Smelser-Seebold Photo, La Salle, Ill.

Those present reading from left to right: R. W. Thompson, Secretary La Salle Commercial Assn.; J. J. Commons, Chicago Portland Cement Co.; Geo. C. Blow, Prest., La Salle Commercial Assn.; H. M. Orr, Prest., Illinois Valley Automobile Assn.; A. H. Hunter, Asst. State Engineer; R. M. Neustadt, merchant, La Salle; Geo. A. Wilson, Prest., La Salle National Bank; Thos. N. Haskins, Atty. for La Salle Co. Highway Commission; Chas. Bulfer, Peru Good Roads Committee; Chas. Nadler, Peru Good Roads Committee; W. T. Bedford, Postmaster, La Salle; E. F. Wagenecht, Prest., Peru Business Men's Assn.; H. Hoerner, Good Roads Committee, Peru Business Men's Assn.; N. W. Duncan, Prest., Marquette Cement Mfg. Co.; N. D. Fraser, Prest., Chicago Portland Cement Co.; John J. Massieon, Mayor of Peru; Thos. F. Doyle, Mayor of La Salle; E. R. Kenney, Inspector; Bert Neustadt, Merchant, La Salle.

# Beginning Work on the LaSalle-Oglesby Concrete Highway.

On July 15th the first batch of concrete was placed on the La Salle-Oglesby highway, doubtless the first concrete road to be built since the new state aid law went into effect. The above picture shows prominent citizens of La Salle, Peru and Oglesby, Illinois, who were present when the concrete work started. This concrete road is but the beginning of many miles that will be built in La Salle County this year. As a direct result of the action of the La Salle County Board of Highway Commissioners in building this road, the State Highway Commission has designated the road connecting with the above road at the southern end and thence to the Starved Rock State Park, as a State road. It is expected that the entire road from the Illinois River to the State Park will be built of concrete before the end of the year. The La Salle-Oglesby concrete road crosses the Illinois River bottom, south of La Salle. It will be inspected by hundreds of engineers, town councils and road builders throughout the State and since this work is in charge of the State Highway Department, it should be of interest and value to Illinois road builders who are planning to take advantage of the new Illinois road law.

To "pull Illinois out of the mud" seems to be the desire of road builders and road users throughout the state at present. Interest in concrete roads was never greater, and within a few years we may expect to have as good roads as are to be found in Wayne County, Michigan, where so many road builders have investigated concrete road construction within the last four years.

Reports from many counties indicate that the state aid law will be taken advantage of at once. The State Highway Commission is assisting the different highway commissioners in planning road work and selecting materials, the Association of American Portland Cement Manufacturers have experts in the field, lecturing, showing stereopticon views of road work in different parts of the country, giving expert advice and in other ways helping Illinois road builders, and judging from the inquiries coming to the State Engineer, there will be hundreds of miles of hard road built in Illinois this year.

## THE HYDRAULIC RAM.

**Simple Mechanical Device For Raising Water by Its Own Power.**

To most people a hydraulic ram is a mystery. As a matter of fact, it is the most simple and efficient mechanical device for raising water by water power. This is probably what makes it seem so mysterious to those who have never seen a ram at work.

Pumping water by hydraulic ram makes a water supply system far superior to any other except a gravity system. In some instances it is even better than gravity in matter of expense when a gravity supply requires a long line of pipe. A windmill must depend on the wind; a gasoline engine means continuous attention and expense of fuel; a hydraulic ram costs nothing to operate, requires no attention, depends upon nothing but the source of supply.

Hydraulic rams are not only adaptable for pumping water for household purposes, but they can be used for delivering large quantities of water for irrigation, town waterworks, railroad tanks, etc. Where the least possible expense must be incurred for pumping water for any of these purposes there is naturally a great demand for rams. This applies particularly to irrigation, as it enables the farmer to raise crops at a minimum cost per acre.

