

A Soldier's Strength

Every enlisted man would stand up stronger during the first year's service if he could have the benefits of

SCOTT'S EMULSION

because it fortifies the lungs and throat, creates strength to avoid grippe and pneumonia and makes rich blood to avert rheumatic tendencies.

Send a bottle of SCOTT'S to a relative or friend in the service.

The Norwegian cod liver oil in Scott's Emulsion is now refined in our own American laboratories which makes it pure and palatable.

Scott & Bowne, Bloomfield, N. J. 17-14

200 Rooms Near Both Absolutely
100 Baths Depots Fireproof

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Corner Sixth and Hoyt Sts., Portland, Ore.
LOU HIMES, Manager.

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MURINE Granulated Eyelids,
Sore Eyes, Eyes Inflamed by
Sun, Dust and Wind quickly
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No Smarting, Just Eye Comfort
MURINE Eye Remedy At Your Druggist's or by
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Eye Salve, in Tubes 25c. For Book of the Eye—Free.
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Behrke-Walker Business College, Portland,
Ore., largest in Northwest, trains you in all
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Cash buyers in local and car lots.

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Reference: Hibernia Savings Bank.

SHIP Veal, Pork, Beef,
Poultry, Butter, Eggs
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to the Old Reliable Evering house with a
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The H. F. NORTON CO., Portland, Ore.; Seattle, Wa.

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Hogs, Poultry, Eggs, Hides and Cascara bark.
Top prices and fair treatment.

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We pay cash and need Hogs, Veal, Beef, Mutton,
Chickens, Turkeys, Geese, Ducks, Butter,
Eggs, Potatoes, Henna, Onions, Clover Seed, Fruit
and all other produce of the farm. Check sent
same day shipments arrive. Top market prices at
all times. Send for tags.

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Front and Alder Streets Portland, Oregon

WE WANT YOUR
**Poultry, Veal
and Hogs**
HIGHEST MARKET PRICE
NO COMMISSION
PROMPT RETURNS
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Do Your Own Plumbing
By buying direct from us at wholesale prices
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cent. All goods guaranteed.
Northwest headquarters for Leader Water
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212 Third Street. Portland, Oregon

P. N. U. No. 45, 1917.

SURFACE OF ROADS

Methods to Be Employed in Construction Depends on Conditions to Be Met.

FOUR SETS ARE SUMMARIZED

Location, Design, Drainage, Grading, Etc., Are Important—Each Feature Described Separately and in Full.

The proper method to employ in constructing a sand-clay road surface depends on the conditions to be met. In general, there are four distinct sets of conditions, all of which may occur in the same locality, or even on different sections of the same road. These are:

Case 1, where the original roadbed is sandy and it is desired to construct the surface by admixing clay;

Case 2, where the original roadbed is composed of clay and it is desired to construct the surface by admixing sand;

Case 3, where it is desired to construct the surface of topsoil or other natural sand-clay mixture without admixing any of the roadbed material;

Case 4, where it is desired to supply the clay and sand separately and mix the two materials together in place to form the surface.

