Independent of this plan of drainage, where swamps or damp places occur in hollows with no natural outlet, or where springs appear too far from any drain to warrant the expense of conveying them thereto, I have been very successful in sinking them out of sight by digging one or more perpendicular drains down to gravel or sand and building up the hole in the form of a small well, filling in the opening with small stones and covering the top a foot underground with inverted sods well rammed down.

As to what materials should be used in the construction of the mains and laterals much depends upon the cost of the different materials required and the nature of the soil through which they pass. Where stones of the proper shape are close at hand and have to be removed and the drainage operations not very extensive, I have found that making the mains of stone, with a six inch square run for the water, to work very satisfactory, and where small round or broken stones are to be had for the picking up, I would use them for the laterals and even side mains; but I have found from experience that the proper filling in of these stone drains is of as much importance as their construction. Inverted sods, straw or shavings should be thoroughly packed not only on top, but in the case of flat stone drains also at the sides, every layer of filling well tramped down, and the finished surface left rounded up to allow for settling and to prevent the surface water from washing down into the drain.

Where stones are not at hand and tiles difficult to procure, where but a limited amount of draining has to be done, or where the land is too soft to properly hold the tile in position, I would unhesitatingly use wood. Hemlock boards, 1 inch thick and 12 feet long, ripped up into strips of 2, 3, 4 and 5 inches, would leave no waste, and are quickly made into square tubes, costing when complete something less per foot than pipe tiles and collars, and in inexperienced hands far more easily laid; for the small drains use the 2-inch strips for sides and the 4-inch for tops and bottoms; for larger ones use 3-inch sides and for the mains 3-inch sides and 5-inch tops and bottoms. The tops should be lightly nailed down (to facilitate opening should it at any time be required), and before doing so single saw cuts made across both sides half an inch deep and 3 feet apart will admit all the water required and prevent any sediment from forcing its way in. Where, however, good hard-baked tiles can be procured at reasonable prices, where stones are scarce and when any large extent of land is to be drained, I should certainly give the preference to them, using 1¼-inch pipe tiles for laterals, discharging into 2¼-inch, both with collars, from which 3½-inch, without collars, will take a full drainage from an ordinary 20-acre field into the outfall or open drain, and towards this system of underdraining I feel we are advancing year by year as the benefits derived from it are more and more appreciated. At present the trouble and expense of importing tiles deter many from using them who otherwise would, but I believe that were tile-makers to begin the manufacture of tiles either in connection with the making of brick or by themselves that soon such a demand would be created for them that the enterprise would be made a paying and profitable one. To such as have lands underdrained I would say, begin at once by straightening your watercourses and completing main drains through your low lands and swamps, adding side drains year by year as time and opportunities present themselves, and when once a good beginning has been made there is little doubt but that the work will be most cheerfully pushed on to completion as the practical benefits prove the wisdom of the undertaking.

A Cheap Country Paint

A method of painting farm buildings and country houses, while by no means new, is yet so little known and so deserving of wider application as to warrant a description. The paint has but two parts, both cheap materials, being water-lime or hydraulic cement and skimmed milk. The cement is placed in a bucket, and the skim-milk, sweet, is gradually added, stirring constantly, until just about the consistency of good cream. The stirring must be thoroughly done to have an even flow, and if too thin, the mixture will run on the building and look streaked. The proportions cannot be exactly stated, but a gallon of milk requires a full quart of cement and sometimes a little more. This is a convenient quantity to mix at a time, for one person to use. If too much is prepared the cement will settle and harden before all is used. A flat paint brush, about four inches wide, is the best implement to use with this mixture. Lay it on exactly as with oil paint It can be applied to wood-work, old or new, and to brick and stone. When dry, the color is a light, creamy brown, or what some would call a yellowish stone color. Neither expression describes it well, but it is a very good color for a country building. A pigment-like ochre may be added to change the color, but it is very difficult to do the mixing so thoroughly as to give an even tint. If attempted, the cement and coloring matter, in carefully weighed proportions, should be first run through a paint-mill. This skim-milk paint, well mixed, without added color, has a good body, gives a smooth, satisfactory finish on either wood or stone, and wears admirably.