Hydraulic rams can derive the power for operating them from a spring, brook, flowing artesian well or river, and if the ram can be located at such a point that a constant stream of water can be supplied to it through a pipe having an incline or fall of three or more feet in a given distance, the conditions being such that the power water which escapes at the ram can be drained away, it is possible for the ram to deliver a steady stream of water to a point at an elevation thirty times the difference between the levels of the ram and the water supply. This stream of water, once started flowing, will continue without interruption, day and night, winter and summer, requiring no attention or expense except for the renewal of rubber valves on the ram once every year or two. This is a trifling expense, as the valves cost but little.

The efficiency of a ram can be very great reaching, under favorable conditions 80 per cent or more. This means that the ram will pump more water to the same height than any other kind of engine which pumps water by means of water power.

The amount of water that may be pumped per day by such a ram is remarkable. It will pump as much as 250,000 gallons a day. If a delivery of 2,000,000 gallons a day is required a battery of rams can be installed—that is, two or more rams are placed side by side.

Where pneumatic pressure tanks are used instead of gravity tanks, rams will not only supply the water, but also maintain the air pressure up to 100 pounds, as may be desired.—Scientific American.

### The Value of Beeswax.

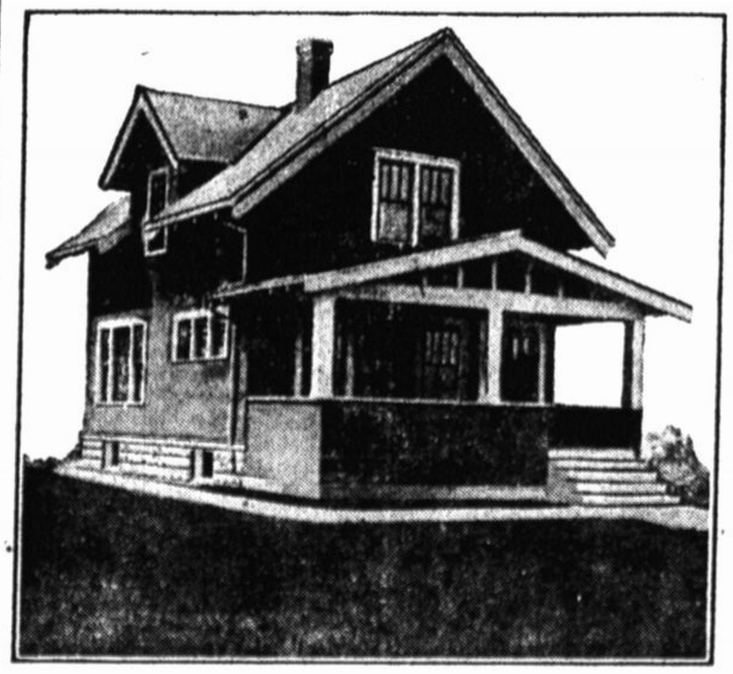
Beeswax is a product peculiar to the special life action of the bee. Wax is not collected from the flowers as wax, but is secreted by special glands situated beneath the wings of the abdomen of the neuter or working bee.

The quality of the wax secreted is proportioned to the honey consumed. Beeswax is a very important product, and in the markets of the world it has a more standard value than the honey.

