

IN FARM AND GARDEN

Of Interest to Cultivators of Small Farms.

SOME SUGGESTIONS ON BARNS.

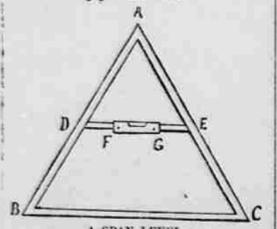
Practical Points in Drainage—How to Find and Keep Trade—Experiment Stations.

W. J. Chamberlain, of the Iowa Agricultural college, contributes to Country Gentleman some practical hints on drainage, which are of general interest. First, he tells that the mains ought to follow the natural depressions where the water runs off upon the surface in wet times, of course straightening the crooks somewhat. If there is a regular slope like the roof of a house, only not so steep, the mains should take the place of the eaves, troughs, and the laterals, if any, should run straight down the slope as nearly as may be. If the fall is very slight, it may need a field leveling instrument to lay out the system. But usually a very wet time is the best to locate drains. A furrow plowed then by the eye will work its own grade or show it.

If you have not a ditching machine use a heavy working plow to throw out the first eight or ten inches, drive straight. Begin the spade digging at the outlet and work along up the mains and laterals. The water will show the level. Permit no dips or depressions. Dig as narrow and true as possible to the required depth, and groove the bottom of the ditch with a bottoming scoop of size adapted to the tiles used. The grade may be nearly established with the plow plowing deeper through knolls and shallow through depressions, then dig two or three depths of the spade according to depth required, keeping the spade at the same angle all the time, and thrusting it full depth each time. If there is no water in the soil to show level, the surest way is to draw some into the field, and when your eye or the span level says your groove is cut straight and true for a hundred feet or more, turn in just enough water at the upper end to test it. If it stands anywhere in long puddles, you must cut down the high portions until no puddles remain.

Mr. Chamberlain makes the span level thus: Take three pieces of 1 by 2 inch pine batten 8 1/2 feet long, halve them together with screws firmly at the ends in the form of an equilateral triangle. Then half way up from one side, b, c, and exactly parallel to it, screw on a fourth piece d (see figure). To the side of the cross piece, d, e screw a common 75 cent spirit level, f, g, so that when b, c stands on a level floor the air bubble shall show level, and its middle be the middle of d, e. Change the triangle end for end on the floor, to be sure your spirit level is exactly parallel with the bottom of b, c. Then if you want to graduate it raise b 1/4 inch at a time, leaving c resting on the floor, and mark the brass of the spirit level for each quarter and half inch up to two or three inches. Then raise c in the same way and graduate the other side.

Before the groove is cut in the bottom of the ditch this span level may be applied all along, and show the exact fall per rod. Then the groove cutter can take out lumps, and the level test its work. B is half a rod long, and so one-quarter inch fall for its length makes one-half inch fall per rod, and so on. Never be content unless your level shows some fall towards your outlet. The more uniform the fall the better. If you know, for example, that your fall is only one-half inch per rod, you must keep your grade down to about that rate, not varying, or you will have trouble. Beginning at the lower end the tendency of a new hand is to "lose grade," that is, to work towards the surface. The span level will help prevent this.



The groove should be cut so that the tiles will fit without rolling, and shall touch bottom all the way. Lay the tiles from the outlet up stream, look through each tile to see that it is clear of obstructions, and lay it so that it will not rock or wobble. Chuck it up tight against the preceding tile, and then step forward upon it and lay the next.

Lay no tiles that are not hard burned enough to give a clear metallic ring when struck with a hammer, and lay no cracked or broken ones. For junctions with laterals get from the kiln, if possible, main tiles with junctions formed, or at least holes cut for junctions. If you have to cut with a trowel, use great care and secure great perfection.

Stand in the ditch when the tiles are laid, and with the ditching spade shovel in the fine clay (the subsoil last dug out), and see that it rattles or fills clear down on both sides of the tiles. Tramp very thoroughly with the feet as you fill, until you have filled in some eight inches deep. The rest may be plowed in by running a very long evener and long inside lines, and having one horse on each side of the ditch.

In very compact clay subsoil thorough drainage requires laterals from thirty-three to fifty feet apart, to drain the soil rapidly and thoroughly enough to prevent damage to crops after very heavy rains. With fair fall, a tile will drain an area equal to one-half its diameter (in inches) squared—that is, a two inch tile should carry the water from one acre (two divided by two and squared), a four inch tile four acres, a five inch tile about six acres, and a six inch tile about nine acres; the less the grade, the wider the "suction range," and the longer the drain, the larger the tiles required. A drain may begin at its lower end with four inch tiles, and diminish to three and then to two towards its upper end.

SUGGESTIONS ABOUT BARNS.

Barn with Cow Stable and Box Stalls—Increasing Roomy Barn Space.

In the first cut herewith presented is shown a cheap method of increasing barn or stable room, recently suggested by Rural New Yorker. The spool barn

room of many farms attests to the value of the suggestion. The addition con-



FIG. 1.—INCREASING BARN ROOM.

sists simply of a lean-to added to either end of an ordinary barn; these may be used for stables, for storing implements, wagons, etc., for a shop, or various other purposes. The artist has represented them as having each a small door, but for housing implements larger doors will be necessary. Windows might also be added, and other changes may suggest themselves.

The cut is intended simply as a hint of the possibilities of such additions. The capacity of a barn may be nearly doubled, while the expense need not be heavy. Floors may be added or not, according to the uses to which the addition is to be put. Such additions are preferable to separate small buildings for the reason that they are more sheltered from storms and winds, are more convenient, and may be utilized for storing grain, hay, etc., in productive seasons.

