

AGRICULTURAL.

From the Genesee Farmer.

LIME.

There is no fact connected with agriculture more incontrovertibly proved, than that the presence of lime in the soil is indispensable to the production of wheat. Dr Mitchell, one of the oldest observers and writers this country has yet seen, appears to have been one of the first to call the attention of farmers to this fact, and attempt an explanation of the reasons which led to such a result. In the mean time, those self-taught philosophers, the Germans of Pennsylvania, had by experience discovered its value and adopted its use, in preparing their soils for the production of this staple crop, and were thus enabled to keep up the fertility of their farms and their productiveness for wheat; while the Dutch and English farmers in the once rich valleys of New York, and on the banks of the Mohawk and Schuylkill, found their farms growing worthless for wheat, and have long been compelled nearly to abandon its cultivation. In New England the result was the same, only the exhaustion was sooner performed, as the stock of calcareous matter in the earth being much smaller, and the effect of the alkaline substances produced in clearing the land on the animal matter existing in the soil, was more quickly dissipated. Art is beginning to restore to the earth the lime which was in some places deficient by nature, or had been exhausted by injudicious farming, and fertility and the capability of raising wheat is returning to those sections, where for years the power has been unknown.

The method in which lime performs the effects which it is undeniable may be attributed to it, does not yet appear to be fully understood. Were not its efficiency, as in the case of gypsum, owing to some chemical rather than mechanical cause, it would hardly seem possible that so small a quantity as is sometimes used, would produce so immediate a result, or where larger quantities are applied, that the benefits should be so permanent. It is most probable however that its action is principally confined to preparing the animal matter existing in the soil, or furnished it by manures, for conversion into gluten, a substance which exists more abundantly in wheat than any other vegetable, and which appears to have some relation to the gelatine of the animal kingdom.

Boullion La Grange says that "gelatine oxygenated becomes insoluble, and vegetable extract we know becomes so from the same cause, now lime has the property of attracting oxygen, and, consequently of restoring the property of solubility to those substances that have been deprived of it from a combination with oxygen. Hence the use of lime on peat or muck lands, and on all soils containing an excess of vegetable insoluble matter." "When lime is applied upon land in which any quantity of animal matter is present, it occasions the evolution of a quantity of ammonia which may perhaps be imbibed by the leaves of plants, and afterwards undergo some change so as to form gluten. It is upon this circumstance that the operation of lime in the preparation for a wheat crop depends; and its ascertained efficacy in fertilizing peat, and in bringing into a state of cultivation all lands abounding in dry roots, hard fibres, or inert vegetable matter." (London.)

According to Chaptal, "lime forms insoluble compounds with almost all animal and vegetable substances that are soft, and thus destroys their fermentative qualities. Such compounds however, exposed to the continued action of the air, alter in course of time; the lime becomes carbonate; the animal or vegetable matter decomposes by degrees, and furnishes no products as vegetable nourishment." In the view lime presents two great advantages for the nutrition of plants; the first, that of disposing insoluble bodies to form soluble compounds, the second that of prolonging the action and nutritive qualities of substances be-

yond the term during which they would be retained, if these substances were not made to enter into a combination with lime. Thus a striking example is furnished by the nutritive qualities of blood as it exists in the compound of lime and blood, obtained from sugar refineries and known as sugar baker's scum. Blood alone applied to the roots of plants, will destroy them with few or no exceptions, combined with lime, it forms one of the most efficient of manures, as its qualities are moderated, prolonged and given out by degrees.

Lime has another effect, a mechanical one, independent of its chemical ones as stated above. Where wheat is sown on clay land, the mechanical effect of lime in opening the soil and rendering it more permeable, especially if applied in the form of silicious marl, cannot be too highly appreciated. Farmers are well aware that on stiff clay lands, much of the grain that is sown does not vegetate. The reason of this is that air, or in other words oxygen, is essential to germination, and clay if a little moist, forms an impenetrable sheathing to the grain. The presence of lime prevents this; even the small quantity retained by the kernel when merely rolled in lime after being steeped in brine, will produce this effect more or less, and thus aid the growth of wheat chemically. It is well understood, that in those sections of our country where a soil is exhausted of its calcareous matter, by the application of stable manure, a most vigorous growth of straw can be obtained, but the berry will be of the most inferior and worthless kind; resembling in quality those grains, of which gluten forms only a minor and subordinate portion. In such cases it is evident the chemical action of lime is wanting to furnish the ingredients that in the vessels of the plants are converted into this peculiar and indispensable substance. The vast amount of calcareous matter in the wheat soils of western New York, have hitherto presented much attention to the subject of lime as a renovator of the soil, and rendered its application generally unnecessary; but we think the time in many places on many farms has arrived, when more attention should be paid to the subject, and series of experiments instituted to ascertain the effect of lime on the soil, and the kind and quantity most suitable and beneficial per acre. Perhaps no constituent of the soil is of more importance to the farmer than lime, and the understanding of its nature and uses should, if possible, be commensurate with its utility and value.