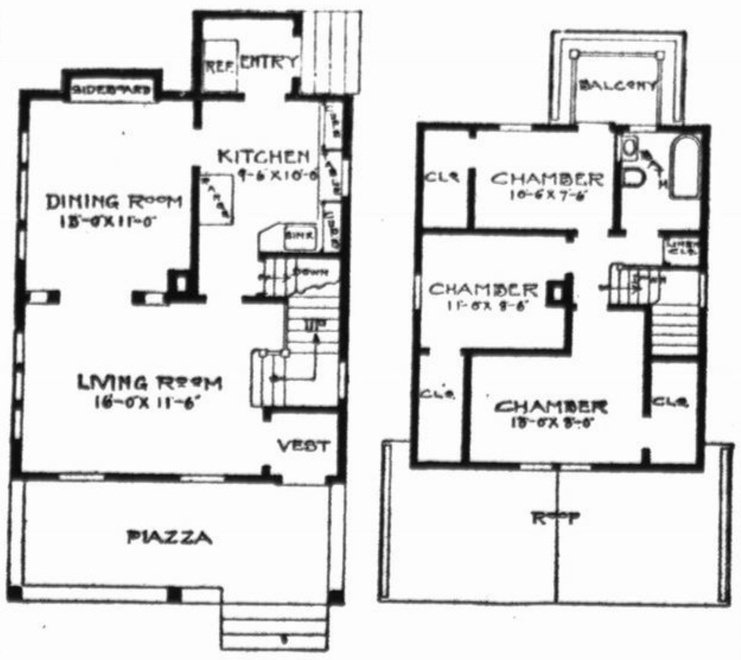
There is no substitute that can take the place of beeswax in the many uses to which it is put in the industrial arts, and when we have a pound of beeswax we know that there is more gold in it to the square inch than there is in an equal amount of honey.—Kansas City Journal.

## STYLISH COTTAGE AT LOW COST.

**Design 752, by Glenn L. Saxton, Architect, Minneapolis, Minn.**



PERSPECTIVE VIEW—FROM A PHOTOGRAPH.




FIRST FLOOR PLAN. SECOND FLOOR PLAN.

In this cottage plan there is a living room across the front, with open stairway at one end and a high pedestaled archway leading into the dining room. The dining room is good sized, with built-in sideboard. The kitchen has built-in cupboards, and the entry has space for the refrigerator. The chimney is so located that the house can be heated with stove heat or a heating plant in basement, just as one desires. Three chambers in the second story, closets, bath and a balcony over one story rear part. There is a full basement. First story, 9 feet; second story, 8 feet. Birch or red oak finish throughout first story, pine to paint in second story. White maple floors. Size, 22 feet deep and 26 feet over the main part. Cost to build, exclusive of heating and plumbing, $1,950.

Upon receipt of $1 the publisher of this paper will supply a copy of Saxton's book of plans, "American Dwellings." It contains 254 up to date designs of cottages, bungalows and residences costing from $1,000 to $6,000.

### The First Anniversary.

The first anniversary of the Fourth of July was celebrated in every American town, hamlet and force or fleet that was able to do so with bonfires, illuminations, regular salutes and individual feux de joie. Oration, prayer and praise prepared the hearts of men for their generally decorous if somewhat noisy and varied demonstrations which made up the general holiday.

### Eight Notch Man Dies In Chair.

Eddyville, Ky.—General May, whose ever ready pistol bore eight notches, was put to death in the electric chair here for the murder of Mrs. Belle Meredith of Clay county. Mrs. Meredith was shot down after May had killed her husband. May, whose Christian name was General, had been a deputy sheriff, and in a fight several years ago he was shot twelve times.

# BACK YARD FARMER

## Interesting Pointers on Gardening for the City Man or Suburbanite.

## WHAT TO PLANT AND WHEN

**Advice by an Expert on Agricultural Matters—Walks and Driveways—Blossoms for Fall—Preparing for Next Year.**

By PROF. JOHN WILLARD BOLTE.

Where the householder is merely seeking a means of getting from his house to some outside point, without wetting the sole of his shoe in damp weather, there is no substitute for a cement walk. It is clean, dry, smooth and practically imperishable, but it is not artistic, no, not even pretty. And lots of us prefer to be artistic even if it is damper.

Cement sidewalks do not harmonize with formal gardens. They are too modern. Neither do they fit into the beautiful or picturesque landscape, because in both they are too regular and mechanical. In fact the best pavement known to man has a hard time pleasing the doctors of curve and perspective. They tell us that there is little sense in going to a lot of trouble to get the lawn, flower beds, garden, shrubs and trees, all parts of a harmonious picture, and then ruin the entire effect by drawing a white chalk mark across the beautiful canvas, in the form of a straight cement walk.

