

HIGHWAY IMPROVEMENT

TO STUDY ROAD CONDITIONS

Data Being Sought Looking Toward Standardized System of Local Road Management.

Detailed studies of local road building systems in 100 counties are now being carried on by the department of agriculture in co-operation with the state highway departments and local road authorities.

The purpose of this study is to discover the points of excellence and defects in existing local methods of building and maintaining roads which will aid the state authorities to put local road management on a systematized basis. The co-operating state authorities have been asked to designate counties that present typical and exceptional features as to topography, character of road materials, methods of construction and maintenance, administrative organization, methods of road financing and traffic conditions. From these lists 100 counties will be selected, and in these counties the division of road economics will make intensive studies.

This investigation is prompted by the fact that there is at present very little knowledge as to the most effective and economical methods by which a county can develop its roads. At present the methods of financing local road improvements vary from



Rolling a Road Surface.

calling on farmers for a certain number of days labor in lieu of a road tax, or the use of county prisoners in road construction, to bond issues or maintenance of roads from dramshop license funds.

The department will study all of these systems with the view to determining what system or combination of systems works best in actual practice.

There is, however, at present no standard system of keeping accounts for road building and maintenance, and as a result, while some counties know to a penny the purpose for which money was spent, others have no definite check or reporting system. Among various counties with the same conditions, cost for excavation or other labor is anything but uniform, and many counties, because of the absence of definite knowledge, fail to use local and cheap materials and construct roads which are unnecessarily expensive for their purpose, or which will wear out before the bond issues are redeemed. The investigation will include a careful study of the use of convict labor in road construction.

In connection with the scientific study, the department's highway engineers will advise freely with local officials as to improvements, and thus give each county visited the advantage of direct co-operation, engineering supervision and assistance.

These investigations, it is believed, will yield important economic data bearing especially on the benefits and burdens of road improvement and showing the extent to which financial outlay under given typical conditions is justifiable.

The heads of state highway departments are manifesting great interest and are co-operating cordially in this work. These data when obtained will be published and thus made accessible to all county and state road officials.

Letting Sun Shine on Highway.

The earth road should have at least six hours of sunshine each day. This can be obtained either by locating the road with southern or western exposure or by having such brush and trees as impede the drying action of the sun and wind removed. With gravel and stone roads this is not so necessary, as a certain amount of moisture is needed on such roads, especially in the summer time.

Brings Market Nearer.

The good road brings the market nearer to your farm and adds materially to the value of the place, whether you want to sell or live there.

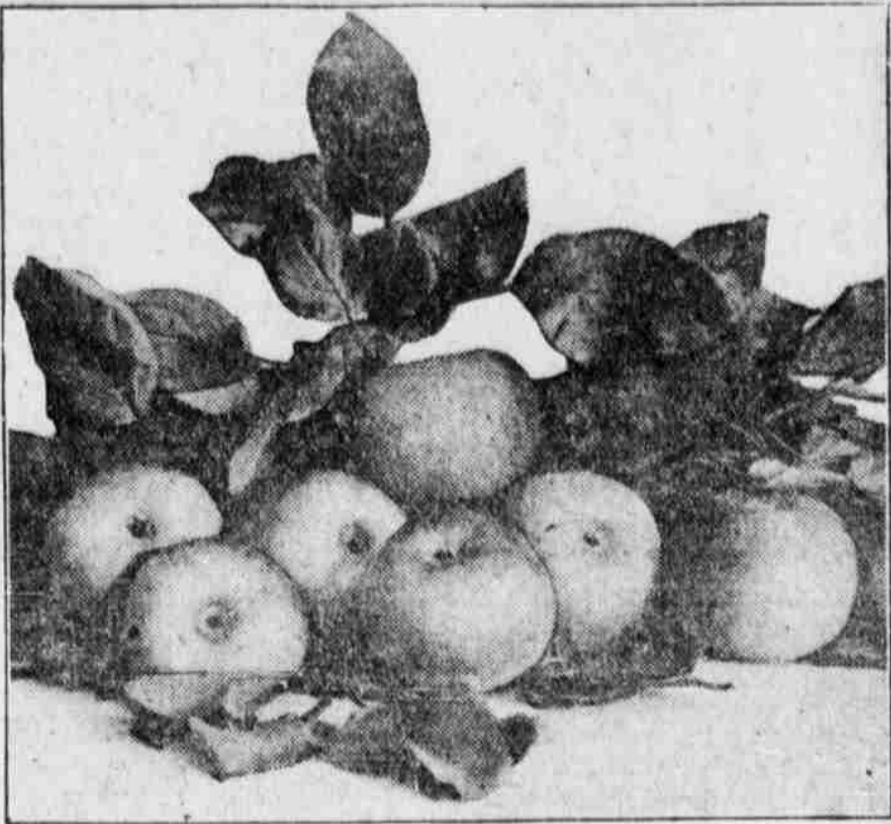
Seeking Dry Roadbeds.