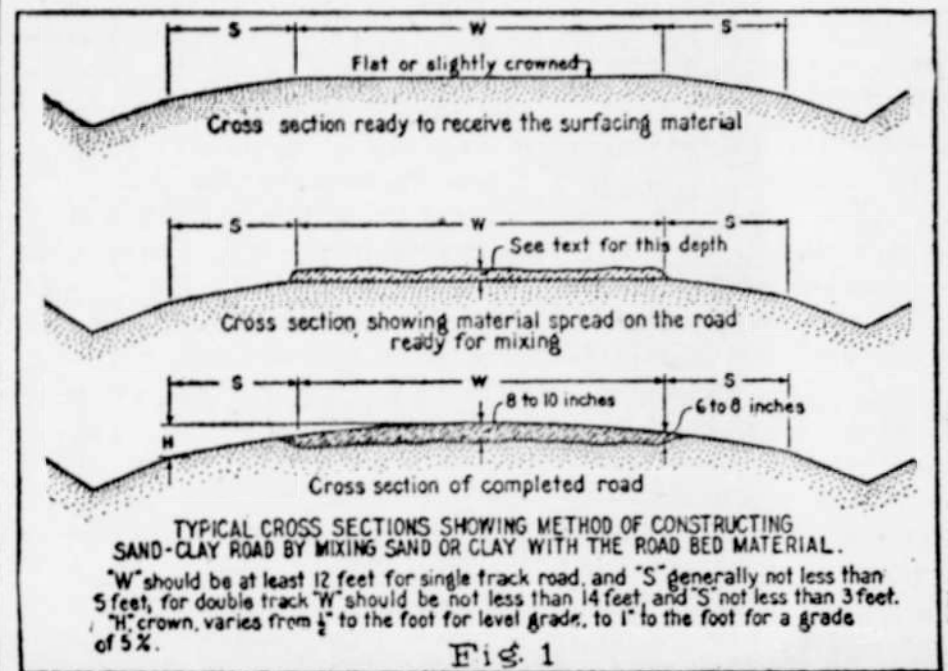
Before discussing the different cases separately, the general ends which all

should be thoroughly and intimately mixed together in all cases. In making artificial mixtures, therefore, much plowing and harrowing are required.

(5) No matter what method is followed in constructing a sand-clay surface, traffic usually must be depended upon to puddle and compact the surfacing material, and the road never should be considered complete until after it has been subjected to traffic for a considerable period. During this period the surface should be kept in shape by repeated dragging, and if necessary additional sand or clay should be supplied at points which show weakness owing to these materials not having been mixed in proper proportions.

Other features of the construction can best be described separately for each of the four sets of conditions mentioned above.

Case 1.—To construct a sand-clay surface by admixing clay with sand from the roadbed, first grade the roadbed in the manner already described for earth-bed construction, but keep the crown flat on the portion to be surfaced. Then spread clay over that part of the roadway which the surface is to cover, to such depth that, when it is mixed with the sand of the roadbed, a surface about eight inches thick, after compacting, will be obtained. The loose depth of clay necessary to secure a finished surface eight inches thick usually will vary from four inches to six inches, according to the amount of sand the clay contains. After the clay has been spread, plow up sand from beneath in sufficient quantity to make the net proportion of sand to clay about 2 to 1. Ordinarily the plow furrows should extend



of the construction methods should aim to attain will be summarized briefly.

(1) The questions of location, design, drainage, grading, etc., are, if anything, more important in the case of sand-clay roads than in the case of earth roads.

(2) The amount of clay contained in a finished sand-clay road surface should be only slightly more than sufficient to fill the voids in the sand. Ordinarily about one part of clay to two parts of sand gives satisfactory results, though the proper proportion for any particular case can be determined best by experiment.

(3) For average country-road traffic and a stable roadbed, the depth of a sand-clay surface should be about eight inches after it is compacted. If clean sand and pure clay were used to make the mixture, the respective depths of the sand layer and the clay layer required would be approximately eight inches and four inches, measured loose. It is customary to decrease the surface thickness from center to sides, with a feather edge extending out over the shoulders, but this practice makes it necessary for most of the traffic to use the center of the road, and heavy vehicles using the edge of the surface are liable to break through the surfacing material.

(4) In constructing a sand-clay surface, the two constituent materials

down into the sand from four to six inches, depending on the compactness of the roadbed and the amount of sand originally present in the clay. But it is better to have too little than too much sand, because it is easier to add sand from the roadbed than to haul additional clay. Next harrow the surface with a disk harrow. Repeat the operations of plowing and harrowing until the sand and clay are mixed thoroughly and uniformly. Then shape up the surface with a grading machine or road drag and permit traffic upon it. After the first soaking rain, plow and harrow the surface again until the surfacing material practically becomes mud, after which shape up the surface and keep it in shape by repeated dragging until it has dried out and is thoroughly compacted. Watch the road carefully for several months after it is first constructed, to correct deficiencies of sand or clay and to keep the surface in shape.