Of course these sentiments would not apply to walks which are much traveled, but where some effort is made to have the home and its surroundings both beautiful and in harmony, the character and course of the private walks and driveways is of great importance, because it is by them that we approach or leave the house, and along these approaches the eye most frequently travels.

If we must have cement walks, let them be modest in their demeanor, their tint a gray, or, best of all, a pale green. The edges snugly joined to the turf, bordered, if you will, by beds of perennials, with clumps of shrubs in the bends, so as to hide the successive views until the full effect is made instantly, upon rounding each bent. This rule applies to roadways as well as walks.

Do not curve a road or walk without some apparent reason. A curve without any excuse is merely a wiggle and it's worse than a straight line—far worse. This does not mean that long lines may not properly be curved, because they should be, but if there is no natural object to curve them around, plant something there, a flower bed, a tree or a clump of bushes. Nature may abhor a vacuum, but she abhors a straight line, too, and all of her curves have some reason.

A brick, tile or flag walk is permissible in a formal garden or landscape, because it is ancient in usage, not because it is natural. In beautiful or picturesque scenes the very best taste in walks is close-cut greensward, high enough to dry off rapidly. Next in good order, and certainly the most popular natural walk, is gravel, round gravel from some old water course or beach.

Gravel is also the best material for the private drive, with the possible exception of crushed limestone. Make the foundation of your gravel walk or driveway firm, with a good crest in the center. Make the first two inches coarse and the next two finer, binding all with a liberal top coating of sand, cinders or fine crushed stone. Roll it with a heavy roller and keep vehicles off when wet. Rake the surface smooth after each rain and keep the weeds out. A good way to kill weeds is to soak them with a solution of one pound arsenate of soda to three gallons of water.

### Blossoms for Fall.

The spring brings its sweet, dainty little flowers, synonymous with love and hope, the summer blazes with brilliant garish colors, and the fall has its own softer tones with which to decorate the pleasant harvest time. Gold, brown, deep red, purple, and yellow have long been the standard fall lines, but there are many other shades that can be enjoyed in the autumn garden.

While they bring a breath of sadness with them, still the time of the golden rod and the purple aster and the black-eyed Susan is perhaps the dearest of all to those who dwell amidst natural scenes.

Why not have the same beautiful wild wood colors in our fall gardens? Why not bring the harvest spirit into your own life by growing the harvest flowers about your home.

In the early autumn days, after the riotous summer blooms have gone, we can fill their places with cosmos, salvias and dahlias. Asters with their shades of blue and purple, great blotches of warm colored marigolds, calendulas in a great many shades and forms, annual pinks, breathing of colonial days, and the wonderful hardy chrysanthemums. Many others might be mentioned, as the fall list is very respectably long, but these few will do well under almost any conditions and should be very widely grown.

The scarlet Salvia is an ideal flower for edging, long rows, etc. It blossoms continually until frost cuts it down, the long spike like blossoms having the most brilliant red color of any of the fall flowers, except the California poppy.

Salvias can be grown from seed, but the easier way is to buy the potted plants from a florist and set them out in beds. The Bonfire variety is one of the newer ones and it is more compact and showy than the old reliable Salvia Splendens. Put the Salvias in the tulip beds about corn planting time.

The Dahlia offers the flower lover more variety than any of the others, possibly, and we know one man down in Rhode Island who claims to have over 2,500 distinct varieties of Dahlias in his garden. It is hard to recommend the best in such a vast wealth of material and we will not attempt it. Here are some of the good ones: White—Pius X. and Riesen Edelweiss. Pink—Kriemhilde and Countess of Lonsdale. Scarlet—Standard Bearer and Geisha. Dark Red—Roland von Berlin and J. H. Jackson.