From the Novascotian.

LATE AND IMPORTANT NEWS.

Her Majesty's Ship *Pique*, Capt. Boxer, arrived on Monday, 42 days from Cork, with the Head Quarters of the 93, under the command of Lieut. Col. McGregor. London dates by her are to the 19th of January and Cork to the 22d. The news is every way important, and we have curtailed our Legislative reports to make room for the articles which follow.—It will be seen that the Earl of Durham has been appointed Governor General of British North America, with extraordinary powers, and that a federal union of all the North American Provinces, for mutual objects, which we were denounced for hinting at as a probable cure for Colonial evils in our letter to Mr. Chapman, is now *gravely discussed in Parliament, and recommended by Sir Robert Peel*.—An extract from his speech will be found in our Extracts, which, if made in our Assembly, would be considered treasonable—but which, coming from such a source, the Colonial Tories will be bound to treat with respect.

Her Majesty's Ships *Hercules* and *Vestal* were to sail in a few days with troops for Halifax. The whole number of troops at present under orders for Canada, is said to be 9,000.

The *Malabar*, 74, was under orders to convey Troops to Canada.

Sir George Arthur sailed on the 4th, Jan., from Portsmouth for New York, with a number of Military Officers, among whom we notice the names of Colonels Loring and Marshall, and Major Charles Head.

Major General Sir J. McDonnell, equerry to the Queen dowager, has been offered the command of one of the divisions of the army to be sent to the Canadas, and it is understood has accepted it. The right hon. gentleman at present commands one of the districts in Ireland.

Colonel Campbell has been appointed to command the Artillery in Canada. Two companies of field Batteries, one Troop of Horse Artillery with the Rocket Troop, will form the Brigade, and expect shortly to embark for Canada.

The winter in England had set in extremely cold.

The papers announce the death of Major Gen. Norcott. Lord Eldon died on the 19th Jan. in his 87th year.

The *Star*, Packet, had arrived at Falmouth.

EXTENSIVE FIRES.—The Italian Opera House in Paris, has been destroyed by fire,—several lives were lost. The Winter Palace at St. Petersburg has been burnt, with the greater part of its contents. The Royal Exchange, London, has also been destroyed by fire.

(From the *Cork Southern Reporter*, Jan. 20)

GOVERNMENT MEASURES RESPECTING CANADA.

Parliament met on Tuesday, and on that and the next (Wednesday) evening Lord John Russell developed the course of Policy which ministers intend pursuing with respect to Canada, and the Legislative Measures which have been resolved on. In the course of the long and eloquent speech the noble Lord stated the outline of the Bill which it was his intention to bring in, which would suspend that part of the Canadian Constitution by which it was made necessary to call together the members of the Legislative Assembly, it was proposed that the power of legislation should be given during the suspension of the Constitution to the Governor in Council. It was also proposed, with a view to the final adjustment of the existing differences, that the Governor and Council should have recourse to the opinions of the American authorities themselves, summoning for that purpose a board, to consist of 23 persons, ten for each of the Canadas, and the remaining three to be selected from the present Legislative Council. The propositions which should emanate from this Assembly, after being assented and agreed to by the Governor, to be transmitted to England and proposed to parliament, with a view of making such modifications in the Canadian Constitution of 1791 as might eventually prove the foundation of an harmonious and free constitution for the people. Lord John concluded by moving an address to the Queen assuring her Majesty "That while the house was ready to afford redress to real grievances they were fully determined to support the efforts of her Majesty for the suppression of revolt and the restoration of tranquillity." A long debate ensued in which Mr Hume, Mr Grote, Sir R. Peel, Lord Howick and other members took part. A motion was made to adjourn the debate until the next opening on which the house divided.

For the adjournment	28
Against it	183
Majority	163

The address was then agreed to without a division.

The Gazette of the same evening announces