The Great Tunkhannock Viaduct on the Delaware, Lackawanna and Western Railroad, Half a Mile Long and 240 Feet High.

OUTLAY OF \$12,000,000 ON LACKA-WANNA VIADUCT.

Materially Reduces the Route Between Considered a Triumph of Engineering Skill,

The new "cut-off" of the Lackawanna railroad, between Clark's Summit and Hallstead, Pa., by which the distance between New York and Buffalo is reduced 3.6 miles, was formally dedicated a short time ago.

The Scranton-Binghamton cut-off is 39.6 miles long. The Lackawanna has always been the shortest route between New York and Buffalo and the opening of the new double-track road reduces the distance to 396 miles.

The work of moving mountains and filling valleys in order to shorten the route and cut down grades cost approximately \$12,000,000. By taking a short cut from Clark's Summit, seven miles west of Scranton, to Hallstead, 14 miles east of Binghamton, N. Y., a maximum grade of 1.23 per cent was out to .68 per cent. Formerly the curvature was 3,970 degrees. Now it amounts to only 1,570 degrees.

Time, however, means money in the operation of railroads and the "cut-off" means the reduction of 20 minutes in the running of each passenger train between New York and Buffalo. A saying of one hour in time is made in each freight train passing over the division. Freight trains that required five lemotives on the steep grades be moved at the same speed th two locomotives.

The big feature of the "cut-off" the Tunkhannock viaduct crossing the valley of Tunkhannock creek near the village of Nicholson, Pa. It is a reenforced concrete bridge connecting mountain with mountain. It is half a mile long and 240 feet high, or more than 100 feet higher than the Brooklyn bridge. It consists of ten spans of 180 feet each and two spans of 100 feet each. The mammoth viaduct contains 4,509,000 cubic feet of concrete and 2,280,000 pounds of re-enforcing steel. Parapet walls three feet thick rise above the tracks to a height of four feet, insuring safetly without cutting off the wonderful view from the

If the Flatiron building were extended up Broadway from Twentythird to Twenty-second street the structure would take up about the

same space as the viaduct. The Martin creek viaduct on the "cut-off" is 1,600 feet long and is 150 feet above the bed of the creek. Were it not for its bigger brother, the Tunkhannock, it would be the biggest concrete viaduct in the world.

The entire work of building the "cutoft" was planned and executed by George L. Ray. F. L. Wheaton was chief engineer of construction in immediate charge of the work. The Tunkhannock viaduct was built under the personal supervision of F. M. Talbot.

Tries Woman in Her Cell.

"I look a sight. No, I will not appear in court in this condition. The judge will have to come down here if he wants to see me."

That was the dictum of Pauline Miller, a prisoner in police headquarters on the charge of intoxication.

Prosecutor George Folk and the court cell, where the judge heard the case, "Th give you costs and 30 days at the workhouse to straighten you up," said the judge.—Cleveland Plain Dealer.

Well Advertised. "Mary had a little lamb," began the

"I once knew a woman who owned 20,000 head of live stock," interposed the other fellow. "And yet the great cattle queen never got half the advertising that Mary received through the ownership of one lamb."-Louis lowed by addresses by railroad offiville Courier-Journal.

Will Cost Much Money.

Mix per cent of the line of a railroad eing built in Switzerland will be over es and 13.5 per cent through tun-

Differ as to Earth's Age. ntists differ greatly as to the stha aga, estimates varying from 19,000 to 150,000,000 years. One the first estimates was that of John they are feaux. They flatter your by their known seasons of ripening; d rock his assertion that



American Who Accomplished Wonders in the Internal Development of Chinese Empire.

George Bronson Rea, the American engineer and journalist, who has been awarded the grand prize for the best program for a national system of raffways by the Chinese government, is not a railroad man himself, despite the distinct railroad flavor of his name. He is the publisher of the Far Eastern Review, and has made what amounts to a lifelong study of the peculiar economic, social, and physical conditions prevailing in China, which affect the problem of transportation between the widely separated parts of that great country. He was one of the first to realize the importance of an adequate solution of the problems involved, and the measure of his integrity, in the minds of the Chinese, may be judged from the fact that although he was the right-hand man of Dr. Sun Yat-Sen, after Sun was exiled for revolutionary activities by his successor as president of the Chinese republic, Yuan Shi-Kai, Yuan insisted upon retaining Mr. Rea as technical secretary of the ministry of commupications at Peking.

