Ford Digs Two Mile Tunnel for A Billion Gallons of Water a Day

NEARLY a billion gallons of water a day—more than is used by the cities of Detroit, Philadelphia, Cincinnati and Washington combined—will be the capacity of a huge tunnel now nearing completion at the Rouge Plant of the Ford Motor Company, Dearborn, Michigan.

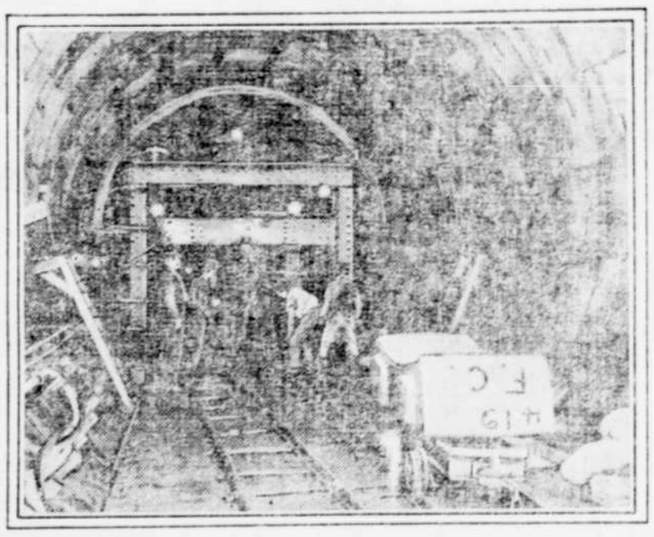
The tunnel will replace the present water intake system which supplies the Ford plants with 500,000,000 gallons a day. At the same time the company is remodeling its power house to greatly increase the power output. Both improvements, costing several million dollars, are being made to enlarge the production facilities of the Ford plant.

Sixty Feet Under Ground

In constructing the waterway, the largest of its kind ever undertaken by a single business concern, the engineers are burrowing sixty feet under ground for a distance of two and a fifth miles. They have gone under main highways, railroads, street car tracks, bridges, a cemetery and a creek.

One of the most difficult tasks was that of tunneling under Baby Creek at a point which is crossed by a railroad bridge and where also a large sewer is under construction by the city of Detroit. The piles that provide the foundation for the bridge and those driven by the company constructing the sewer formed a network on each side of the creek. It was the task of the Ford engineers to burrow under the creek, sewer and bridge, going between the piles without striking or weakening them.

Boring of the tunnel is accomplished by means of a shield—a large steel cylinder fourteen feet long and twenty-one feet in outside diameter with a solid steel shell or skin two and a fourth inches thick. This shield has a bulkhead which is made fast near the front end. There are four openings through which the mud streams, like toothpaste from a tube, as the shield is shoved forward by twenty powerful hydraulic jacks.



The head of one of the sections of the Ford tunnel showing the machinery used to burrow through the ground. In the foreground is one of the concrete blocks used to line the tunnel which has an inside diameter of fifteen feet.

When the shield has been pushed forward sufficiently concrete blocks two and a half feet wide and five feet long, each weighing 3,420 pounds, are placed to form a ring around the circumference of the tunnel. One of them acts as a keystone so that the lining of concrete, which is eighteen inches thick, withstands the pressure of the earth. After this steel forms are set up and filled with concrete to form a solid inner lining which is also eighteen inches thick.

The present intake system of the Ford plant has a capacity of 500,000,000 gallons a day. The new tunnel will be able to carry 915,000,000 gallons.

DAIRYING

By Dr. L. D. LeGear, V. S.
St. Louis, Mo.

Dr. LeGear is a graduate of Ontario Veterinary College, 1892. Thirty-eight years of veterinary work. Eminent authority on diseases and raising of dairy cows other livestock and poultry. Nationally known lecturer, writer and author.

It is said that moving picture stars are assisted in their journey along the road to fame by well-paid publicity agents.

Without any such artificial aid, the bull has become famous in the public mind. First a well-known tobacco manufacturer named his product after the bull and dotted the landscape with huge billboards depicting a magnificient animal challenging the world.

In recent years the expression "throwing the bull" and other versions of the same thing have been added to our rapidly growing vocabulary of slang terms.

In dairying the bull is a serious factor, so much so that the success or failure of a herd may easily rest on the proper selection of a sire.

