

## GOOD DRAINAGE MEANS GOOD ROADS

With an average of 27,000 tons of water falling in the form of rain on each mile of public road in the United States annually, it is scarcely to be marvelled at that the 10 commandments of the road builder can be summed up succinctly in the word "drainage."

The saying has truth for a basis, as good drainage is the primary requisite for all roads. Even in sand roads this holds true, for there "good drainage" means such as will safely remove the storm water without erosion or gullying and still retain the surface moisture.

To secure good drainage one must take into consideration both the surface water and the underground water. The surface water must be removed quickly and completely without subjecting the road to excessive scour or erosion. For this reason, the center of the road should be raised and the slope towards the side ditches should be from one-half to one inch to each foot distance, or so that the water will run freely to the side ditches and not flow down the road or remain in puddles on the roadway.

The side ditches should be of ample size to care for the severest storms with a fall of not less than six inches to each 100 feet. Frequent and ample cross drains should be constructed and every opportunity taken to get the water away from the road as quickly as possible.

Any road along which you see water standing in the side ditches or on which puddles of water have collected or which has been badly gullied and eroded by the rains has poor drainage and is in need of immediate attention. In fact earth roads nearly always require a little attention after each rain.

The split-log drag is essentially a tool to maintain good drainage on our earth roads, and should be used after each rain. On a heavy clay or gumbo soil the drag when properly used tends to puddle the road surface, keep it free from ruts, dents and hard, thus securing the best surface drainage possible.

But in many places the underground water is near the surface and must be removed before a good road will be possible. This means that some form of sub-drainage must be resorted to, usually tile drains, of clay or concrete.

Water from whatever source must be gotten rid of effectively, for water plus clay or gumbo invariably equals mud when mixed in spring and summer. Water becomes ice in winter and as water in freezing expands one-eighth its volume, the road heaves out of shape and when the ice melts the road disappears beneath the rising tide of mud constantly fed by rains, melting snows and underground springs.

In seepy and boggy places the sub-drainage in order to be fully effective should lower the water level to not less than three feet below the road surface. If tiles are used they should be carefully laid, true to grade. Most failures in tile drainage can be attributed to carelessness in laying, or too flat grade. Tile less than four inches in diameter should rarely be used, nor should a grade of less than six inches to the 100 feet be used unless absolutely necessary.

In a very dense soil, it is always advisable to cover the time to at least a

### DO YOU GET UP

#### WITH A LAME BACK?

Kidney Trouble Makes You Miserable.

Almost everybody who reads the newspapers is sure to know of the wonderful cures made by Dr. Kilmer's Swamp-Root, the great kidney, liver and bladder remedy.

It is the great medical triumph of the nineteenth century; discovered after years of scientific research by Dr. Kilmer, the eminent kidney and bladder specialist, and is wonderfully successful in promptly curing lame back, uric acid, catarrh of the bladder and Bright's Disease, which is the worst form of kidney trouble.

Dr. Kilmer's Swamp-Root is not recommended for everything but if you have kidney, liver or bladder trouble it will be found just the remedy you need. It has been tested in so many ways, in hospital, work and in private practice, and has proved so successful in every case that a special arrangement has been made by which all readers of this paper, who have not already tried it, may have a sample bottle sent free by mail, also a book telling more about Swamp-Root, and how to find out if you have kidney or bladder trouble. When writing mention reading this generous offer in this paper and send your address to Dr. Kilmer & Co., Binghamton, N. Y. The regular fifty-cent and one-dollar size bottles are sold by all good druggists. Don't make any mistake, but remember the name, Swamp-Root, Dr. Kilmer's Swamp-Root, and the address, Binghamton, N. Y., on every bottle.



depth of six to 12 inches with coarse sand or fine gravel. Care should always be taken to secure a free outlet for the drains and to protect the outlet with a concrete bulkhead or catch-basin, which can always be kept clean and the outlet free.

The kind of tile to be used depends on local conditions. Concrete tile if properly made are equally as good as clay tile. Which kind to use is entirely a local question of dollars and cents. If concrete tile can be made more cheaply than clay tile can be had, use concrete; if not, use clay tile.

One great advantage of the concrete tile is that they can be easily made by the local users at or near the place where they are to be placed, so that the freight charges are dispensed with as well as the large breakage losses due to handling. Placed in the ground, both are durable. If concrete is used, great care should be taken to see that a good grade of Portland cement is selected and that the drains are properly constructed. The impression, which prevails to some extent, that tile disintegrates is erroneous.

A bulletin is now in course of preparation by the United States office of public roads telling how to make concrete drains. This bulletin will treat the subject fully, explaining carefully every point that may arise in making drain pipes and culverts.

#### A Paying Investment.

Mr. John White of 38 Highland avenue, Houlton, Maine, says: "Have been troubled with a cough every winter and spring. Last winter I tried many advertised remedies, but the 50c bottle of Dr. King's New Discovery, before that was half gone, the cough was all gone. This winter the same happy result has followed; a few doses once more banished the annual cough. I am now convinced that Dr. King's New Discovery is the best of all cough and lung remedies." Sold under guarantee at Tallman & Co.'s and Pendleton Drug Co; 50c and \$1. Trial bottle free.