Case 2.—To construct a sandy-clay road surface by admixing sand with clay from the roadbed, the process is exactly similar to that described for Case 1, except that sand is spread over the graded roadbed and clay is plowed up from beneath to mix with it.

The honey bee is probably of Asiatic origin. Wild bees are abundant in India and in the islands of the Malay archipelago.

MANURE FROM FARM ANIMALS

Great Source of Wealth Is Not Looked After as Carefully as It Should Be in Many Instances.

Some systematic experimenter has made the discovery that the manure from the farm animals, if carefully saved and utilized as a fertilizer, is worth annually as follows: That produced by the horse or mule, \$27; that of cattle, \$20 per head; the hog, \$4, and the sheep, \$2. This great source of wealth is not looked after as carefully on our farms as it should be or could be. The winter or feeding season could be made much more resourceful in the manure than it is on most farms. The manure should be closely gathered and hauled to the fields or grounds where it is to be used and spread by use of the manure spreader.

Work your horses moderately during very hot days and water them often; protect them from the flies and watch them carefully; keep their bowels loose by pasturing or feeding laxative foods.

ROOTS FOR SEED PRODUCTION

By Following Plan Outlined Herewith Farmer Will Safeguard Against Famine in Spring.

Select this fall a number of the best roots, store them carefully through the winter and plant them next spring for seed production. By doing this, you will further your own interests and safeguard against a field-root seed famine. In addition, it will be found that the seed so grown will give just as good yields, or maybe better, than imported seed.

Growing mangels, turnips or carrots for seed is quite simple. It requires no special skill nor any outlay of capital, and the little labor involved is well repaid by the results.

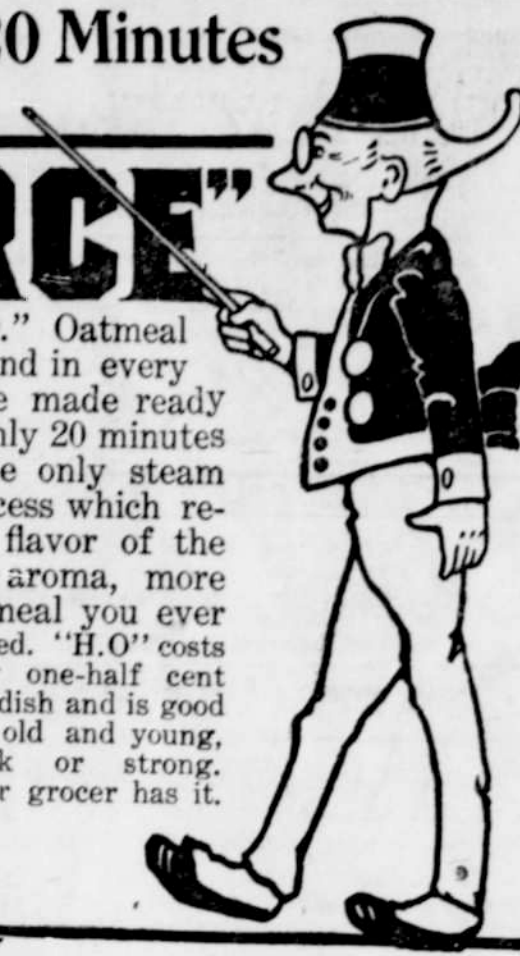
Suppose each year one acre of mangels or turnips or carrots is grown for the stock. How many roots will it be necessary to select this fall and plant out next year to produce the quantity of seed needed?

A town of cement buildings is being constructed in Montana.