Experiments have shown that a pure-bred bull when serviced with scrub cows will produce daughters whose milk production will exceed that of their mothers by one-third to one-half. There are countless records at experiment stations to prove his. Second generation cows from the same or equally high-grade sires will likewise show big increases in milk production.

In selecting a bull Be sure to look into his parentage. Remember it is the blood line that counts for everything. Do not be deceived by the fact that his mother has a big milk record. She may be an exception in a herd of cows from the same sire, whose average production is low. Experience shows that a dam will transmit the characteristics of her family, not of herself alone. So if possible know the record of the young bull's ancestors at least two generations back.

According to a well-known law, one-half of the characteristics of an animal or human being come from the male and the other half from the female. But in discussing these characteristics keep in mind that they are an accumulation from many ancestors, in other words, they are family, not individual traits. Therefore when you use one bull in a herd, which is usually the case, and he is mated with all the cows, one-half of the characteristics of all the calves come from the sire. In other words, the bull is half the herd, for better or worse.

We have in mind the record of one bull which had a very good pedigree. But most of the daughters from this bull were failures. They averaged nearly 1500 pounds of milk and 70 pounds of butterfat a year less than their mothers. Think of the loss that meant to the owner of the herd, since the cost of feeding, milking, and marketing was the same.

In the last twenty years we have seen the co-operative bull association movement successively introduced in this country. The idea is borrowed from Europe. A group of farmers or dairymen get together and form an association for the purpose of buying and maintaining a pure-bred bull. In this way owners of small herds, who could not possibly afford to own a good bull, have the advantage of the best.

Frequently a number of groups are organized, adjoining each other. If there are three groups for instance, three bulls are purchased. They generally plan to have about 50 to 75 cows to be served in each group. Then, to prevent inbreeding, the sires are moved from one group to another every two years.

There is no estimating the benefits that have accrued to the dairy industry as a whole by the introduction of co-operative bull associations, but they undoubtedly have done as much as any one thing to put us abreast of the times.

Another advantage of the co-operative buying is that you can afford to keep the bulls only during their best years. It is true that the young sire can begin service shortly after he is one year old. But his best period is between the ages of two or five years. When past eight years the majority are slow and uncertain.

A FEW HINTS OF THE CARE OF A WATCH

It should be wound carefully and regularly each day at a definite time.

Protect it from unnecessary jolts, jars, knocks, or falls.

The case should be kept closed and should be taken to a reliabel watch maker regularly once a year for over-hauling and oiling and it should be inspected at least every six months.

It is unwise to open the case unnecessarily to admire the movement. Each time the back is open, it gives dirt a chance to enter.

Your watch is not a plaything for the baby, and it does not improve it to be used as a hammer.

If your watch stops, see if you have forgotten to wind it. Use careful pressure on the winding crown at the start, in case it is already fully wound. Do not tamper with it or shake it on any account. Take it to a reliable watchmaker if it should unexpectedly stop.

Stopping, except for want of winding, indicates something amiss with the movement which only a skilled watchmaker can discover and make right.

Alfalfa leaves and blossoms, up to 5 per cent of the mash, makes an excellent substitute for green feed for chickens when kale is not available, tests at the Oregon Experiment station show.

HOME POINTERS

Grape Conserve

3 pounds grapes
1 pound sugar
1 cup chopped nut meats
½ pound raisins

Slip the pulp out of the grape skins. Heat the pulp until the seed can be removed easily by rubbing through a colander. Grind the skins in a food chopper. To each cup of skins add one-half cup water and boil gently until skins are tender. To the tender skins add pulp, sugar, and raisins. Cook until thick and clear. Add the finely-chopped nut meats. Cook five minutes more. Pack in sterilized jars.

Real Estate Transfers

John F. Downes et ux to William J. Troutman et ux, Lot 1 and 7, Block 56 North Plains.

R. L. McKnight et ux to L. R. Knox et ux, 100 acres T. 1 N., R. 2 W.

J. S. McNeil et ux to G. E. De Pue et al, Lot 2, 4, and 5, Blk. B, Lehmann Acre Trs.

Geo. Johnson et ux to Harold S. Gilbert, 2.56 acres Sec. 25 and 26, T. 1 S., R. 1 W.

Minnie May Duffy to Donato Lauro, Lot 28, Woodland Acres, No. 2

Flora Campbell to B. F. Doddridge et ux, Lot 11, Blk. 3, Sherwood Acres.

Ernest Keehn et ux to A. M. Bobbitt et al, Lot 3 and 4, Blk. 10u Orenco Townsite.