FARM AND FIELD.

SOURCE OF NITROGEN FOR PLANTS.

A correspondent of the *Country Gentleman*, discussing the above subject, thinks the soil attracts nitrogen from the atmosphere, and that to do this most effectually, it should be "fined" and packed. We incline to think it is not the soil, but the plants growing in it, that absorb fertilizing gases from the atmosphere. "Fining" and packing the soil are favourable to the growth of plants, but it is questionable if the soil attracts much beside moisture from the air. This writer asks, "Does not the rain sometimes bring with it large quantities of ammonia"? It always contains a small percentage of ammonia, and snow a larger; but there is reason to fear that the ammonia evaporates, leaving only the moisture, unless there be plant leaves to feed on it. It is by being incorporated into the texture of plants, which decay, and give their elements to the soil, that the atmosphere contributes its stores of fertilizing material to our fields. Clover, peas, beans, and Indian corn subsist largely from the atmosphere, and these crops if ploughed under, or allowed to decay on the ground, are valuable manures. Our belief is that not the naked soil, however "fined" and packed, but a growing crop of some kind, is nature's police for arresting and fixing the fertilizers afloat in the air.

MISTAKES ABOUT GRASS.

There is hardly a field crop we grow that is worse managed than grass. When land is so impoverished that it will no longer pay to raise grain on it, we say, "it is time to seed down." We get a good catch, but the soil is too poor to admit of rapid growth; hence heat and drought swoop down on the young plants, and they die out. A rich surface, to give the grass a quick start, is one of the most important points to be secured in seeding down.

Land that is too much exhausted to yield one good crop, is expected to produce two at once. We seed down with grain, usually wheat or barley, and if both grain and grass make a miserable growth, we are disappointed and complain. Yet, in the very nature of things, no other result could reasonably be anticipated. Land should be seeded down when in good heart, which, with a proper rotation and skilful management, it will always be. There should be no ups and downs in the matter of fertility, but a steady maintenance of vigour in the soil.

After successive years of mowing or pasturing without manure, we are inconsiderate enough still to look for a fair yield of grass. If a ton or two tons of hay per acre are taken off a field, ought we not to renew the resources of the soil in some way? But even in this enlightened age, top-dressing grass land is looked upon by many as a species of fancy farming. It may do for city lawns, but who considers it necessary for a meadow or pasture field? We wonder why grass "runs out" in this country, when in Britain vast areas of land remain unbroken for half a century or more. The old country farmer treats his permanent grass fields just as he does his grain fields, manuring from time to time, and so maintaining their fertility. If he did not pursue this method, grass land would fail in Britain just as it does here. Every crop, grass included, extracts a certain proportion of fertility from the soil, and it must be given back in some shape, or impoverishment and short crops will inevitably follow.

Prof. Brown recently made the statement that if every farm in Ontario had a well-managed five-acre pasture field, the gain would be not less than $5,000,000 annually. It would seem a perfectly feasible thing that every farm in this province should have such a field, but a rather humiliating revelation would be made, if we had a faithful report as to how many,—rather how few,—of our farms have such a field. It would be a long step in the way of agricultural improvement if every farmer in the land would resolve to realize this supposition.

THE FAILURE OF SOIL ANALYSIS.

Twenty-five years ago farmers were advised to have the soil of their fields analyzed, in order to ascertain what crops could be grown on them to the greatest profit. If a plot of land was quite unproductive, an analysis was made of it to find out what kind of fertilizers to apply, in order to produce the best effects. The case of a barren garden was carefully diagnosed by a council of chemists, who afterwards recommended a course of treatment. Artemus Ward declared that some persons in his section of the country would not consent to have a post-hole dug without first having the gravel examined, to find out if it contained anything dangerous. Some cautious men would not make an offer for a farm till they saw the result of a quantitative analysis of the various soils it contained. They required this before they would consent to examine the abstract of title. Many chemists did a thriving business in analyzing soils and recommending special fertilizers. Some thought it was as important to analyze the soil of a farm before commencing to work it as it was to assay the ore of an undeveloped mine previous to beginning operations. Laboratories for analyzing soils were fitted up in various institutions, and on some farms whose owners were able to conduct chemical investigations. The analysis of soils is still conducted for scientific purposes, but for practical purposes it is rarely resorted to. Chemists now attach very little importance to soil analysis. The cost of scientific investigations is great, while practical tests of the ability of a piece of land to produce certain crops are easily and cheaply made.—*Chicago Times.*

FARMERS' CLUB AT SYRACUSE.

