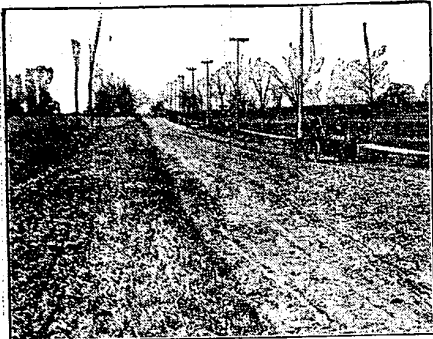


## RETIRING ROAD BONDS

Life of Highway, Not Economic Term of Bond, Should Determine Length of Loan

Prepared by the U. S. Department of Agriculture



Teams Destroying Lawns to Avoid Mud Roads, Bennington, Va.

The proper method of retiring rural highway bonds is one of the serious problems which must be worked out by county commissioners and others interested with the expenditure of road funds. The three methods usually followed for retiring bonds at maturity are known as the sinking fund, annuity, and serial bond plans.

The majority of highway bonds now outstanding have been issued on a straight terminable basis to be retired by sinking funds. The term of these bonds varies from 10 to 40 years, with an average of nearly 25 years. The fund to retire them is accumulated by annual installments paid by the taxpayers, and is supposed to draw interest continuously and to accumulate a sufficient amount to discharge the debt at maturity. The interest which the sinking fund draws is usually from one to two per cent less than the interest paid for the loan. Five per cent highway bonds are common with the sinking fund method to draw three and one-half per cent interest.

The following table shows the annual payments which, with interest at three, three and one-half and four per cent, compounded semi-annually, will amount to \$1,000 at the end of a term of years.

Years.	3 Per Cent.	3 1/2 Per Cent.	4 Per Cent.
10.....	\$81.12	\$81.12	\$81.12
15.....	\$57.70	\$57.70	\$57.70
20.....	\$45.79	\$45.79	\$45.79
25.....	\$38.40	\$38.40	\$38.40
30.....	\$32.57	\$32.57	\$32.57
35.....	\$27.84	\$27.84	\$27.84
40.....	\$23.88	\$23.88	\$23.88

There are many objections to the sinking fund method of retiring highway bonds. It may not be possible to obtain continuously the required rate



Coralline Rock Road, West Palm Beach, Fla.

of interest on the sinking fund to discharge the debt at maturity. The existence of the sinking fund is a constant temptation to municipal officers to use it for purposes other than the purpose originally intended. If a second object, it is easy to argue that the sinking fund already accumulated may be used to purchase the new securities and the finances of the community are likely to become much improved. This is particularly true since the officers in charge of such operations are frequently changing. Sinking fund tax levies may be deferred for other needs. The sinking fund always requires careful attention, because it does not progress automatically in most cases. It has some times been entirely neglected. The cost to the community of a bond issue retired by a sinking fund will be considerably greater in the end than the cost of the same bond issue made by either the annuity method or by the serial method.

By the annuity method of issuing bonds both the principal and interest are discharged by constant annual or semi-annual payments. The amount of each payment or installment is determined by the term of the bond. It is usually necessary to subdivide the bond issue into individual bonds of \$100, \$500, or \$1,000 each. The resulting periodic payment of principal and interest must vary slightly because of this adjustment. Under the annuity plan the amount of principal retired

is small at first and constantly increases while the interest charge decreases. The sum of interest and principal remains constant, and this is an advantage as the tax is then uniform.

The serial bond differs somewhat from the annuity bond, because, instead of keeping the annual payment of both principal and interest constant, the amount of principal that is retired each year alone remains fixed. This type of bond has become more common for highway purposes in recent years, and during 1912 and 1913 the number of serial issues exceeded the number of issues for any other single given term. The office of public roads received reports from these two years for \$15,306,519 in the serial highway bonds, which is over 50 per cent of the total county and district bonds for which the period or term of issue was reported. The first retirement of serial bonds is sometimes deferred for a number of years.