Take the dahlia roots up late in the fall and winter them in the cellar. Separate the clumps and plant, three feet apart, in rich, well drained earth the next spring. Do not fail to separate the clumps and leave only three or four shoots on each clump. Stake the plants up as soon as necessary, as they blow down easily. Be sure that the soil is well drained, above all else.

The double Cosmos blooms in late summer and may better be started indoors or secured from a florist. Lady Lenox is a wonderful new sort.

In the Asters, plant Comet, Ostrich Feather and Semple's Late Branching, for excellent results.

### Preparation of the Garden for Next Year.

Here are a few good plans to put your garden in the best shape for next year's crops. After the various vegetables have ripened and the plants died, the garden should be plowed. If you are keeping chickens, it would be well to harrow and sow to vetch or rape, either of which will give you a good crop of green food for the chickens. This can be planted as late as August 15. Sow it thickly and give it plenty of water. This crop will make a good green feed for the chickens until it gets too dry and then it can be cured and made into a water mash as needed. This makes a very good substitute for the green feed during winter months.

If you have no chickens, and therefore have no use for a green feed, we suggest that you plant the garden to clover. Clover belongs to the leguminous class of plants, which put nitrogen back into the soil. Let this crop grow until just before frost, then plow it under. This will enrich the soil and lighten it.

In any event, the garden should be plowed in the fall, particularly where the soil is heavy. This will permit the frost to break up and decompose the soil during the winter months, making the plant foods more available in the spring. Before planting, the entire garden should be gone over with a disk harrow.

It will be still better if you will cover the ground with a fertilizer before plowing. There is nothing better for this perhaps than good sod, which accounts for better crops the first year than later on. Stable manure is good.

If the soil is very heavy and sour, put lime on, in the form of air slaked lime or ground raw lime stone.

## MUCH BENEFIT BY SPRAYING

**Reasons Why Lime-Sulphur Is Best Solution to Use on Apple Trees—Study for Grower.**

The growing of apples is an enormous industry which is constantly expanding. This is due largely to the fact that of all fruit the apple is in most steady demand, and is a very reliable crop. The profits on a well conducted apple ranch or orchard are fairly large, the labor entailed in caring for the trees and marketing the crop is not excessive, and there is scarcely any section of the country in which some varieties of apples will not thrive.

Spraying is the one operation above every other which determines the market value of apples, and yet in many instances it receives the least attention of all the orchard work, according to a Farm and Home expert. The matter of spraying is one which must be given careful attention and study by each grower, for the reason that the practice giving the very best results in one section may be of indifferent value in another.

For instance, the Ben Davis is so seriously russeted by application of bordeaux mixture that, as a rule, naturally fine fruit of this variety will be rendered second class if this spray is used.

Lime-sulphur solution is apparently as effective as bordeaux mixture in the control of apple scab, and will control leaf spot and other minor troubles. In sections where spraying for bitter rot is required the lime-sulphur treatment for scab and leaf spot could be followed by applications of bordeaux mixture for bitter rot and apple blotch, as it has not yet been determined that the lime-sulphur spray will control these diseases. Arsenate of lead is unquestionably the poison to use with the lime-sulphur mixtures.

### Care In Planting Trees.

Too much care cannot be given the operation of planting trees. No matter how well the land is prepared, nor what classes of trees one has, if they are not well planted the best results will not be secured.

## MIXING CONCRETE.

**Care Must Be Taken to Use Only Clean Sand and Gravel.**

Concrete, a manufactured stone, is made by mixing together portland cement, sand and stone or gravel, writes J. P. Peck in the Chicago Tribune. Various proportions of each are used, depending upon the use to which the concrete is put. About half an hour after mixing the mass begins to stiffen until, in from half a day or a day, it becomes so hard that it cannot be dented with the hand. By a month it is hard as stone—indeed, harder than most stones.

There are a few precautions that must be observed in mixing concrete, precautions whose neglect may mean the loss of an entire piece of work, to say nothing of the time and labor involved.