A friend of mine used this paint for a set of farm buildings, which have since passed through three winters, and are now looking fresh and well. One building was new and the covering boards imperfectly seasoned; others had been white-washed, some repeatedly for more than half a century. All appear equally well. The older buildings were prepared by scraping off the loose and scaly white-wash, the scraper being a curry-comb; it was not much work to do this. The expense of this piece of painting was surprisingly slight. A laborer at $1.50 a day did the work, and he covered a two-story, twelve-room house in six working days. He laid on from three to four gallons a day, the whole quantity used on this building being less than a bushel of cement, costing fifty cents, and twenty-two gallons of skim-milk, worth less than a dollar on the farm. The whole cost of satisfactorily painting a good-sized house, brush included, was less than $12.

This painting mixture, so easily and cheaply prepared, was described in recipe books years ago, but a knowledge of it was revived by Gen. Le Duc while he was U. S. Commissioner of Agriculture. He mentioned an instance of a country house within his personal knowledge, the body of which was covered with skim-milk and cement, and the trimmings with lead and oil paint, forty-five years before he described it; during this period the trimming paint had been renewed several times, but the cheap body color remained well preserved.—[H. E. Alvord, in American Cultivator.

Success with Clover.

An analysis of clover roots dug from a square rod of ground was made at Cornell University a few years ago, from which it was estimated that an acre of such roots contained nitrogen, potash, and phosphoric acid, worth $18.83 at market prices. This amount is about equal to what is found in 800 lbs. of high-grade ammoniated phosphate, and according to the published opinion of Prof. Roberts, it was mostly recovered from the subsoil through the aid of the clover, and thus was made available for the use of the wheat crop that followed.

This is scientific corroboration of what many careful observers believe to be true—that the growing of a clover crop does not diminish the available plant food in the soil, therefore a clover sod is an excellent preparation for a corn or potato crop.

Very few farmers have made that extensive use of clover that the facts above stated would warrant, and perhaps a still less number have comprehended its great value in agriculture. Its roots will penetrate the subsoil and recover plant food otherwise lost When cut at the right time and properly cured, it makes the best hay known for butter cows. The manure from cows kept on clover is of far more value than when timothy is fed.

A retired farmer who has made a small fortune in dairy farming, says that he credits the clover plant with $5,000 of his accumulations. His rule for seeding during many years was 14 lbs of clover and 14 lbs. of timothy to the acre. The growing clover was plastered at the rate of two bushels to the acre. He used to the amount of ten tons of plaster in a year. No wonder that he was successful. Another wealthy farmer, an excellent manager of great experience, said to me that whatever success he had attained in farming was to be attributed directly to clover. It is a singular fact that in the immediate neighborhood of such intelligent, successful farmers, may be found those in great numbers who never use more than two or three pounds of clover seed to the acre, and who do not to this day succeed in curing clover hay so that their cows will eat it with a relish.

A peck of clover and a peck of timothy sown to the acre will secure a good stand on land in fair condition. Of course a much less quantity would do if it all grew, but with a thin seeding weeds of various kinds will fill the vacant space and inflict a positive damage by their worthless growth. If the large clover is sown, it will not lose in value by over-ripeness as readily as the medium, but it is a good practice to sow one quart of the small kind to two of the large, as this will secure a quick start of aftergrowth for pasture, and also will keep the ground fully occupied by useful plants. An acre can be heavily seeded at an expense of $2, and he who tries to save money by scrimping in clover and timothy seed does not practice true economy.

Clover should be cut as soon as it is fairly in blossom. A few days' delay, especially with the medium variety, will greatly lessen its value. Begin cutting as soon as the dew is off and all that can be cut before 2 o'clock may be cocked the same day. As soon as it can be raked, and while quite heavy and green, it can be cocked with safety. If good hay weather follows, it may stand two days in the cock and be drawn the third day. It is sometimes necessary to turn