The continued success of highway bonds as a means of road improvement will depend largely on whether or not the county authorities follow these principles of sound road financing: (a) A steady and well administered system of meeting interest and providing for the retirement of bonds on maturity, whether by means of a sinking fund, by the annuity method, or through serial payments.

(b) The limiting of expenditures for road improvements to sums which are warranted by the actual saving in cost of hauling that the road improvement will effect. In this item may also be considered increased tonnage which follows road improvement.

(c) Expanding bond money only on roads of such a character that a



Coralline Rock Road, West Palm Beach, Fla.

satisfactory share of this money may be regarded as a permanent improvement. This means that the bond issue should not be spread so thin over an exorbitant mileage that the improvement will be largely superficial and practically disappear in a very short time. It means, also, that a large percentage of the bond issue should go into building a satisfactory and permanent foundation for the road which will call thereafter principally for resurfacing repairs, rather than for frequent complete reconstruction.

(d) Provision for proper maintenance and repair of a bond-built road throughout the life of the bonds, so that when bonds are retired the county will still have an actual and valuable property to show for its expenditure.

(e) Limiting the term of bonds so that the life of the bond will not exceed the life of the improvement.

## HAULING OVER PUBLIC ROADS

Prevailing Cost in the United States Is About Twenty-Three Cents Per Ton Per Mile.

The prevailing cost of hauling over the public roads of the United States is about 23 cents per ton per mile. More than 350,000,000 tons are hauled over these roads each year, and the average haul is about eight miles, from which it can readily be seen that our annual bill for hauling over the public roads is nearly \$650,000,000.

## DAIRY • Orchard • Information

## PREPARING A DAIRY HEIFER

Kindness and Gentle Handling Will Remedy Kicking Habit—Halter-break While Young.

You must have foresight in preparing the dairy heifer for her first milking period. If you handle the udder and teats so as to develop the udder, doing this at least twice a week for six or eight weeks before calving, the heifer will then be quiet and gentle and will not be afraid when her udder is touched after she has calved. Also her udder will be developed so that it will almost resemble a cow's udder.

It is natural for the cow to stand while being milked, consequently the heifer knows nothing about kicking until hurt or frightened into it. It is a good plan to halter-break a heifer when she is young, always being careful not to hurt or frighten her. If by accident anything should be done to cause the heifer to kick it is not too



A Young Jersey.

part of wisdom to punish her for kicking.

Kindness and gentle handling is the only remedy. If one lets his animal kick for the cause he based upon the principle that she never kicked until she was injured, the remedy will at once suggest itself. No cow was ever broken of kicking by striking with the stick or anything else. That practice only puts the cow on her guard, and as she comes near her with the stick she uses natural defense and kicks.

## CLEANLINESS OF THE CHURN

Rinsing Out With Warm Water Will Remove Any Particles of Butter-milk Remaining in Wood.

After the butter is taken from the churn, the latter should be rinsed out with warm water, and the rinsing followed by a thorough washing with very hot water. The rinsing out with warm water will remove any butter-milk which may remain in the pores of the wood. The hot water will remove any fat which may be left in the churn.

It is never well to use soap powders on the interior of the churn, but the occasional use of a small amount of dairy washing powder or lime water is beneficial. To keep the churn sweet and free from odors and taints a small handful of lime placed in some water in the churn or in the last rinsing of the churn is very effective. It is very essential in good butter making to see that all apparatus used is absolutely clean and free from undesirable odors and taints, as these are quickly absorbed by the butter.

## PROPER LOCATION FOR SILOS

Huge Receipts Should Be Placed as Near Animals to Be Fed as Possible to Save Labor.

Siilos should be located close to the animals to be fed from them, according to the Oregon agricultural college plans.

They should not be inside the barn since they take up a good deal of room and may give off offensive odors that will taint the milk.

They would also be inconvenient to fill, and silos should be where they may most readily be refilled.