Keep the cement in a dry place.

Do not use fine sand.

If a large quantity of fine sand is handy obtain a coarse sand and mix the two together in equal parts. This mixture is as good as coarse sand alone.

The sand should be clean. The presence of dirt is easily ascertained by filling a fruit jar with sand to a depth of four inches and adding water until it is within an inch of the top. After the jar has been well shaken the contents should be allowed to settle for a couple of hours. The sand will sink to the bottom, but the mud will form a distinct layer on top of the sand.

Great care should be used in selecting the "coarse aggregate" (stone or gravel). The pebbles should be closely inspected to see that there is no clay on their surface. A layer of clay prevents the "binding" of the cement.

Water for concrete should be clean and free from strong acids or alkalies.

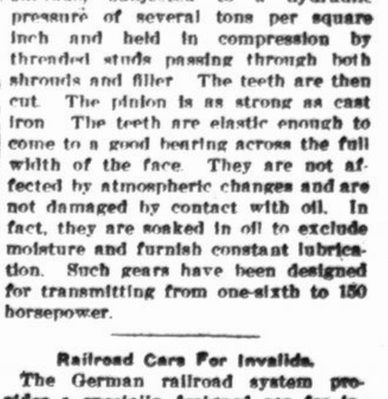
That mixture in which all spaces (called "voids") between the stone or gravel are filled with cement is the ideal mixture. This mixture is rarely attained, as the voids in each load of gravel or sand vary slightly, and in order to be absolutely safe it is well to use a little more cement than will just fill the voids.

## HANDY LAWN SWEEPER.

**Cutters on Old Mower Replaced by Revolving Brushes.**

A correspondent of Popular Mechanics tells how an old lawn mower was easily converted into a lawn sweeper that served to pick up leaves and cut grass in a satisfactory manner.

The sweeper was quickly constructed with little expense by removing the revolving blades and substituting a brush. The center part for holding the



LAWN SWEEPING MACHINE.

bristles of the brush consisted of two pieces of wood cut to the length of the old blades and then grooved to fit over the mower axle. They were fastened together on the axle with glue and nails, after which a hole was drilled through the wood and axle and a peg driven in to prevent the finished brush from turning on the metal axle.

The tufts of bristles were taken from a couple of old brushes, three-sixteenths inch holes, nine-sixteenths inch deep, were bored into the four sides of the wood axle three-fourths inch apart and the tufts well glued and inserted in them, then further secured with wood pegs or wedges. The ends of the bristles should just clear the knife on the mower when they are revolving. In running this machine over the lawn the brush will throw the leaves into the apron at the rear.

### Cloth Pinions For Gears.

In place of rawhide or paper for noiseless, shock absorbing gearing, cloth or cotton fiber pinions are now being used with great satisfaction. The cloth is piled up between steel shrouds, subjected to a hydraulic pressure of several tons per square inch and held in compression by threaded studs passing through both shrouds and filler. The teeth are then cut. The pinion is as strong as cast iron. The teeth are elastic enough to come to a good bearing across the full width of the face. They are not affected by atmospheric changes and are not damaged by contact with oil. In fact, they are soaked in oil to exclude moisture and furnish constant lubrication. Such gears have been designed for transmitting from one-sixth to 150 horsepower.

### Railroad Cars For Invalids.

The German railroad system provides a specially designed car for invalids and cripples who can afford to use it. Every possible convenience for the sick is contained in the car, and a compartment, opening on the level of the station platform with a double door, so that a stretcher can be carried in without difficulty, is set apart for the invalid and attendants. The other section of the car contains a kitchen and a handsomely upholstered compartment for members of the family and accompanying friends.

### Revising the Geographies.

Recent explorations around the arctic and antarctic poles make necessary a revision of all geographies. These say that water covers two-thirds of the earth's surface, land being only one-third. The latest figures are: Land, three-sevenths; water, four-sevenths.