

the disease was imported from abroad, and spread from the metropolitan market as a centre. "The precise channel by which the poison came into the market cannot indeed be indicated, but the subsequent history of the disease affords, in their opinion, conclusive evidence against the assumption of spontaneous origin. In England it has followed the lines of cattle traffic, and in Austria and Prussia it has always been brought by diseased cattle. The commissioners are not of opinion that varieties of soil or even meteorological conditions have any marked effect on the spread of the disease; but they suggest that differences of elevation may be important; not a single outbreak having been recorded as having occurred at a height of 1,000 feet. In Yorkshire, the disease was almost entirely confined to the lowlands and dales, while in other counties it has been more severe, if not more prevalent, in marshy and low-lying districts." This statement carries with it its own lesson. We cannot alter elevation, but we may reverse the unfavourable sanitary conditions caused by the presence of water stagnating in the soil, poisoning both it and the atmosphere.

The commissioners also point out the danger which arises from deficient ventilation in cattle sheds, from the custom of retaining manure within or close to such buildings, and from a supply of impure water; all of which, unfortunately, are conditions of but too frequent occurrence. The plague may not, indeed, be produced spontaneously where those conditions exist, but once introduced under such circumstances, the poison spreads with increased virulence.

They also state that "the cattle plague varies greatly in its severity and fatality," having assumed a mild type, "while in others it has killed 95 per cent. of the cattle attacked." They do not attempt to account for this; they merely state the fact; and if attention to ventilation, to diet—not drugs—to the purity and abundance of the water supplied to the animals, to cleanliness in and around the buildings in which the cattle are housed, and the perfect drainage of their passages, all conduce to a mitigation or a prevention of the evil, surely none can hesitate to employ every means in order to secure these advantages for their stock, whenever all or any of them are defective.

The commissioners believe that it is now the time to carry out important changes in the mode in which meat is supplied to large towns; and they recommend that special attention should be directed to the improvement of the slaughter-house system.

Dr. Voelcker's Annual Report.

THE Report of the chemist of the Royal Agricultural Society of England for 1865, is just to hand, and we cull from it a number of facts and results which will not be devoid of interest on this side of the Atlantic. The Professor has been engaged in a number of important investigations, requiring a large amount of skill, time and perseverance; several of them not being yet completed, and all of them having a direct bearing on the advancement of practical agriculture. The excessive drought that prevailed in England last summer, greatly interfered with the success of several of the Professor's field experiments undertaken by eminent farmers in different parts of the country.

ON THE EFFICACY OF SALT AS A FERTILIZER.

In several parts of the country, experiments were made with common salt (Chloride of Sodium), applied to potatoes, swedes, mangolds, and grass seeds, but generally with no very decided results. This the Professor accounts for in a great degree from the unusual drought and heat of the spring and summer, which prevented the beneficial action which salt, under more favourable circumstances, is capable of exercising. Owing to the above stated cause, the application of salt, especially when applied in pretty large quantities, proved absolutely injurious to vegetation. In one series of experiments in which salt was applied on very light soils, varying from 7 cwt. to 8 cwt. per acre, the results were alike beneficial, and in proportion to the amounts.

"On light soils, especially, salt appears to be useful for mangolds, and in all probability to turnips and swedes, and other root crops. The failure of the same series of salt experiments on certain light soils contrasting with their effects on other similar soils induces me to think that salt (and probably other valuable and highly soluble manures) is often put in the land too late in the season. Even on light land, I would suggest that 4 or 5 cwt. of salt be sown broadcast as early as February, and that its application be not delayed until the time of sowing of turnips or mangolds, and still less until the roots are singled."

The effects of salt, when used as a manure, have not as yet been very satisfactorily determined in Canada. On the whole, there is little room to doubt that, when timely and judiciously applied, its influence is beneficial to both roots and cereals. As early application of it, as practicable, in spring, as recent experiments point out in England, should be carefully kept in view. The crude potash salts which can now be obtained in Germany at very low rates, have been tried in England with marked success, especially on light soils, with mangolds or turnips. As these salts contain a very large amount of common salt, the Professor is unable to say whether the potash or the chloride of sodium which they contain, exercises the greater influence.

UNWHOLESOME DRINKING WATER.

Dr. Voelcker's attention had been called to the supposed insalubrity of water from different parts of the country, and in some instances found from careful analysis that the suspicions were well founded, and that some water, although apparently clear and pure, is totally unfit for drinking either by man or beast.

"As examples of bad water, I may mention two.—In one of them, I found a considerable quantity of nitrogenous organic matter, and an unusually amount of oxide of lead, a constituent which occurs but rarely in well water. An accurate determination gave me nearly one-half grain of oxide of lead in the imperial gallon; and I ascertained that this poisonous oxide occurred in solution partly as bi-carbonate of lead, partly as nitrate of lead. On enquiry, I found that the water was naturally very soft, and came from a well situated near a manure heap, the drainage of which no doubt passed into it in a more or less oxidized condition. It is well known that in soils, more especially porous sandy soils, animal refuse matter gives rise to the formation of nitrates, which act upon lead. It appears also probable that decomposing animal matters exert a similar injurious effect upon leaden pipes. The unfavourable position of the well in this case, fully accounts for the contamination of the water with deleterious animal matter, and the still more poisonous oxide of lead.