Men who have been acquainted with Mr. Rea's career say that he won the confidence of the Chinese by his command of his favorite subject and the steadiness of his efforts in working for a greater measure of fair play for China in the financial and other agreements with American and European capitalists and builders, as well as by his strict insistence upon adherence to the letter of the "open-door policy."

In other words, they say, Rea has not fought the fight of the Westerners, but of the Chinese. And the Chinese have rewarded him by giving him honors and confidence beyond those accorded any other American since the commission to Anson Burlingame, to whom was entrusted forty-eight years ago, the adjusting of China's future relation with the western world.

Turkish Greeks.

The Turks Maye definite names for the Greeks who inhabit Ottoman ter ritory and for those who are their own masters. The latter are Yunan and their country Yunanistan-names derived from "Ionia"; while the Greeks and Turks are Rum. By ori gin this is simply "Romans," and is an inheritance from the Byzantine days, when the inhabitants of Constantinopie, the new Rome, were called Romaiot, while the provincials were known as Helladikol. "Rum" was the conquering Turks' name for the Byzantine empire. It survives in Rumelia, while the popular Greek language of the present day is still known as Romaic. But every Greek, in Greece or in Turkey, calls himself a Hellene.

Thermit.

Thermit, the burning fluid which the Zeppelin raiders drop on English towns, has other uses than that of destruction. When the fluid strikes an object, no matter what its fusibility, the latter yields to the burning thermit. It is used in foundries for welding. Two objects of steel may be united with it in a few moments. As much as 3,000 degrees C. can be generated by use of it.

The Metropolitan Street Railway company of New York in welding its rails employs the burning fluid. So Chief Justice W. H. McGannon, form is fastened about the two ends growing. of the rails where they are to be cierks made their way to Pauline's joined. Then the constituent parts of thermit are mixed in a crucible and poured into the form. Thermit is used also in casting where high temperature is needed.

> Erle R. R. Started 80 Years Ago. Residents of Deposit, N. Y., joined with officials of the Erie railroad in celebrating the eightieth anniversary of the beginning of the building of the road. The first spadeful of earth in the construction of the Erie was turned here 80 years ago. Houses were decorated and there was a parade, fol-

Long Railroad Tunnel Planned. The Russian government plans the longest railroad tunnel in the world, with a length of 15 miles, to save an \$15-mile detour.

Flattering Beaux. Girls, don't listen to beaux; for while as friends they always peaux, you will find in reality who in 1860 based on a study eyes, mouth and neaux, and sing your and, second, by the case with which praise from head to teaux. They take | the stem parts from the branch when you to balls, parties and sheaux, and the fruit is slightly lifted. Most pease are adopts at concealing their weaux

-although as fickle as the wind that



CONTROL THE PEACH BORERS

Thick, Heavy Coating of Asphaltum Serves to Exclude Insects-Material is Applied Warm.

In a bulletin of the California sta tion E. L. Morris calls attention to the use of hard asphaltum, grades "C" and "D," for the control of the peach tree borer. This material was applied early in the spring to badly infested trees from which the borers had been dug.

It was found that a thick, heavy coating prevented both the issuance and the entrance of about 95 per cent to 98 per cent of the insects, the degree of efficiency depending upon the thoroughness of the application. phaltum does not penetrate, crack, deteriorate or bind the tree, since it yields to the slightest pressure. Four years of experimenting have not shown the least injury.

The material is applied warm with a



Female Beetle Placing an Egg in Tree Below Surface of Ground,

inches above the ground. It is easier to apply two or more coatings than to try to put on more at one time than will adhere firmly. The first coating will harden very quickly and the second can be applied without loss of time. Two coatings are generally sufficient unless the bark is very rough. But in any case a thick, uniform covering is absolutely necessary for the best results.

Borers are seldom uniformly distributed over an orchard. Small blocks of trees here and there may be badly infested, and the most of the orchard comparatively free from the past. In such cases it is not necessary to treat all of the trees with asphaltum, but it is necessary to examine them carefully, for in no other way can the true conditions be known.

A convenient way to handle the asphaltum is to mount an iron kettle on the running gear of an orchard truck and suspend beneath it a sheet iron apron as a fire box. Keep hard asphaltum in the kettle all the time, so that the melted asphaltum will not get too hot to carry in small containers, and apply directly to the trees.

