Action of Plaster as a Fertilizer.

Perhaps no subject connected with agriculture has given rise to more speculation than the action of plaster or gypsum on vegetation. Why it should produce such striking results at one time, why it is apparently useless at others, or why it should be beneficial at all, have been problems which the agricultural chemists have found difficult of solution. The columns of some of our contemporaries have recently been occupied with communications upon this subject, which served to show a lack of chemical knowledge on the part of the writers, without increasing that of the readers. In cases like this, one direct experiment is worth a host of speculations, and M Decherain, of France, has, by his labours in this direction, given us some light upon this much-vexed subject. These experiments indicate that the use of plaster is mainly to liberate the potash contained in the mineral constituents of the soil. In the disintegrated rocks of which the soil is composed potash exists in an insoluble combination. The plaster is sulphate of lime, which is soluble, and when this, in the moist state, is in contact with minerals containing potash in an insoluble form, the lime and potash change places. The potash is liberated, while the lime of the plaster takes its place in the insoluble mineral. This change is effected very rapidly, as it was shown that soil which contained only a trace of potash, gave, twelve hours after the application of plaster, an appreciable amount of that substance. Another effect of plaster has been suggested by Professor S. W. Johnson in his lecture at the Smithsonian Institute. It has been found by experiment that the presence of certain substances, plaster among the rest, in the juices of a plant, have a marked tendency to prevent evaporation by the leaves. It is of course necessary that a certain amount of the liquid contents of the plant should pass off in this way, but in a very dry time the evaporation may be more rapid than the processes of vegetation demand The use of plaster upon the soil may enable a crop to withstand a drought much better than upon unplastered land *American Agriculturist.*

Weights of Produce.

The following are the standard weights fixed by Statute in Canada as equal to a bushel of the several kinds of farm produce :—

Corn Meal	50	Dried Apples	22
Onions	60	Blue Grass Seed	14
Castor Beans	40	Hemp Seed	44
Beans	60	Flax Seed	50
Peas	60	Timothy seed	48
Beets	60	Clover Seed	60
Parsnips	60	Buckwheat	48
Carrots	60	Barley	48
Turnips	60	Oats	34
Potatoes	60	Corn	56
Salt	56	Rye	56
Dried Peaches	33	Wheat	60

"One Year's Seeding will give Seven Years' Weeding."—It has been calculated that one plant of sown thistle produces over *eleven thousand seeds.* Thus one plant gives seed enough to stock 2¼ acres with plants three feet apart. Down with the thistles Do not let one go to seed on the farm, or between the fences, or on the highways.

Measuring Operations and Results.—The farmer only who measures the result of his experiment, can know with any certainty what course is most profitable. One young farmer, by the use of a weighing machine for weighing all his cattle weekly while feeding them, "saved hundreds of dollars" by two years of its use All the fields of a farm should be measured and marked on a map, by which the acreable product of all crops may be easily ascertained. The greatest deficiency among good farmers generally, was found to be a want of accurate accounts, both with their crops, and for the purpose of ascertaining their profits.—*Country Gentleman.*

Grass Seed for the Lawn or Yard.—A mixture of seeds thickly sown is best. A very good "lawn grass seed" for general use is prepared by the seedsman as follows. 1 lb. white clover seed ; 2 lbs. sweet vernal grass ; 8 lbs. orchard grass ; 14 lbs. blue-grass ; 20 lbs ray grass ; and 80 lbs. red-top, or in these proportions. These varieties can be procured at most seed stores, or such as can be got may be used Any two or three varieties of these grasses sown *thickly*, and kept mowed or shaved down, will form a thick mat. One advantage of using a large variety is that you are pretty sure to get two or more kinds peculiarly adapted to the particular soil.

Liming Land.—This was the subject of discussion before a Scotch Farmers' Club, when one of the leading speakers said that "his experience taught him to be no advocate of liming land heavily at the outset. Where land was requiring lime, he gave first a small dose, and then lime every five years ; and he thought this kept the land in better heart than by giving it a larger quantity at once." He subsequently remarked : "Some people spoke of giving the lime as manure ; but if they did not give dung at the same time, it would not do much good. The great thing was to give plenty of dung and there was not much fear of over-liming. Many a time land was said to be overlimed, he believed, when poverty was the ailment ; and if they gave lime along with plenty of dung, there was no fear of getting good crops of all kinds."

Swamp Land.—"A thing of beauty is a joy forever" This is true, we suppose of everything, without reference to its past history. But there is a special beauty about an object, redeemed from positive waste and ugliness, and made to minister to human wants. There is a bit of swamp land in view from our window, where three years ago we could not walk without wet feet, and which, from the creation down, had only borne brush and sour grasses. It is now thickly covered with a beautiful sod of herds-grass and white clover. It has been drained, and the surface is now as dry as upland. Last year the acre and a half cut three tons of good hay, and this season it has pastured two cows from June to September, giving them a full flow of milk, and the feed is still good. The pasturing is worth at least twenty dollars. Muck enough has been taken from the ditches to pay for the whole cost of reclaiming. Three years ago it was not worth thirty dollars. It is now worth three hundred, and will pay the interest on that sum while grass grows and water runs.—*Colonial Farmer.*