In the second cut is shown the plan of a barn built for a forty acre farm, which Ohio Farmer describes as follows: It is 32x44 feet. C is the cow stable for three cows, separated from H, the horse stable, by a sliding door. H, H, are two large box stalls, separated by a sliding door. Each can be made into two stalls when required. This stable part is 14x32 feet. F is the feed hall, 4

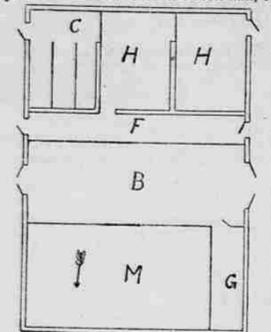


FIG. 2.—BARN FOR A FORTY ACRE FARM. C, the cow stable, 12 feet wide; B, the barn floor, 12 feet wide, and M, a mow or bay, 14 feet wide. If a granary is wanted make it at G, 7 feet wide, 14 feet deep and 7 feet high, boarding it tight, and secure from vermin. Storage for hay is over stables and feed hall. M is for grain, fodder, straw, etc., and the mow over the barn floor can be utilized for the same.

Experiment Station Bulletin No. 2, published by authority of the secretary of agriculture, J. M. Rusk, is a digest of the annual reports of the agricultural experiment stations in the United States for 1888. Part I of this bulletin covers over 250 pages, and treats by itself the report of each station, with only such comment as is necessary to connect the several parts. The financial reports of the stations have been reserved for Part II.

A review of the present digest of annual reports of the stations leads to several conclusions regarding the experiment station enterprise in the United States, of which the following are noted in the introduction: First, it is observed that the reports are not a fair exhibit of a year's work. Most of the stations are new. Of fifty-seven stations now in operation only twenty were organized previous to 1888, when the act of congress providing \$15,000 per year for each state for the purpose came into effect, and it was not until the spring of that year that the appropriation was made available. Much of their first effort was devoted to such preparation as precedes the actual work of investigation.

The prospects of the experiment station enterprise is, it is claimed, on the whole encouraging. As regards the scientific character of their work, our stations are doing just what the European stations did in their early experience, they are selecting questions of immediate practical interest and studying these in the most direct way, because they feel that they must, and neither they nor their constituencies have found by actual experiment how often this method fails. Most of our stations are connected with educational institutions, where experience shows that their work is most advantageously done.

This bulletin is rendered easy for reference by the completeness of its index. The table of contents at the beginning of the book presents the reports of the individual stations according to states in alphabetical order. At the close of the volume appear an index of names and an index of subjects. Later on will appear on this page additional notices in reference to the various individual station reports.

Here and There. According to a report of the agricultural department at Washington, the homestead area, supposed to be limited to 200 miles west of the Missouri, already extends about 400 miles, and it is thought there are surprises of success yet in reserve for the experimental arid lands farmer of the future.

The corn crop of Texas is reported as the largest ever grown. The quality of the wheat is excellent. A good crop of sorghum has been realized. In some portions of southern Texas large crops of the sugar cane have been planted, and handsome profits have been reaped. An immense crop of cotton has been grown.

A Doubtful Compliment. "I think I shall use the typewriter all the time now, in my literary work," said the young author, who was just gaining a slow mastery over the keys. "Why, yes," said his appreciative wife, "I should think that you could write just about as fast as you can think."—Somerville Journal.

What He Was Fitted For. Judge—Your case seems beyond my jurisdiction, sir, and I am afraid you will have to be sent to an asylum. You appear to be an compositio, sir.

Prisoner—Couldn't you put me on the jury for a term, your honor?—Lowell Obisizer.

The Thoughts Did Not Count. Amy—You were entirely alone, weren't you, Mr. Delley?

Dolley—Yes, Miss Amy, until you came I was alone with my thoughts. Amy—That's what I said. You were entirely alone.—New York Sun.

SCHEDULE OF ARRIVAL AND CLOSING OF MAILS IN SALT LAKE POSTOFFICE.

MAIL	Arrives	Closes
Eastern, via U. P. R. R.	2:30 a.m.	6:30 a.m.
Eastern, via D. & R. G. W.	6:30 p.m.	9:30 a.m.
Western	10:30 a.m.	6:00 p.m.
San Francisco, closed p.m.	6:30 a.m.	6:30 a.m.
Ogden	11:30 a.m.	6:30 a.m.
Ogden	6:30 p.m.	3:00 p.m.
Ogden	6:30 p.m.	6:30 p.m.
North and Northwest	6:30 p.m.	3:00 p.m.
Park City	11:30 a.m.	3:00 p.m.
Park City	6:30 p.m.	6:30 a.m.
Southern	6:30 p.m.	6:10 a.m.
Southern closed pouch, Millford, Price and beyond	10:10 a.m.	9:50 p.m.
Bingham Cañon and West Jordan	4:30 p.m.	6:40 a.m.
Tooele County	3:45 p.m.	7:10 a.m.
Alta and Wasatch	6:30 p.m.	6:10 a.m.

Language is hardly strong enough to express my admiration of the merits of Chamberlain's Cough Remedy. It is the best remedy for croup and whooping cough I have ever used. During the past eighteen years I have tried nearly all the prominent cough medicines on the market, but say, and with pleasure too, that Chamberlain's Cough Remedy is the best of all. Thomas Rhodes, Bakersfield, California. For sale by Z. C. M. I. drug department.

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