It requires about a quarter of a ton of ensilage daily to feed twelve cows each forty pounds a day, so that the silage should not have to be moved any farther than is necessary.

## CONSTRUCTION OF PIT SILOS

Builders Must Be Careful About Plastering—Good Sand is of Utmost Importance.

Builders of pit silos should be careful about the cement plastering. Make the plaster of one part good sand and 2 1/2 parts of Portland cement, in two inch thick.

Let the first set slightly before putting on the second. Keep wet for a week. If the earth walls are dry to plaster on, wet them before plastering. Keep the plaster shaded for several days.

## TRAIN UP THE YOUNG TREES

Greenhouse Overseer Points Out Importance of Early Care—Animals Often Do Much Harm

Importance of training young trees so that they will become straight and well proportioned is emphasized by W. R. Layton, greenhouse overseer at the Kansas State Agricultural college. A growing tree in winter may be bent by the weight of ice or snow, and wind blowing from one direction for several days may produce the same result.

Trees of rapid growth are less likely to require careful attention than those which take longer to develop, says Mr. Layton. "Oaks, elms, pines, firs, and apples are among those which usually tend away from erect growth. The maple and cottonwood, trees of quick growth, shoot up straight and tall."

Elm and pine seedlings send out at first fine roots which do not penetrate far into the soil. The maple roots, on the other hand, are more vigorous, and give the tree a firm hold in the soil.

The common method of training a tree is first to drive a stake firmly into the ground beside it, and then to place a strap around both tree and stake, says this authority. Animals often injure trees—particularly apples. As a protection, a wire netting, 12 to 15 inches high, is used to inclose the base of the tree. A trellis-like frame is also made for the protection and training of small trees in parlors. A young tree which has become crooked may be straightened, but a "kink" will remain.

## TIME TO PRUNE GRAPEVINES

Period From November to March Gives Most Satisfactory Results—Prevent Overbearing.

Fall or winter pruning of grapevines in the home garden, as well as on the commercial plantation, may be done at any time during mild weather while the vines are in a dormant condition. In general, the period from November to March gives the most satisfactory results, but the work should in all cases be done at least a week or ten days before the vines are likely to start into growth.

The pruning the first winter after the planting of the vines is determined by the character of the growth made by the plants. If the growth has been short and weak all the wood except the strongest shoot should be removed and this should be cut back to two or three buds. If a strong growth has been made and there is one straight, well-ripened shoot, all other growth should be removed and this cane should be cut back to the height at which it is intended to head the vine. This will concentrate all the force and growth of the plant into the cane which is to become the trunk of the vine. From this only such shoots should



Umbrella Trellis—Four-Foot Post—Vine Pruned.

be allowed to grow as are needed for shaping the vine for the following year, fruiting season. After this framework has been established the fruitbearing part of the plant should be so pruned that it will be removed from year to year and so adjusted to the variety and the soil supply as never to allow the plant to overbear, but at the same time to induce it to bear its full capacity. Under such treatment the body of the plant will gradually become stronger and its fruiting capacity will increase correspondingly.

The manner of renewing the bearing wood of a vine depends in a large measure on the species to which the variety belongs and the use of trellis used for training it.—U. S. Department of Agriculture.

## USE OF LIME-SULPHUR WASH

Dormant Spray May Be Made by Diluting One Gallon of Material in Ten Gallons of Water.

A concentrated lime-sulphur wash for use as a dormant spray may be made by diluting one gallon of concentrated lime-sulphur with ten gallons of water.

The concentrated lime-sulphur is put on the market by many insecticide firms, or may be made at home in accordance with the following formula: Sulphur, 40 pounds; best stone lime, 40 pounds; water, 50 gallons.

## THE KITCHEN CABINET

Life's hard tasks are never sent for us to give up with, they are intended to awaken strength, skill and courage in learning how to master them.