Roads should never be located so close to stream beds as to be subject to overflow, or on ground which is constantly damp and marshy.

Every Citizen Interested.

A highway is no longer of purely local interest. Every citizen of a state is interested in the roads.

BIG DANGER OF THE APPLE-TREE MINER



Apples That Have Been Cared for and Sprayed Regularly are Not Subjects for the Apple Miner.

Many fruit growers have observed small brownish patches on the leaves of apple trees. These patches are caused by the apple-tree miner, a minute insect which feeds on the internal tissue of the leaf.

The insect has been known a long time and has become well distributed over the United States and Canada, but has never been a serious pest until last year.

When once familiar with the work of this insect it is an easy matter to recognize its presence. Yellowish or brownish blotches are observed on the upper surface of the leaf.

Early in June the tiny eggs are deposited singly on the surface of the leaf, adjacent to one of the larger veins. Each egg is protected by a drop of wax, which appears in the sunlight as a glistening spot.

The eggs hatch in about six days and the young caterpillars without exposing themselves to the outside world immediately enter the leaf. At first they make a narrow channel, but with the increase in size, of the insect and its appetite the channel becomes wider, and the trumpet-shaped mine in the fabric of the leaf is the result.

The caterpillars moult, or change their coat five times. The coats are alike in color and structure but vary in size to accommodate the growing insects.

As the old clothes are shed they are judiciously pushed out through a small opening in the lower surface of the mine. The insects further display their cleanly habits, unlike many other leaf-miners, by depositing their excrement without the mine through this same opening.

The caterpillars reach their full growth about the middle of July when they transform to pupae. This resting state lasts only from eight to ten days. At the expiration of this time

the pupae push themselves partly through the upper surface of the mine, break through their pupal skins and appear as fully developed moths, leaving the pupal skins partly projecting through the slit in the leaf.

These tiny moths are very inconspicuous, but on close observation may be seen resting on the apple leaves. Like some other members of this family of insects the moths assume a peculiar attitude while at rest. The fore legs are extended while the others are partly folded under the body. In this way the insects rest on the fore legs and the end of the abdomen.

The female moths soon after emerging gets the egg-laying habit. The production of eggs seems to be their sole object in life, for after continuing the operation for two or three days, without awaiting the result they die.

The eggs soon hatch and produce the second brood of caterpillars which possess similar habits to those of the first brood. They grow more slowly than those of the first brood, not reaching maturity until about September 1, or possibly later.

About this time they cease eating, and proceed to make their quarters comfortable for the winter. Unlike the mines of the spring brood those of the second brood are densely lined with fine white silk. In these comfortable quarters the larvae spend the winter.

The gathering up and destroying of the leaves in the fall readily suggests itself, and is recommended where tillage is not practised. There are, however, so many insects of various species which spend part of their existence in the ground and which are destroyed by breaking up their quarters that aside from the generally recognized benefits, orchard tillage is, in most cases, recommended.

STUDY THE INSECTS AND THEIR HABITS

Especially Favorite Remedy for Cutworm Is Early Plowing—Fire Is Sure Destroyer.

(By L. M. BENNINGTON.)

All insects pass the winter in some stage of their existence. The question is, where and how? Certainly not on the wing, and often in a way that they can be easily destroyed.

Watch the fences and weather-boarding of unpainted buildings for the chrysalis of the cabbage worm, neatly suspended by a couple of silken threads. Some of these times the mischief-making butterfly will emerge, and it will prove many times more difficult to destroy.

Many insects pass the winter in egg or larval form in the rubbish about the farm, old weed stalks, clumps of dead grass, and the remains of last year's crop being common lurking places. Fire is a sure destroyer, and cleans the ground nicely for plowing.

Early plowing in spring is hard on insects, the freshly exposed sod being cleared of them by frost. This is especially a favorite remedy for cutworm, though the finely pulverized soil which is a resultant invites the ants freely.

The pupa of the tomato-worm is often plowed up in the garden and is distinguished by an appendage like the handle of a pitcher. While in this stage most insect life is dormant, the tomato or potato worm pupa expresses its disapproval of being disturbed by a couple of flops. It placed in a sunny window it will develop into a magnificent butterfly, but every one knows the horrid green larva that follows.