"The second sample of water, unlike the first, which was slightly discoloured, was perfectly colourless, bright, and, as far as smell and appearance went, quite unobjectionable. On examination, however, it was found to contain an unusually large amount of saline constituents, and amongst these, no less than 19 grains of nitrate of potash in the imperial gallon, as will be seen by the subjoined analysis":—

An imperial gallon, on evaporation, left 72.05 grs. (dried at 300° Fahr.), containing

	Grains
Organic matter.....	1.51
Oxides of Iron and Alumina, and traces of Phosphoric Acid.....	1.15
Lime.....	15.12
Magnesia.....	1.75
Sulphuric Acid.....	8.51
Chlorine.....	8.30
Nitric Acid.....	10.29
Potash, Soda, and Carbonic Acid.....	23.47
Soluble silica.....	1.95
	72.05

These constituents combined together represent the composition of the water as follows:—

	Grains
Organic matter.....	1.51
Oxides of Iron and Alumina, and traces of Phosphoric Acid.....	1.15
Sulphate of Lime.....	14.46
Carbonate of Magnesia.....	3.78
Carbonate of Lime.....	16.37
Chloride of Sodium.....	13.67
Nitrate of Potash.....	19.2
Soluble Silica.....	1.95
	72.13

A water like the above is totally unfit for drinking, and bad for all domestic purposes.

ADULTERATED LINSEED-CAKES.

It would appear that oil-cake professedly made from pure linseed, (flax,) continues to be greatly adulterated, notwithstanding the exposures that have been made of late years by means of chemical analyses. Bran, pollard, rice, dust, and similar cheap mill refuse are the principal ingredients substituted for linseed.

"In most cases the adulterating materials are cheap and less nutritious feeding substances than linseed; but occasional cupidity and ignorance lead to sophistications which are highly injurious to stock fed upon the adulterated cake. Thus, in one instance, I found a linseed cake which had a very good appearance, and a nice taste, to be largely adulterated with croton oil beans, a powerful irritating poison. The cake in question was sent to me for examination, on account of the serious mischief which it had done when it was given even in very small quantities to cattle."

As linseed cake is now made in Montreal, Toronto, Woodstock, and perhaps a few other places, it will be satisfactory to Canadian farmers to be assured that this very valuable feeding article may be depended on as being genuine. The sample sent from the Toronto Oil Mills to the late Dublin Exhibition, obtained a premium and was highly commended for its quality. American oil-cake has long maintained in England a high character for purity, and consequently superior feeding qualities.

COTTON SEED MEAL.

This substance has recently been used in Britain, and generally, we believe, with satisfaction, for fattening cattle. It has, no doubt, a high feeding value, and may be safely used after the greater part of its coarse and indigestible husk has been removed by sifting; otherwise, it is apt to produce a clotted state of the bowels if given in large quantities. Dr. Voelcker gives the following analysis of such cotton-meal, from which its great feeding power will be obvious at once.

Moisture.....	8.86
Oil.....	29.34
*Albuminous compounds (flesh-forming matters).....	22.75
Gum, Mucilage, and Sugar.....	7.58
Woody fibre (cellulose).....	24.63
Mineral matters.....	6.78
	100.00

*Containing Nitrogen..... 3.64

These few illustrations clearly indicate the valuable service which analytical chemistry is rendering to agriculture. In a country like England, where manufactured (artificial) foods and manures are so largely in request, the farmer has no reliable guarantee against adulteration and frauds but in an exact chemical analysis: and this is now so well understood, that manures, &c. are purchased on the condition that the bulk of the article comes up to the chemical standard.

HAMILTON HORTICULTURAL SOCIETY'S SHOW.—Owing to the pressure of Editorial matter on our columns, we are compelled to defer our notice of the above-named Exhibition till our next issue.

Agricultural Intelligence.

The Crops.

THE *Bruce Courier* is led to believe that the crops in Bruce "never presented a better appearance than at present. The fall wheat especially attracts attention. There is a large amount of spring wheat sown, which also looks remarkably well. The general appearance of the country indicates a bountiful harvest, and that, coupled with the prospect of high prices, has reason to gladden the heart of the farmer, and make him feel hopeful for the future."

The *Peterborough Review* of the 6th inst., states that "the weather generally has been most auspicious for the growing crops. From all parts of the country we have the most favourable reports of the spring rain, which leave little doubt of an abundant harvest."

THE W EAT MIDGE.—We learn from the *Ohio Farmer* that this insect pest is making great ravages among such of the fields as have partially escaped the effects of the cold of last winter. The midge is generally worse on fields in bad condition and such as are late in ripening their grain.

THE LOCUSTS.—The *Salem Republican* says that down in that region, the locusts for nearly two weeks have in countless numbers, taken possession of every green limb and branch, and by their continual, monotonous song, make a great deal more noise than music. As usual they came from the ground, taking the night for their time, and immediately began ascending trees, shrubbery, sakes, or anything else that favoured their aspiration for high places. They are reckoned to be of the sort usually called seventeen year locusts, (*cicada septendecim*.) The year 1849 was the date of their last visit.