GERMS CAUSE APPLE BLIGHT

Only Known Way of Control of Disease is to Cut Out Affected Parts-Job Tedious.

Blight of pear and apple trees is caused by a very minute germ which works inside the bark and out of reach of any spray material that may be applied. It is spread from tree to tree by insects and gets into the trees through the blossoms. Here it is deposited by bees and other insects which visit the blossoms, and as conditions are favorable for the development of the germs, they pass from the blossoms through the stems of the flowers into the twig and then through

the rest of the tree. To control blight by cutting out the affected parts is a tedious job, but it is the only way known at this time for controlling it. Whoever will discover a better way than this will be a benefactor of humanity and do a wonderful work for the upbuilding of fruit

PROPER SITES FOR ORCHARDS

Fact Often Overlooked That Cold Air Settles to Lower Levels-Frost Does Much Damage,

It is a well recognized fact, though one too often overlooked in selecting sites for orchards, that cold air settles to the lower levels. For this reason it is often colder at the lower elevations than it is at higher points in the same locality. This is what is meant by "atmospheric drainage." The occurrence of frost in low places when there is none on elevated areas is thus explained. For the same reason peach buds are often winterkilled or the blossoms are injured by frost in the spring in low places when nearby orchards on higher elevations are injured much less, or even escape entirely.

Rigening Pears. Pears are best when ripened in doors instead of on the trees. The are marketed in a green, but mature



Self-Feeders for Dry Feed; Hopper for Oyster Shells and Watering Device.

the litter, or as a change from the

others, it will of course not be neces-

The small potatoes and the potato-

parings and trimmings from other veg-

boiled, salted and peppered, as for the

table, and a little bran and cornmeal

mixture will not be sloppy. This

makes a good, and also a very inex-

pensive mash feed. With it may be

Beef bones and scraps should be run

through a bone cutter, or be chopped

up by hand into small pieces, before

If these cheap feeds are handled

at night to be of the high-priced

on these other things, they will not

They should have a good feed

grain, mostly corn for their supper, in

ply bodily heat during the cold

By following these suggestions, the

hens can be almost entirely kept on

the waste products of the farm, and

If properly housed and given plent;

well on this bill of fare, and we can

rejoice over a good supply of eggs

Skim milk costs really nothing

mixed the meat scraps.

eat so much of it then.

weather.

nearly all profit.

etables used in the house can

(By L. M. BENNINGTON.) All kinds of grain, both whole and ground, are so high in price that it will pay us to study how to feed the hens as cheaply as possible and still secure good results.

Bran is a heavy expense, and the amount used can be greatly lessened by feeding cut clover, or cowpea hay. These contain the same elements as wheat bran and are very palatable for the hens, when steamed.

Cut or break the hay into small pieces, pack into a tub or bucket and pour over it all the boiling water ft will absorb, then cover closely and let brush from five inches below to five stand thirty or forty minutes before feeding. In the winter when the hens cannot get green grass they relish this giving to the hens.

Sprouted grains are another cheap the farms, and if the hens have all of food. This was sold a few years ago it they will drink, they will not eat as a poultry "secret" of feed at 15 so much other food. cents a bushel. Oats are generally used for this, although wheat, rye and right, it will leave only the last feed other grains are as good.

The grain should be soaked for 24 grains, and if well fed during the days hours, or even 36 hours, in warm water, when spread in shallow boxes and kept in a warm place. Keep moist by sprinkling two or three times a day with warm water. Feed when the order to keep them healthy and supaprouts are about two inches long.

The hens will eat grains and sprouts both, and by the process of sprouting the amount of feed is greatly increased without increasing the cost.

Sunflower seeds, if raised in the odd | what is received for the eggs will be corners where nothing else will grow to advantage, really cost us nothing. Hang the heads up where the hens of warm water to drink, they will lay will have to work a little to get them, or scatter the seeds in the litter. If these seeds are fed mixed with when winter is here and the price

VALUABLE FEED FOR LAYERS | WAY OF

the other grains that are scattered in | goes soaring.

Missouri Agricultural College Expert Recommends Glying Hens Sour Milk in Their Rations.