Stirring the Soil—Cultivators vs. Ploughs.—The gradual extension of steam power in the cultivation of the soil in England, has tended to produce sounder views as to the advantages which result from stirring the soil by cultivators or grubbers. At one time it was deemed essential for the luxuriant growth of a grain or bulbous crop, that the soil should be inverted. This is now proved not to be necessary ; on the contrary it has been shown that on retentive soils the crops produced on lands which have been stirred but not inverted, are more abundant than where the soil has been turned over by the plough. An intelligent correspondent residing in Buckingham, who has the best opportunities of ascertaining the results produced by the use of cultivators compared with ploughs, draws attention to this fact in his report for that county. It is highly probable that, as the steam engine is more generally brought into requisition in cultivating the soil, that the implement most commonly used will be a cultivator or grubber. Those farmers who are preparing land for wheat—whether the previous crop had been beans, potatoes or turnips—could undertake experiments to ascertain the difference of produce from one part of a field stirred by a cultivator or grubber, compared with that produced on the other portion of the field which has been stirred by the plough. The question is one of such great importance, that it is to be hoped several farmers will conduct experiments, not only in the preparing of land for wheat, but for other grain crops, and report the results.—*North British Agriculturist.*

The Apiary.

Great progress has been made in the science and art of bee-keeping during the past ten or fifteen years. More than sixty years ago, Francis Huber, of Geneva, Switzerland, published a work on this subject, in which are embodied the results of a long continued series of observations, but many of his views were regarded as fanciful, and only quite lately have they been practically tested by intelligent experimenters, so as to show their general and substantial correctness. The history of Huber is a most instructive one, proving as it does, that great things may be accomplished in spite of almost insurmountable difficulties, and that the discovery of truth, though ridiculed at first, will, in the end, vindicate itself This distinguished naturalist became blind in early manhood, but aided by his wife, and a faithful servant, he pursued his investigations with unflagging zeal, and produced a work, which now commands the mingled wonder and admiration of all who are qualified to judge of its merits, and will send the name of its gifted author down to posterity with ever increasing honour. There are many who during the past few years have distinguished themselves in this branch of natural history and rural economy. Prominent among them are two clergymen, one a Prussian named Dzierzon, (pronounced Tsurtsone), and the other an American named Langstroth, who almost simultaneously discovered the "movable-comb" principle of constructing bee-hives. This method gives perfect command of these insect workers, and enables the ordinary bee-keeper to inspect their movements, ascertain their condition, and control their operations to an extent that is perfectly marvellous. An entire revolution in bee culture may be said to have taken place as the result of modern discoveries and improvements, and there seems now no good reason why every civilised country on earth should not become a land flowing with milk and honey." There are several recent manuals of bee-keeping, by the study of which beginners may profit greatly. Probably the two best are "Quinby's Mysteries of Bee-keeping," and "Langstroth on the Honey Bee." The latter work contains a short but interesting chapter, entitled, "The Honey-Bee capable of being tamed," and we cannot better conclude this article than by briefly stating the three principles set forth by the author, by the knowledge and application of which, all serious risk of being stung may be avoided

"First—*A honey-bee when filled with honey, never volunteers an attack, but acts solely on the defensive,*"

Bees when intending to swarm always fill their honey bags to their utmost capacity. They are, therefore, in their most peaceable mood at that time, and allow themselves to be treated with considerable familiarity. Like Englishmen, they have a propensity to be good-natured after a hearty meal

"Secondly—*Bees cannot under any circumstances, resist the temptation to fill themselves with liquid sweets.*"

Hence by furnishing them a treat of sweet things when it is desirable to perform any operation among them, it is quite safe to proceed. It will not do, however, to handle them roughly. They allow no rude liberties. If on opening a hive the exposed bees are gently sprinkled with water sweetened with sugar, they will feed with great eagerness, and behave very quietly. Bees thus managed, are glad to get a visit, as they always expect to receive an acceptable peace-offering.

"Thirdly—*Bees, when frightened, immediately begin to fill themselves with honey from their combs,*"

By the use of a little tobacco-smoke, or smoke from decayed wood, (sometimes called touch-wood,) a slight panic can be created among them which will secure thorough submission. As soon as the smoke is blown among them, they retreat before it, and as if afraid their treasures are about to be stolen from them, they begin to fill their honey-bags, and prepare for the worst. Keeping these facts in view, and provided with a bee-hat and india-rubber gloves, the Apiarian can manage his little subjects without cause of fear.

Ventilation in Bee Hives.—The *Ohio Farmer* says that bees in winter do not apparently suffer from cold even when many degrees below the freezing point. Their great enemy is damp. I have known hives from which the bottom board had fallen and which were fully exposed to the air, winter well, while others carefully tended lost thousands of bees, and yet both had sufficient stores. Hives made of thin boards are bad quarters for bees, unless well ventilated, and for the simple reason that when such are exposed to the weather, they part rapidly with their warmth in cold weather, and unless carried off by currents of air, the moisture from the bees condenses on the inside and then congeals, and this process will go on until the comb next the sides is involved, and the bees are constantly huddled together in an ice house. When combs are thus frozen or kept steadily exposed to an atmosphere of moisture for some time, they will mould whenever the weather becomes warm. It often happens that the principal portion of the honey is laid up in the outer combs, and if these are frozen, the bees cannot get their food and may thus starve with food abundant, but locked up by frost.