Every one is familiar with the snapping bugs or click-beetles which creep into our windows and amuse us by falling on their back and feigning death. Presently they make a clicking noise and hop up several inches. If they fall on the back the performance is repeated until they light on their feet, when they scamper off.

Their larvae live near the surface of the ground, and from their long, scarcely tapering form and hard covering are known as wire worms. These

is hardly a cultivated plant which they do not infest, and working as they do beneath the soil, they are difficult to cope with.

If the cells containing the pupa or recently transformed adults are broken, their inmates perish. Hence all plowing seems one way to lessen the nuisance, as the plowing and successive freezings must destroy many cells.

The lady bug in various forms is quite common both indoors and out, and should be always carefully guarded as one of the best aids in destroying aphids.

The little red lady bug with a black dot on each wing is often found about houses in winter, and should be transferred to the conservatory or window garden.

It is often mistaken for the buffalo beetle and destroyed, though the latter is smaller, and black and white with simply a longitudinal band of dull red along both sides of the back.

Plain Facts.

There is much of value written these days about work on the farm, which will never benefit some farmers, because they have the notion that they are too busy to read.

The farmer who keeps record of the income as well as the expenditure of his farm stands a pretty good chance against his fellow farmer who does not keep records.

Better Cultivation.

If the farmer would cultivate the garden better, and thus save some of the money he spends at the store for articles he could easily grow, his field products would come nearer being clear profit than under his present system.

Cows on Pasture.

When cows are on pasture and receive little or no hay, their grain ration should be bulky. Bran, ground oats, distillers' grains, beet pulp and brewers' grains may be used to add bulk to the ration, when practical.

Get Rid of Flies.

The flies are here now thick. They dig the life out of the cows too if you do not spray them off. A rig for doing that will not cost much. It is far more expensive not to have one than it is to invest a little that way.

Boon to Mankind.

Ignatius Tootle, the renowned authority on floral life, who lives near the quiet village of Yankee Springs, Ia at the present time trying to out-burbank Burbank, the wiz, by growing a rectangular watermelon. Mr. Tootle has noticed for years that ultimate consumers have had much trouble trying to carry watermelons from the store, inasmuch as they (the watermelons) are of awkward shape and quite slippery, and after a watermelon has fallen and hit the cement sidewalk its usefulness may be said to be over. Mr. Tootle's watermelon will be long and will have square corners, one of which corners will fit into the bent elbow when the melon is carried on the inside of the arm. Mr. Tootle expects to have his new melon growing and on the market by 1927, if nothing happens.—Boston Globe.

ECZEMA ITCHED AND BURNED

R. F. D. No. 2, Seymour, Mo.—"My scalp broke out with fine pimples at the start. They itched and burned so much that I was compelled to scratch them and they would fester and come to a head and break out again. The trouble was attended by such burning and itching I could not sleep, also when I sweat it burned the same. My hair fell out gradually and the scalp kept rough and dry with itching and burning. After about two years the pimples broke out between my shoulders. My clothing irritated them. I was troubled with that eczema five or six years.

"I tried everything that was recommended without any benefit until I used the Cuticura Soap and Ointment according to directions, and Cuticura Soap and Ointment cured me sound and well in two weeks." (Signed) S. L. Killian, Nov. 22, 1912.

Cuticura Soap and Ointment sold throughout the world. Sample of each free, with 32-p. Skin Book. Address post-card "Cuticura, Dept. L, Boston."—Adv.

Public Opinion.

People say how strong public opinion is; and, indeed, it is strong while it is in its prime. In its childhood and old age it is as weak as any other organism. I try to make my own work belong to the youth of public opinion. The history of the world is the record of the weakness, frailty and death of public opinion, as geology is the record of the decay of those bodily organisms in which public opinions have found material expression.—Samuel Butler.

New Modern Dancing

The leading expert and instructor in New York City, writes: "Dear Sir:—I have used ALLEN'S FOOT-BALM, the antiseptic powder to be shaken into the shoes, for the past ten years. It is a blessing to all who are compelled to be on their feet. I dance eight or ten hours daily, and find that ALLEN'S FOOT-BALM keeps my feet cool, takes the friction from the shoe, prevents corns and sore, aching feet. I recommend it to all my pupils." (Signed) E. FLETCHER HALLAMORRY, Sample FREE. Address ALLEN'S Ointment, Le Roy, N.Y.

The Eternal Feminine.

"Want to hear some bad news?" "Oh, yes! Goody! Who is it about?"—Houston Post.

A wealthy dame who weighs 200 pounds is "portly." An ordinary woman who weighs 200 is just plain fat.