CBy H. L. KEMPSTER, Professor o Poultry Husbandry of the Missouri College of Agriculture.)

Milk or meat in the ration ma make all the difference between profit and loss. We know from our tests at the experiment station and from the

experience of poultry men everywhere. We got only 945 eggs from a pen of bens that ate no animal food, while another pen of hens, no better in any way, but fed sour milk, laid 1,783. Those fed beef scrap laid 1,802 eggs.

A Good Sour Milk Ration. Corn 4 parts.

Wheat, 2 parts. Bran middlings, 1 part. Cornmeal, 1 part. Sour milk separately. Give 100 hens 214 gallons of milk and from 19 to 25 pounds of other food a day.

While this is a higher record than el ther of the others, the sour milk is so much cheaper and easier to get on

At 20 cents a dozen, the eggs from the hens fed sour milk brought \$29.71 and those from the hens fed beef scrap, \$30,03. The difference wouldn't begin to pay for the extra cost and trouble of boof scrap.

The big thing to remember is that the hens fed no animal food brought little more than half as much egg money. Theory and experience both say 'Feed the laying hen sour milk as part of her ration."

Bones Are Good Investment.

A good investment is 100 pounds of bones bought at the market in town. They sell for a cent or a cent and a half a pound. They can be chopped so that the hens can get hold of the pieces, and they will do the rest. Blood meal could be fed in small quantities to satisfy the chicken appetite.

Shipping Live Poultry. When shipping live poultry to market, be sure it is not crowded in the coops, for stock that suffers en route will lose considerable weight.

WINTER QUARTERS FOR HENS | aration.

Make Sure Houses Are Free From Vermin and Direase Germs by Thorough Cleaning and Spraying.

Are you sure the winter quarters of the layers and treeders are free from lice and disease germa? Better make doubly sure by cleaning all masure, rubbish, dust, and litter out of the houses, then spray the walls, celling, floor, roosts and nest boxes with whitewash made thin and strained so that it will spray readily. This formula (government recipe) is one of the

1 Sixty-two pounds (one bushel) quicklime, slake with 12 gallons hot

one pound sulphate of sinc dissolved cured green and lawn city in two gallons of boiling water.

2. Two gallons skimmed milk. Pour 2 into 1, then add the milk (2) Dirty Water Pan le Surest Way e Creating Trouble Among Members of Any Flock.

How often do you clean up the water pans in your henhouses? You ought to clean them every day. For a dirty water pan is the surest way of spreading disease throughout your

The best way of handling water in the poultry house is to keep it in a cheap, flat washbasin that can be casily cleaned and refilled. It doesn't be more than \$50. Larger horses These are all him pay to bother with patent water tanks. You will have to fill them just as often as the basins, and they are harder

Place the open basin on a box some eight or ten inches high and perhaps eighteen inches square, and make a runway for it. This keeps it from filling up with dirt and straw from the floor, and the heas do not climb into it in drinking.

Then put the box and basin in sunny corner of the house away from the roosts and nests, so that no dirt can fall into it from above.

Clean it and refill it with clean fresh water every day and you will have put the disease germs to flight

indefinitely.-Wisconsin Station. SHIP EGGS LONG DISTANCES

Good Results Can Be Secured by Using Excelsior for Packing-Joiting Causes Trouble.

If hatching eggs are carefully packed in a basket with a good cushion of excelsior in the bottom, they will carry great distances and give good results. It must not be expected, however, that they will give as large a percentage of hatch as might be the case nearer home.

It is the joiting eggs are apt to get by transportation by raff, that is likely to weaken a strong germ or kill a weak one. For that reason they should be well packed in excelsior. Excelsior is to be preferred to any other material, as it is of a springy nature; and baskets are better than boxes, for the reason that being more convenient to handle, raffroad employees are naturally more careful with them.

Protection for Eggs. When taking eggs to market they should be protected from the sun's

The house should be allowed to dry

incidentally, the poultry house will be lighter and more cheer-

ful for the biddies. are allowed to occupy it.

> Make Friends With Hens. If care is used around the hens they soon become very quiet in your presence and will not be frightened if you remove eggs from under them. The farmer who can make his hens strut around and talk to him like personal friends, has no trouble with what might be termed a wild flock.

> > Green Feed Needed Poultry need green feed in winter.