#### NEW YORK HIPPODROME'S BIGGEST SHOW.

The New York Hippodrome opens its season Saturday evening, September 5, with entirely new productions and these the largest ever made in the great playhouse. Since the closing of the house in May, Messrs. Shubert and Anderson have had the staff and the whole mechanical force at work on the show for this season, which they promise will eclipse anything ever done in this country. The policy has been for bigger things in every direction and when one tries to do bigger things than have been done at the Hippodrome, it reaches the colossal. This season's presentation will be in 15 great scenes and a feature of each will be that the effect produced will not be stage realism, but the real, animate moving thing itself. That is why the organization starts off with a thousand people and a hundred horses, to say nothing of the circus.

"Sporting Days," a spectacular melodrama with music, will open the bill. With an interesting story, it shows in its consecutive scenes real sporting events. The first scene will open on a college campus, with a baseball game in progress. This will be played by picked nines, who throughout the summer have been coached by John J. McGraw, the doughty captain of the New York Giants. Following the ball game, the visitors who have occupied the grandstands will be invited to a circus performance. And here is where a real hippodrome novelty will occur. The circus caravan will drive on the stage, band wagons, pole wagons, cages and other vehicles carrying paraphernalia, just as we all saw the circus come to town when we were boys. The tent will then be raised in full view of the audience. Beneath this the novelty circus will take place. For the arena features this season, the management will open with 10 European acts never before seen in this country.

From this scene, "Sporting Days" will change to a boat house on the Hudson, with crews and coaches making ready for the race. The boat race will follow, in which two eight-oar shells will contest the full course to an exciting finish. Another chapter of "Sporting Days" and this the paddock at Saratoga. The stage will be filled with horses, owners, trainers and jockeys. A change of scene and it will be the race for the Saratoga cup, in which 10 thoroughbreds will make a dash for the winning wire. Not since the Hippodrome was opened have so many sensational effects been introduced.

The ballet for the season of 1908-09 dances its way into the land of birds. This is a ballet divertissement the Hippodrome management has

long desired to present. It has been completed and is the most gorgeous ballet costuming this country has ever known. Alfredo Edal, the famous Parisian artist, has spent months on the designs which are most unique in conception and rich in colors. The scenes for the ballet will be picturesque, as they will show a forest on the edge of the Hartz mountains, the home of the canary.

The concluding spectacle will be the most stupendous mechanical undertaking the Hippodrome management has ever attempted. "The Battle in the Skies" is the spectacle, and its big scene will be a battle in the clouds between armed airships, concluding with the destruction of the city below by a withering fire of radium. The period shown will be 1950 and every imaginative invention of that sure to be progressive time will be seen. Ten airships will float over the big stage, which will show what kind of fortifications the future will have to bring forth to meet the onslaughts of aerial attacks. The destruction of the city will be followed by an impressive view of the open sea, a giant tidal wave having rushed in over the smouldering ruins. The concluding scene will be the Golden Gardens, en fete, with a grand apotheosis of victory at the finals.

The productions for the Hippodrome this season are staged by R. H. Burnside, the general stage director, who is also the author of the two spectacles and ballet of the birds, "The Battle in the Skies" is the invention of Arthur Voeglin the scenic artist of the Hippodrome. Manuel Klein has written the score, which is full of characteristically effective music and songs set to thrilling melodies.

Kodol will, without doubt, make your stomach strong and will almost instantly relieve you of all the symptoms of indigestion. Get a bottle of it today. It is sold here by Tallman & Co.

#### Dog and Robber Mix.

New York, Sept. 3.—Louis Wittner of Brooklyn was stripped of his clothes by a fierce bulldog early yesterday morning while trying to escape from a store at Fair Ground, L. I., which he and a companion had just broken into, says the American. After tearing off his clothes, the dog proceeded to chew up the young burglar. The latter considers he has sustained more injury than the store-keeper.

Being out of tobacco, Louis and his companion, whose name, he says, is George, broke into the confectionery store of John Krpf. They secured a small sum of money and some cigars. After lighting a couple of the cigars, they were just leaving the building when Watchman Phillip Washowski and his faithful dog, Boss, hove in sight. Washowski opened fire and chased "George." At the same time he called to his dog:

"Boss, take care of that other fellow."

Boss did. After the watchman had chased his man a mile and lost him he returned to find Boss chewing on Louis' leg.

"For God's sake take away this beast. It's eating me alive," wailed the burglar.

But Washowski took Louis away to be locked up.

#### A Sure-Enough Knocker.

J. C. Goodwin, of Reidsville, N. C., says: "Bucklen's Arnica Salve is a sure-enough knocker for ulcers. A bad one came on my leg last summer, but that wonderful salve knocked it out in a few rounds. Not even a scar remained." Guaranteed for piles, sores, burns, etc. 25c at Tallman & Co.'s and Pendleton Drug Co.

#### Maternity Ward.

Opened at St. Anthony's hospital—a maternity ward. Ward charges, \$1.00 per day. Private room charges, range from \$2 up per day.

If you see it in the East Oregonian, it's so.

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