that such Societies should be organized for. If the useful knowledge they possess or acquire is only to be known in their committee rooms, they are of no benefit to general improvement. It is not thus the Agricultural Societies act in the British Isles. All the practical experience, the result of experiments, &c. is published to the world, and its usefulness not confined to the members, though the members are very numerous, and include almost the whole of the farmers. We hesitate not to say, that however despised and unsupported we have been, our exertions have been faithfully and honestly devoted to advance the best interests of our adopted country; and we say further, that no individual in Canada has given so much time and money to this object as we have done.

At the Meeting which took place at the last Smithfield Cattle Show, Dr. Playfair delivered two Lectures, of which the following are the outlines:—They may be as usefully applied in Csnada as in England.

The learned lecturer commenced by stating that he had chosen for his subject the connection which already subsisted between practice and science. For this purpose he should refer chiefly to the common operations of the sub-soiling, ploughing, draining, the irrigation of land, the rotation of crops, &c. He trusted the period had now arrived when the mutual relation of practical and scientific men was beginning to be thoroughly understood, and there would no longer be any attempt by the former, to underrate the value of scientific investigations, or of the latter to propound their theories dictatorially. Science at present was not in a condition so as to prescribe laws for the practice of agriculture, but must content itself with investigating the abstract laws on which the art depended. On the other hand, the experience of agriculturists alone, even for a long course of years, and particularly in confined localities, must be at best unsatisfactory. For example, the colonists of Virginia rejected the system of manure pursued in this country, and grew successive crops of wheat on the same soil for 100 years, until at length the crops diminished and finally ceased to grow. Tobacco was also grown in a similar manner, as was the case to this day in Hungary, and it was but of little benefit to the cultivator to know that he had done wrong when the crops had ceased to grow. Why then, were the fields of Virginia so long fertile? Why were they now sterile? and what must be done to restore their condition? To answer these questions they must leave art, and betake themselves to science. Let them put the questions in their own case. The practice in one county might be admirably adapted for its cultivation; but if the soil were heavy, and an ignorant man were to come from another county with a light soil, he might laugh at the expensive mode of cultivation of the former as contrasted with his own, and in case of a change of residence, the cultivator of the heavy soil might find his former expense useless in his new locality. Why, then, would not the one system do on both soils? The answer could only be obtained by going to the temple of science, and consulting the oracle within. Did they not observe the alteration in all respects that had been introduced into the cultivation of land? All this was but the application of the knowledge which science had acquired by investigation in different localities. Science could not do much alone, nor art; but both united, they could do a great deal. The first thing to be understood was the nature of the constituents found in the soils. These were silica, soda, alumina, sulphuric acid, lime, phosphoric acid, magnesia, cholorine, oxides of iron, fluorine, potash, manganese. The formation of arable land might be traced to causes in operation before the world was peopled by either plants or animals. He drew attention to this without at all diverging from his subject, because he should be able to prove that all the operations on a farm were but imitations of the means by which nature produced similar ends thousands of years ago. He would illustrate his meaning by reference to the formation and destruction of rocks by nature. The primitive rocks consisted of granite, which was composed of feldt-spar, quartz, and mica. The composition of these minerals at once showed that they contained every ingredient of the soil. The learned lecturer proceeded to prove this, and so describe in scientific phraseology the breaking up of these rocks by the operation of the carbonic acid in the atmosphere into earth analogous to to our light sandy soils. There were three classes of soils—the aluminous, the argilaceous, and the calcarous. The preceding observations applied chiefly to the former. With this the case was different; for lime, or cabonate of lime, must be held in solution by the excess of carbonic acid. There was, therefore, no reason to expect that large deposits of limestone were then formed. Indeed, the infrequency of limestone in primitive rocks was remarkable, and had led Mr. M'Culloch to believe that animals might have caused the formation of all the limestones in existence. He was obliged to refuse his assent to the theory. How then would he explain the formation of these bodies? He believed that it occurred only where there was distinct evidence of organic life. In mountain limestone there were discovered large portions of marine testacea, but there were also large portions of vegetable remains; and, at all events, there must have been vegetables in proportion to the number of animals that were to subsist upon them. Marine vegetables subsisted on carbonic acid and ammonia, just as terrestrial plants did. The carbonate of lime or limestone being in solution, the plants became impregnated, and the consequence was that limestone was deposited. The learned lecturer then adverted to the infusora, and described them as performing in water the functions of the fungi on land, although standing at the opposite extremities of their respective genus. But, provident as nature was, she had much more to perform before the soil thus formed was suited for the growth of terrestrial plants. By various causes the surface of the soil became exposed, and thus nature performed as it were the operation of the subsoil plough. He would now proceed to show why they thus ransacked the past world to point out the means of improving the cultivation of the new. It was necessary that our vegetables should find in the soil a certain amount of mineral matter to enable them to take up their proper form as plants, and the experience of all ages taught that to supply this should be one of the first operations of the farmer. We were told that when Cato asked what was the best mode of cultivation, he was told—to plough; when he asked what was the second best, the answer was still to plough; and when he asked what was the third best, he was told to drain. Now, all we did when we ploughed was to follow the operation of nature by pulverising the soil. By surface ploughing we exhausted this soil of some of its ingredients, and we ought then to threw up some of the va-