Be happy. Use Red Cross Ball Blue; much better than liquid blue. Delights the laundress. All grocers. Adv.

Riches have wings—otherwise there would be but few high flyers.

WESTERN CANADA'S NATURAL RESOURCES

PETROLEUM, NATURAL GAS, COAL AND FARM LANDS.

The developments that have taken place recently in the oil and gas fields of Western Canada have but added another to the many previous evidences that have been produced, showing the great wealth that has been an unknown asset for so many generations.

The latest reports from the oil-fields at Calgary show that there is a production, there that would appear to equal the best paying fields on the continent. Experts have been on the ground for some time. It is said that one of the wells is able to produce 2,000 gallons an hour. If this is so there are but about a dozen wells in the world of greater production. During the past week discoveries of surface indications have been made which show that all exists over a considerable portion of Alberta and Saskatchewan, while in Manitoba there have also been showings. At Battleford, Saskatchewan, a few days ago discoveries were made which led to the filing for leases on twenty thousand acres of land, all having strong surface indications. Companies were formed to carry on immediate work, and in a couple of months, or probably less, the story will be told whether oil exists in paying quantities.

But there are also the coal deposits and the natural gas deposits that are helping to make of Western Canada one of the wealthiest portions of the continent.

With the grain fields covering these hidden riches it is no wonder that a continued range of optimism is to be seen everywhere. Early reports of seeding of all grains being successfully completed all over the country are followed by reports of excellent and strong growth everywhere. During the first week in June most of the wheat had reached a growth of from twelve to twenty inches, with the most even appearance, almost universally, that has been seen for years. Oats appeared equally well, and covered the ground in a way that brought the broadest kind of a grin to overspread the farmer's countenance.

Barley, a favorite with the hog raisers, had taken good root, and was crowding oats for a first place, as to length of shoot. Cultivated fodder grasses are getting great attention, as a consequence of the inclination to go more largely into mixed farming, and the raising of hogs, cattle and horses. The weather is reported fine, just what is needed, and if present favorable conditions continue, the grain crop of Western Canada for 1914 will be the largest average in the history of the country.—Advertisement.

Artificial Flowers an Old Idea.

Artificial flowers were made in ancient times by the Egyptians. In Europe during the eighteenth century, when there existed such a craze for porcelain, flowers were made of this substance; while the odor of the real flowers was imitated by the use of perfumes.

Bright, I Say!

"Algy makes very sure of himself before he does any boasting." "A safe blower, eh?"

WOMEN CAN HARDLY BELIEVE

How Mrs. Hurley Was Restored to Health by Lydia E. Pinkham's Vegetable Compound.

Eldon, Mo.—"I was troubled with displacement, inflammation and female weakness. For two years I could not stand on my feet long at a time and I could not walk two blocks without enduring cutting and drawing pains down my right side which increased every month. I have been at that time purple in the face and would



walk the floor. I could not lie down or sit still sometimes for a day and a night at a time. I was nervous, and had very little appetite, no ambition, melancholy, and often felt as though I had not a friend in the world. After I had tried most every female remedy without success, my mother-in-law advised me to take Lydia E. Pinkham's Vegetable Compound. I did so and gained in strength every day. I have now no trouble in any way and highly praise your medicine. It advertises itself."—Mrs. S. T. HURLEY, Eldon, Missouri.

Remember, the remedy which did this was Lydia E. Pinkham's Vegetable Compound. For sale everywhere.

It has helped thousands of women who have been troubled with displacements, inflammation, ulceration, tumors, irregularities, periodic pains, backache, that bearing down feeling, indigestion, and nervous prostration, after all other means have failed. Why don't you try it? Lydia E. Pinkham's Vegetable Compound, Lynn, Mass.

Make the Liver Do its Duty

Nine times in ten when the liver is right the stomach and bowels are right

CARTER'S LITTLE LIVER PILLS

gently but firmly compel a lazy liver to do its duty.

Cures Constipation, Indigestion, Sick Headache, and Distress After Eating.

SMALL PILL, SMALL DOSE, SMALL PRICE.

Genuine must bear Signature

Warranted

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A toilet preparation of merit. Helps to eradicate dandruff. For restoring color and beauty to gray or faded hair. 50c and \$1.00 at Druggists.

Years of Experience Makes Perfect CASTORIA

Mothers may try new remedies on themselves but Baby's life is too delicate, too precious to try any experiments.

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Bears the Signature of

Chas. H. Fletcher.

BECAUSE it has been made under his personal supervision for more than 30 years to the satisfaction of millions upon millions of Mothers.

Sold only in one size bottle, never in bulk, or otherwise; to protect the babies.

The Centaur Company,

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