## A FEW DESSERTS.

So many people these days find bran such an addition to the diet that the following recipe will be welcome:

**Bran Pudding**—Add to one-half cupful of bran and the same of whole wheat flour, one-half cupful of chopped, seedless raisins, two tablespoonfuls of sugar, one cupful of milk, one well beaten egg, one tablespoonful of butter, melted, one teaspoonful of lemon rind and one-half teaspoonful of salt. Steam two hours and serve hot with lemon sauce. This is a most healthful dessert.

**Cocoanut Cream Pudding**—Mix well one teaspoonful of flour with two tablespoonfuls of sugar, a fourth of a teaspoonful of salt and a fourth of a cupful of shredded cocoanut. Cook five minutes after it begins to boil, then cool and add a beaten egg and a few drops of vanilla. Pour into custard cups, surround with water and bake until firm. Serve with a fruit sauce.

**Cottage Cheese Pie**—Mix together two cupfuls of cottage cheese, two tablespoonfuls of milk, two well beaten eggs, two tablespoonfuls of sour cream, mix a half teaspoonful of flour, a third of a cupful of sugar, a fourth of a teaspoonful of lemon extract, a fourth of a teaspoonful of salt, and half a cupful of currants, add to the first mixture and pour into a moderately fire plate. Bake in a moderate oven until firm in the center.

**Banana Pie**—Press peeled bananas through a ricer to fill a cup. To this add a half cupful of sugar, two tablespoonfuls of molasses, half a teaspoonful of salt, one beaten egg, one-half a teaspoonful of cinnamon, half a cupful of milk and a third of a cupful of cream. Mix thoroughly and bake until firm in a plate lined with pastry.

If you ever find happiness by hunting for it you will find it like the old lady did her last class, safe on her own nose all the time.—John Burroughs.

Step out from the surging crowd and make yourself a monster.

## GOOD THINGS FOR THE TABLE.

This is an unusual recipe worth trying, especially by those who do not care for the rich ordinary mince-meat.

**Lemon Mince-meat**—Squeeze the juice from four large lemons and place the peel in cold water, bring to a boil and change the water twice.

cooking the peel until tender, then drain and pound to a paste, add four apples chopped, the juice of the lemons, one pound of currants, one and three-fourths cupfuls of sugar, one-half cupful of nutmeats, one teaspoonful of cinnamon, ginger, nutmeg, allspice, cloves, salt and a half cupful of raisins, mix all together with half a cupful of butter and put into a jar.

**Cheese and Spinach Relish**—Take two quarts of cooked spinach, add one tablespoonful of butter and chop fine. Add a cupful of grated cheese, two eggs, beaten, and enough bread crumbs to form into a roll. Bake in a baking dish.

**Sour Roast Beef**—Take a quart of water, two cupfuls of vinegar and salt and pepper to taste; slice into this a few onions and carrots, then add a roast of beef. Allow the meat to soak overnight, then roast as usual. When the meat is half cooked add the vegetables from the brine to baste the meat. When the meat is tender, remove and add a half cupful of sour cream and pour to thicken. Serve hot. This is a delicious old German recipe.

**Nut Strips**—Beat two eggs until light, add a half pound of brown sugar, one cupful of walnut meats. Stir in five tablespoonfuls of flour and a quarter of a teaspoonful of baking powder and a dash of salt. Mix and spread thin on buttered pans. Cut in strips when cold. These are delicious served with afternoon tea or cocoa.

**Raisin Bread**—Take a cupful of brown sugar, a cupful of sour milk, a teaspoonful of soda, a dash of salt, two cupfuls of soft wheat flour, a cupful of raisins chopped. Put into a deep bread pan and bake fifty minutes in a slow oven.

*Heerie Maxwell*

Word From Headquarters. "When, where and how will the war end?" "I don't know," replied the landlord of the Batavia tavern. "However, the young ladies and gents of the senior class of the village academy, several of whom are over sixteen years of age and have been outside of the county a fair while, are going to settle the entire question in a debate to-night. I understand too, that while they are at it they will fix things so there will never be any more wars. So I shall be able to inform you in full tomorrow morning."