The Farmers' Club of Onondaga county, N. Y., which holds its weekly sessions at 10 a. m. each Saturday, is widely known for the intelligence and energy which have marked its proceedings. Having an opportunity for attending on a recent occasion, we are enabled to give a few brief memoranda of the discussions. About forty members were present at the time; we were informed that the attendance sometimes numbered as many as two hundred.

The principal subject for the day was the discussion of the question whether the soils of the county were wearing out. Mr. Edwards took the affirmative, and alluded to the fact that new lands needing nothing at first, required afterwards the continued addition of fertilizers to maintain their character. He said that all things were wearing out, that there was no standing still, and most of his remarks were of a general character, and not specially applicable to Onondaga county. Continents were formed by the wearing and disintegration of rocks, and the soils in turn were worn out by cultivation. In new countries manure was but little appreciated—he had seen the practice in Kansas of dumping manure into streams to get rid of it, but after awhile all would be needed to supply the waste.

George Geddes had no sympathy with those newspaper writers who endeavoured to make out that we were all going to the poor-house. He thought the members of the club then present were hardly a specimen of such destitution. He quoted in detail from the census reports, showing the increasing average crops per acre. He recommended the adoption of a new system of returns requiring assessors to make yearly reports of the crops, and at present, in the absence of such returns, superficial writers could more easily make out deterioration in the products of farms.

L. T. Hawley reported his experience on a field of ten acres, the first corn crop from which, after clearing out the stumps, bushes and other rubbish, was only three bushels per acre. Ploughing deeper and giving continually good cultivation, the hay gradually increased, and the land now produces good crops. He thought much of the improvement came from gradually ploughing deeper and turning up the natural elements of fertility. W. W. Newman had observed that upland farms usually produced more the second decade than the first, and the third more than the second, and he thought the tenth decade would show a still greater improvement. New land produced straw; longer cultivated, it gave grain. He thought the farms of Onondaga county were gradually increasing in their average products, which is owing, at least in part, to the plough bringing up and mixing fertilizing elements. George Geddes, in answer to an inquiry, remarked that a portion of his farm had not received any barn manure for seventy years, and the only fertilizers were clover and plaster. This land had a bad reputation at first, but when the late J. Stanton Gould saw the grass growing on it some years ago, he said it was the biggest timothy he had ever seen.

Dr. Boynton spoke at some length, explaining the chemical operation of fertilizers. He had injured his pear trees by too heavy an application of stable manure. He had successfully applied ground bone and plaster to his young orchard of a thousand pear trees, and last year he sold $300 worth of fruit from it, besides large numbers which were lost by premature decay.

Mr. Scott, of Clay, maintained that clover, plaster and good manure were quite sufficient to keep up the fertility of land, without resorting to the purchase of commercial fertilizers, and he urged the importance of saving all the manure of animals, liquid as well as solid, and preventing its washing away; and he particularly recommended winter spreading, and owners need not fear its washing away, as the same thawing that produced the water would thaw the surface of the soil and cause it to absorb the liquid. Well-conducted, diversified agriculture, with suitable rotation, would not carry off the mineral elements. Superphosphate, at $35 per ton, he thought too high in price for farmers to apply largely. He had found an excellent preparation for wheat to consist of a crop of peas, fed to swine on the ground without gathering; and he recommended sheep husbandry as an important part of diversified farming.

The questions announced for the next meeting were: Whether clover was most valuable when ploughed in, or first fed to animals and the manure applied; and whether hay or cornstalks were most profitable as food for cattle; on which subjects special committees were appointed to open the discussions.—*Country Gentleman.*

I have often thought farmers made a great mistake in not salting their cattle more frequently in winter, particularly in mild weather. Perhaps the best plan is to brine good bright straw, say twice a week. I find cattle eat it greedily. They require about so much salt to keep them in good health. When the weather is extremely cold perhaps it would be best to give less salt, as they naturally would drink too much cold water. I will express the opinion that cattle well salted, winter and summer, would be less likely to get lousy, provided they have enough to eat and good care also. If I am wrong, I wish to be set right. I would like to hear from some of your readers on this salting in cold weather.—C. W. K.