Breakfast in 20 Minutes

"FORCE"

A package of "H.O." Oatmeal should always be on hand in every home because it can be made ready for the table with only 20 minutes cooking. "H.O." is the only steam cooked oatmeal—a process which retains all the natural flavor of the oats—a delicate full aroma, more delicious than any oatmeal you ever tasted. "H.O." costs only one-half cent per dish and is good for old and young, weak or strong. Your grocer has it.



With the Fingers! Says Corns Lift Out Without Any Pain

You reckless men and women who are pestered with corns and who have at least once a week invited an awful death from lockjaw or blood poison are now told by a Cincinnati authority to use a drug called freezezone, which the moment a few drops are applied to any corn or callous the soreness is relieved and soon the entire corn or callous, root and all, lifts off with the fingers. Freezezone dries the moment it is applied, and simply shrivels the corn or callous without inflaming or even irritating the surrounding tissue or skin. A small bottle of freezezone will cost very little at any of the drug stores, but will positively rid one's feet of every hard or soft corn or hardened callous. If your druggist hasn't any freezezone he can get it at any wholesale drug house for you.

An Unfailing Sign.
"My dear, this child is going to have lots of spirit in its voice."
"How can you tell that now?"
"Because it already shows a tendency to high bawls."—Baltimore American.

ABSORBINE STOPS LAMENESS

from a Bone Spavin, Ring Bone, Splint, Curb, Side Bone, or similar trouble and gets horse going sound. It acts mildly but quickly and good results are lasting. Does not blister or remove the hair and horse can be worked. Page 17 in pamphlet with each bottle tells how. \$2.00 a bottle delivered. Horse Book 9 M free.

Those Poor Relations.
Every day some more of Germany's diplomatic relations turn up "broke."—Birmingham Age-Herald.

SKIN TORTURES

That Itch, Burn and Scale Quickly Relieved by Cuticura—Trial Free.

It takes about ten minutes to prove that a hot bath with Cuticura Soap followed by gentle applications of Cuticura Ointment will afford relief and point to speedy healing of eczemas, itchings and irritations. They are ideal for all toilet purposes. Free sample each by mail with Book. Address postcard, Cuticura, Dept. L, Boston. Sold everywhere.—Adv.

Too Many Operations

The Right Medicine in Many Cases Does Better than the Surgeon's Knife. Tribute to Lydia E. Pinkham's Vegetable Compound.

Doctor Said Operation or Death—But Medicine Cured.

Des Moines, Iowa.—"My husband says I would have been in my grave today had it not been for Lydia E. Pinkham's Vegetable Compound. I suffered from a serious female trouble and the doctors said I could not live one year without an operation. My husband objected to the operation and had me try Lydia E. Pinkham's Vegetable Compound. I soon commenced to get better and am now well and able to do my own housework. I can recommend Lydia E. Pinkham's Vegetable Compound to any woman as a wonderful health restorer."—Mrs. BLANCHE JEFFERSON, 703 Lyon St., Des Moines, Iowa.

Another Operation Avoided.

Richmond, Ind.—"For two years I was so sick and weak from female troubles that when going up stairs I had to go very slowly with my hands on the steps, then sit down at the top to rest. The doctor said he thought I should have an operation, and my friends thought I would not live to move into our new house. My daughter asked me to try Lydia E. Pinkham's Vegetable Compound as she had taken it with good results. I did so, my weakness disappeared, I gained in strength, moved into our new home, do all kinds of garden work, and raised hundreds of chickens and ducks. I cannot say enough in praise of Lydia E. Pinkham's Vegetable Compound."—Mrs. M. O. JOHNSTON, Route D, Box 190, Richmond, Ind.

Of course there are many serious cases that only a surgical operation will relieve. We freely acknowledge this, but the above letters, and many others like them, amply prove that many operations are recommended when medicine in many cases is all that is needed.

If you want special advice write to Lydia E. Pinkham Medicine Co. (confidential) Lynn, Mass. Your letter will be opened, read and answered by a woman and held in strict confidence.