The following report of a Lecture delivered by Dr. MADDEN, at the late meeting at Edinburgh of the Highland and Agricultural Society of Scotland, we copy from the reported proceedings on that occasion, which are highly interesting:—

"At three o'clock, Dr. Henry R. Madden, Penicuik, proceeded, in presence of a numerous audience, assembled within the Society's museum, George the Fourth's Bridge, to deliver a lecture 'On the condition of the soil at seed-time, as influencing the future prospects of the crop.' Lord Dunfermline occupied the chair.

"Dr. MADDEN began by adverting to an error which to some extent prevailed, that before the farmer could apply chemical discoveries to the purposes of his own pursuit, he ought to be in truth a chemist. It was as absurd to say so as it would be to say that no one could follow medical advice unless he were a physician, or that no one could make use of a watch unless he knew all its mechanism. He proposed simply to give an account of the different variety of soils at the time of putting the seed into the ground; and in the course of his observations he trusted he would be able to show that theory and practice were not so diverse as they were generally supposed to be.—The science of all arts was discovered by looking into the practical effects. The first thing that occurred to the seed after sowing was germination—to which process, air, moisture, and a certain degree of warmth were necessary. The soil was the vehicle through which these were communicated to the seed. With respect to the mechanical properties of the soil, it consisted of particles of various shapes and sizes, and these were generally porous, though some of the smallest assumed a solid form. The fine dust of soil is found by the microscope to consist of broken down vegetable matter, and he had endeavoured to give a representation of the character of those particles in several diagrams, (to which Dr. Madden then referred in detail, to illustrate the variety in soils). There were two distinct kinds of pores; first, those which ran between the different particles, and secondly, those which existed in the particles themselves. The diagrams represented soil when the pores were supplied with air alone, where the pores were superabundantly supplied with water, and with water alone, and when the pores in the particles were supplied with water while the other pores admitted air. The last was the proper state of the soil. Another diagram represented soil in which the interstitual pores were obliterated; this was in fact a clod, and of no more use for germination than a stone. The first state of too great dryness was very rare in this country, occurring in coarse sand, and the mode of detaining the moisture adopted in some places was to leave the stones on the surface, so as to prevent the evaporation of water. In the second instance, the water was absorbed by the pores of the particles passing through the canals, and the soil remained damp or moist, but was not wet. If, however, from the occurrence of spring water too much water for the pores was furnished, the canals must of necessity be filled. This was the condition of undrained soil, and the whole process of germination and vegetation were materially interfered with. Hence the necessity for thorough-draining. The first effect of this state of soil was to exclude the air, which was essential to germination; the second was considerably to reduce the temperature of the soil in summer to the extent sometimes of six and a half degrees, which was equal to an elevation of 1,950 feet above the sea—so that supposing two fields on the same level, one of which was in a proper state, and the other was undrained, the difference was the same as between a field near the level of the sea and a field as lofty as the highest of the Pentland Hills. But while the temperature was lowered during summer in undrained soil, it was rendered unnaturally high in winter; for while the change of temperature amounted to between thirty and forty degrees in the course of the year, the temperature of soil saturated with water ranged only between some 6 or 7 degrees; and thus the healthful influence of a variation in the temperature was lost. Dr. Madden then proceeded to show, in like manner, the necessity of attending to the pulverization of the soil, so as to prevent it from getting clodded, and the advantage of drill-sowing. He adverted to the benefits arising from attention to such points as those he had brought under the notice of the meeting, as neglect of the state of the soil, carelessness in sowing, and other circumstances within the control of the farmer to some extent at least, were calculated to affect the seed in its various stages of germination, growth, flowering, and ripening. If any thing caused the plant to flower too early, the produce was not so large as it would otherwise be: and so whatever tended to interfere with the due periods fixed by nature for the healthy performances of these various processes should be as carefully guarded against as possible. After some remarks on the necessity for calling in the aid of practical knowledge to correct the hasty deductions of scientific inquiries, he adverted in conclusion, to the great utility of applying the results of scientific research in the cautious manner which he indicated to the improvement of agriculture—an art which was at once the most important, and the most extensively cultivated.

