtained gratuitously.

**Notice.—Herd-books**

Dr. Couture, 49 rue des Jardins, Québec, is the secretary of the herd-books and stud book of Canadian cattle and horses, and of the swine and sheep registers recently opened by the Council of agriculture.

In future, all requests for registry in the above books as well as all letters, documents, &c., connected with them, should be addressed to him.

All letters requiring an answer must contain a 3-cent stamp.

ED. A. BARNARD,  
 Sec. Coun. Agriculture,  
 Director of the *Journals of Agriculture*.

**Agricultural Clubs.—Important Notice.**

The agricultural clubs already in existence and those shortly to be instituted, are requested to apply to the secretary of the Department of agriculture, who will forward to them, gratuitously, for the use of their members, certain pamphlets on agriculture, and all the information on that subject that the department is able to afford them.

H. G. JOLY DE LOTBINIÈRE,  
 Pres. Council of Agriculture.

#### NITROGENOUS MANURES.

The consideration of this subject is of primary importance because nitrogenous manures are more essential than any other kind of manures to the farmer who wishes to obtain from his land its maximum yield of crop. They are, besides, the most expensive manures which the farmer has to purchase; not that nitrogenous manures alone, in whatever quantity they may be applied, will produce a maximum return in crops; they will not, because although nitrogen is the most essential, and at present the most expensive, food which plants require, still it is not the only food required, and if a crop has not available supplies of phosphoric acid, potash, and lime in quantities adequate to the full growth of that crop, no amount of nitrogenous manuring will remedy the deficiency in the other plant foods. As Liebig expressed it very many years ago in his "Law of Minimum," it is that plant food which is present in least quantity in a soil that regulates the maximum amount of crop which that soil will produce; for if a soil be deficient in any one substance—nitrogen, phosphoric acid, potash, or lime—it will not give its full possible yield of crop until that deficiency be remedied. I have often met men who ought to have known better ask for evidence of the use of nitrate of soda and sulphate of ammonia when applied without any other manure whatever.

Both nitrate of soda and ammonia salts will give much greater yields than no manure at all. Thus on the average of fifteen years' permanent wheat growing at the Royal Agricultural Society's experimental farm at Woburn, Beds, the plot receiving annually a dressing of 200 lbs. ammonia salts (equivalent to 50 lbs. ammonia per acre) gave 25.1 bushels of dressed corn and 24 cwt. of straw per acre. The plot receiving a dressing of 275 lbs. nitrate of soda (also equivalent to 50 lbs. ammonia per acre, gave an average yield for the fifteen years of 24.9 bushels dressed corn and 25.4 cwt. straw per acre. The yields on these plots compare favourably with the unmanured plot, which shows an average of 16.2 bushels of wheat, and 16.8 cwt. straw per acre. I think that the necessity of nitrogenous manure is even better shown by the fact that the plot receiving a full dressing of mineral manures only just beat the one receiving no manure at all by half a bushel of wheat on the average of the fifteen years.

In the case of the permanent barley plots at Woburn, the difference is even more marked. Here we have from the unmanured plot a yield of 24.6 bushels of barley, and 14.1 cwt. of straw. With 200 lbs. ammonia salt per acre we get 37.7 bushels of barley, and 21.4 cwt. of straw; and with 275 lbs. nitrate of soda per acre we have 38.6 bushels of barley and 23.2 cwt. straw.

These results show conclusively the value of nitrate of soda and ammonia salts, even when used alone, and used, too, upon land where the same crop is grown continually year after year.

The influence of nitrogenous manuring is even more marked in ordinary rotations. A friend of mine, in dressing a field of swedes with nitrate of soda left a strip six yards wide down the center of the field without any nitrate dressing. The result was shown by a considerable decrease in the yield of roots over this strip of land as compared with the yield in the rest of the field. The barley in the following year received 1 cwt per acre of nitrate of soda all over the field, but along the strip where nitrate had been omitted the preceding year the barley at harvest was not so high by full six inches, and even in the third year on the seeds the position of this strip was distinctly marked by the appearance of the crop. And now having shown the great value to the farmer of artificial nitrogenous manures, let me consider in detail the sources of