## Get the Habit of Drinking Hot Water Before Breakfast

Says we can't look or feel right with the system full of poisons.

Millions of folks bathe internally now instead of loading their system with drugs. "What's an inside bath?" you say. Well, it is guaranteed to perform miracles if you could believe these hot water enthusiasts.

There are vast numbers of men and women who, immediately upon arising in the morning, drink a glass of real hot water with a teaspoonful of limestone phosphate in it. This is a very excellent health measure. It is intended to flush the stomach, liver, kidneys and the thirty feet of intestines of the previous day's waste, sour bile and indigestible material left over in the body which, if not eliminated every day, become food for the millions of bacteria which infest the bowels, the quick result is poisons and toxins which are then absorbed into the blood causing headache, bilious attacks, foul breath, bad taste, colds, stomach trouble, kidney misery, sleeplessness, impure blood and all sorts of ailments.

People who feel good one day and badly the next, but who simply can't get feeling right are urged to obtain a quarter pound of limestone phosphate from any druggist or storekeeper. This will cost very little but is sufficient to make anyone a real crank on the subject of internal sanitation.

Just as soap and hot water act on the skin, cleansing, sweetening and freshening, so limestone phosphate and hot water act on the stomach, liver, kidneys and bowels. It is vastly more important to bathe on the inside than on the outside, because the skin pores do not absorb impurities in the blood, while the bowel pores do.

—Adv.

## Dressed Wife as Widow.

Realizing that he was dying, Karl Kellams, three days before his death, asked his wife to buy a black mourning dress and veil so that he could see her as she would appear at the funeral. To satisfy him, Mrs. Kellams dressed in mourning and stood at his bedside. Kellams had been sick of tuberculosis for some months. He recently returned from Phoenix, Ariz., where he had gone in the hope that the change in climate would benefit him.—Philadelphia Record.

## Little Mistake.

An old gentleman of eighty-four having taken to the city young dandies of about fifteen, the clergyman said to him:

"The font is at the other end of the church."

"What do I want with the font?" said the old gentleman.

"Oh, I beg your pardon," said the cleric, "I thought you had brought this child to be christened."

## Convinced.

"I wasn't able to match that piece of goods for you," said hubby. "I tried six different stores, and they all told me they hadn't anything like that in stock for five years."

"I knew that all the time," said wife. "I just wanted to prove to you that my big dress is hopelessly out of style. You wouldn't believe it when I told you."

## GOOD REPORT

Doctor Proved Value of Postum.

Physicians know that good food and drink, properly selected, are of the utmost importance, not only for the relief of disease but to maintain health even when one is well.

A doctor writes, "I count it a pleasure to say a good word for Postum with which I have been enabled to relieve so many sufferers; and which, with its valued companion, Grape-Nuts, one of the daily blessings."

"Coffee was banished from my own table some time ago and Postum used regularly in its place." (Coffee is injurious to many persons, because it contains the subtle, poisonous drug, caffeine.)

"I frequently find it necessary to instruct patients when they take Postum for the first time to be quite sure that it is properly made according to directions, then it has a clear, scal-brown color and a rich, snappy taste as well as health giving qualities."

The above letter, received over ten years ago, is fully confirmed by a recent letter from the doctor, in which he says:

"It is a pleasure to render a good report covering a product of which I am so enthusiastic a friend."

It is now using in my home, my Postum Cereal in both its forms. And, what is more, I am having it used in the families of several patients in which there are children, and all unite in endorsing the fine qualities of your admirable product."

Name given by Postum Co., Battle Creek, Mich.

Postum comes in two forms: Postum Cereal—the original form—must be well boiled, 15c and 25c pgs.

Instant Postum—a soluble powder—dissolves quickly in a cup of hot water, and, with cream and sugar, makes the delicious beverage instantly. 30c and 50c tin.

Both forms are equally delicious and cost about the same per cup.

"There's a Reason" for Postum.

—sold by Grocers.