Mangels, turnips and cabbages are 2. Two pounds common table sait, good. Alfalfa or clover dut early and



les, Strong in Probate and Fligh in Pat-Making Pond

ing time. That's true; but that de shadow. She should be fed a good, hearty ration, strong in protein. not rich in the fat-making foods. should have plenty of exercise. should be in that thrifty condition which makes her as strong as a bullbut not fat.

There's no danger of her having too much bone and muscle. The heavier she is the better-provided that to sary to feed so much of the expensive much of her weight is not fat. At all-corn ration robs her of the strength she will need at the time of her trial and fills the cavities of the body with fat. Then she will be fat and lazy and will kill her pigs by lying on them. mixed with them, just enough to take Or she may never be able to bring them forth. Or her appetite for bone up the surplus moisture, so that the and muscle-forming foods may be a abnormal that she may eat them up.

But if she is kept from being too fat by the simple method of starvation. she will not give the litter the proper amount of milk.

If the sow becomes constipated be- and hot we fore farrowing, as some sows do, epsom salts may be given in the slop for the dairy three or four feedings-just enough so that the taste will not repel the sow | amounts is also a good and keep her from eating.

At farrowing time occur the most of the pig losses. Some of them come from the absence of the owner when the pigs arrive, and some from his presence. The sow should be carefully watched, but she should not be dis turbed. In other words, no does should be allowed anywhere near, and she should not become aware of the pres ence of those who watch her. A good brood sow stealing her nest in the grove or fields will on the average bring to the feed trough a better litter than the one which is fussed over by a solicitous owner. Yet she sometimes needs help. Combine the

EXPENSE OF KEEPING HORS

merits of the two methods.

Cost is Much More Than Many Pe sons Usually Believs---Estimate Placed at \$75 Yearly.

The cost of keeping a horse for a year on a farm is much more than many persons usually suppose. In an estimate of such cost it was found Dige that a horse weighing 1,200 pounds and kept at moderately hard work costs \$76 a year for board. Foods, of course, are usually higher in some places than others, where it would not

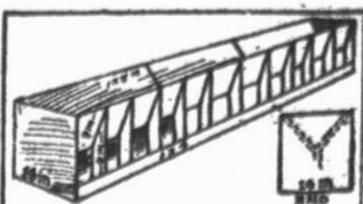
cost so much. Taking one horse with another, as | turn. One the period of idleness in the winter season, the cost to keep would not would, however, cost relatively more than those of lighter weight.

PARTITIONS IN HOG TROUGH

Device Prevents Young and Small Ani male From Being Crowded Out of Their Allowance.

Partitions in a hog trough will save the owner much trouble in feeding. Where there is nothing to prevent the young and small pigs are often crowded out of their rightful allowance by the older and bigger animals.

The trough shown in the illustration is partitioned off to save this trouble. The bottom of the one I made was a 1-inch board 14 inches wide.



Side and End Vlew.

sides were 4 inches high, partitions 6 remedy is putting two inches wide. For the V sides on top cow's nose, Ring the used 1 by '8, and at the lower edge | way, and in this ring of these nailed strips of 1 by 4 to forming two links of keep the slop from wasting, writes times one ring will a Odom Tyson of Lee's Summit, Mo., in | in most cases two are Missouri Valley Farmer. The partitions were spaced 10 inches apart. They were cut sloping across the top, and from the bottom of slope to bottom of trough is 8 inches.

ERADICATE LICE ON CATTLE

Frequently Serious Pest In Winter-Any of Various Dips Will Prova Quite Satisfactory.

Lice on cattle and young stock are | do the work frequently a serious pest in winter. | bely has to Any of the various dips advertised or particular far sold for this purpose are effective, out for several days before the fowls They can be put on with a sponge or brush and worked in thoroughly to the akin, but it is not always safe to wet an animal all over in cold weather.

Kerosene and lard rubbed in from remedy. An even better one is to use I is mi powdered sulphur. Rub it in well with

fat may be com-When any one of the with akim milk and

in a trough. Mixing is not recommended.

ually a heavy m of prevention are a

is overly and

PROTOTIE 9

is rebbed with the ber the most difficult part !

small and frequent i Amount during the first

grind the grains fed. At this period either cats or ground. All grain a

RING FOR SELF-

brought on by putting of cow suffers and tries solf and the habit is A cure after the habit h

Early milking and