"After some remarks by Mr. Aitchison, of Drummore, and Mr. Milne, expressing their warm approbation of the lecture, the meeting separated."

PROTECTION OF PLANTS FROM FROST.—Now that the protection of plants from frost is a first object with all possessors of gardens, we wish to direct attention to one fact which is seldom considered. There are many trees which will resist the effects of our frosts without any covering to their heads, provided the roots and stems are carefully guarded and kept dry. Among this number is the Magnolia grandiflora.—Formerly there were trees of this species in Paris—and they may possibly still exist—whose only protection in the winter was a heap of dry straw piled over the roots, so as entirely to cover them, and thatched to the height of 5 or 6 feet, so that the head of the trees formed the apex of a cone, the body of which was straw. By this precaution, the earth is unable to freeze, and the fluids in the interior of the tree are maintained at a temperature approaching to that of the earth. While, on the other hand, if the earth is frozen hard, the fluids in the roots are frozen also, and they thus tend to lower the temperature of the fluids and the branches.—But this is probably not the only reason why tender trees are preserved by this kind of protection. It is to be observed, that the destructive effects of frost are in proportion to the succulence of the parts on which it acts; and it may be, that the contracting influence of cold gradually forces the fluids out of the unprotected branches into those lower parts which are guarded from the action of cold. Then the branches being *pro tanto* emptied of fluid, or, we may say, dried, are thus deprived of a part of their susceptibility to cold. Those who are disposed to try the effect of protecting plants by thatching or burying their roots and stems must, however, bear in mind the necessity of the substance employed being dry, and applied in such quantity as to keep the earth really protected from frost. All the tender roses may probably be preserved in this way.—*Selected.*

FLAX.—It is considered the best management of flax to be dried after pulling, and safely kept under cover until the following year before it is steeped, it is then steeped in the following manner in Flanders:—

"The flax, before going into steep, is neatly bound in large bundles, with a strap round each end, and one in the middle, care being taken to have the ends very even. It is then laid nearly upright in the water, after the manner in which it grew, each row inclining against the other. It is then covered with straw and mud—(stones would do better, but they are not easily had here).—It remains in this way, until it has sufficient water, which is known by the fibre turning a little glutinous, and leaving the straw freely, when broken about the middle. It is, immediately that it is ready, taken up, and put into binns, or on its end, to drain for two days: afterwards spread out on the grass—for how long I cannot say, as its stay there will be retarded or accelerated by the good or bad state of the weather."

THE USE OF SNUFF.—With that he thrust his hand into one of the large flaps of his waistcoat, drew out a ponderous gold box, extracted enough from it of a black looking powder to have charged a musket, and crammed the dust up his left nostril. "May I ask what that stuff is?" said the Chevalier; "I have seen a great number of persons stopping their noses with something of the same kind, as if this country were famous for bad smells, and they wanted to keep them out." "I will tell you what it is, Chevalier," said Mr. Longshanks; "it is what we call snuff, the power of a poisonous weed, which by this process is rendered very serviceable to our frailties. I have heard that you think us all mad, but that is a mistake; we are only all foolish. This snuff gives a man something to do when he has nothing; spares many an empty head the trouble of making an answer; gives politicians, hypocrites, and knaves time to compound a lie when they have not one ready; furnishes a wise look for a fool's face; enables men by a grimace to cover an emotion, and prevents people leading you by the nose, for fear of dirting their fingers.—*The Commissioner.*

THE ARRANGEMENT OF THE FARM—FENCES—GATES—AND GARDEN.

Arrange your house in order due,
Your garden, gates, and fences too;
Neglect's offensive, and what's worse,
It helps to make an empty purse.

KEEPING UP OF APPEARANCE.—Dr. Franklin says—"The eyes of other people are the eyes that ruin us. If all but myself were blind, I should neither want a fine house nor fine furniture."