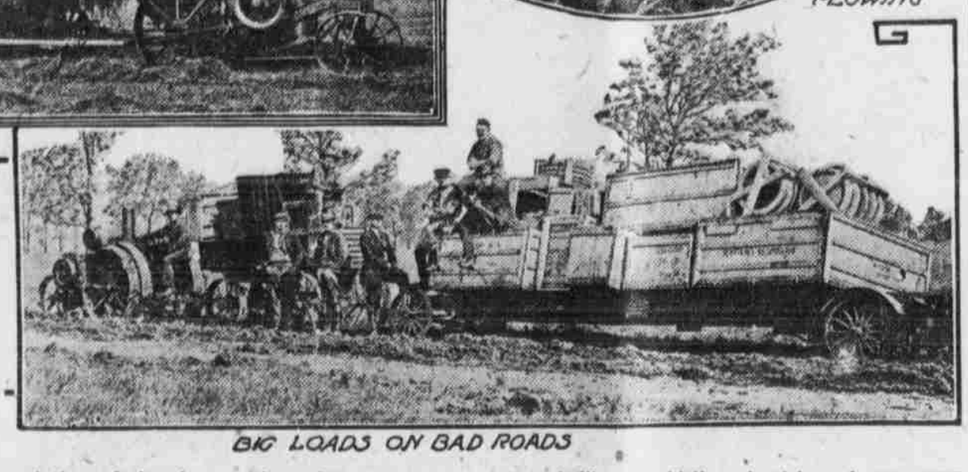
TRACTORS TURN FARMING TO JOY-RIDING

FIELD WORK

PLOWING



BIG LOADS ON BAD ROADS

The gasoline horse is rapidly revolutionizing American agriculture:: Robert H. Moulton describes for our readers some of the wonders performed by the mechanical hired hand on our broad acres

THE farmer took to the automobile as he does to a circus. Old Dobbins of the buggy has long since been smothered by the exhaust from the four-cylinder gas vehicles, and now he is being ousted from his old and arduous vocation of plowing and harvesting. If it were not for the welcoming arms of the belligerent war buyers, there would be no one to love or cherish our black beauties, and, like poor relations, they would have to survive on the husks. Farming has ever been attractive to the city chap, and it has always been extremely toilsome to the native. But now, with the aid of mechanical hired hands, farming in the future will be mere joy-riding. Instead of following a team of panting, perspiring horses and stumbling over rough clods in the broiling sun while trying to keep under control a plow whose diabolical disposition is to twist and turn from the straight and even furrow, Mr. Farmer can put on his automobile goggles and gloves, seat himself comfortably in the spring seat of a tractor, and under a canvas canopy that shunts away the sun, guide his obedient steel steed across the fields. In the springtime the plowing can be done to the music of the birds, who gather around to watch for the luckless but luscious worms turned up by the blades. By one turn of the wheel, a battery of disk plows can be made to obey orders like soldiers.

When the plowing is done, the mechanical hired man will as cheerfully pull a harrow or a seeding machine, and no stops need be made in the shade to allow the "critter" to "blow." A tractor loves to work and all it asks in return is that its stomach be kept full of the spirits that enthuse but do not intoxicate.

During the dinner hour, if the farmer follows his efficiency book faithfully, he will connect up his tractor engine with the pump and fill the water reservoir, or perhaps he will turn the churn for mother. After a long pull at the cider barrel and the distillate tank, both master and servant are ready to resume operations.

As the seasons merge one into another, and the crops are all planted and growing under the genial smiles of Old Sol and the sympathetic ministrations of Jupiter Pluvius, Mr. Farmer, with nothing to do but watch his grain grow, can drive his tractor over to the neighboring wood lot, and with the help of his husky sons, or his neighbor's stalwart sons, can cut enough cordwood to defy the advance and siege of Jack Frost. The modern tractor loves to be tied to a buzz saw, and it sings right merrily while doing its work. When the wood is cut, the obliging tractor will haul it to the woodshed, and then, like the famous man of history, will look for new work to conquer.

The overwhelming advantage of the tractor over horses is that of power and endurance. If the supply tank of one of these machines is kept full of fuel, it will work on indefinitely without rest, whereas beasts of burden demand time to eat and sleep and rest. Then, too, it is much easier on the farmer to sit on a seat and plow by turning a wheel than to follow the furrows on foot. Consequently, the farmer with a tractor will do all his plowing in from a fourth to a half of the time required with horses. By equipping the machines with electric lights, generated by the motor, the surrounding ground can be made as light as day, and plowing can go on independent of the sun. Poor Dobbins would give up the ghost if subjected to such treatment.

The superiority of the tractor is also demonstrated by the ability to get over ground so soft and muddy that ordinary horses and farm implements would mire in. The modern ball-tread tractor is built to run on its own track. Being wide and flat, with the weight of the machine evenly distributed, this caterpillar type of perambulator can navigate through a sea of mud, and by its great traction power can pull anything except teeth. In the rice fields of California, where water stands upon the ground during all the growing season, the tractor is found to be the only feasible means of getting over the fields for plowing, seeding, cutting and harvesting the crop. It even furnishes the motive power for thrashing the rice.

If the road in front of the farm is rough and needs the smoothing influence of the tractor, it will do the job and do it right. If the hens have been industrious, or bossy's product has been converted into golden butter or cheese for the city folks, Mr. Farmer can haul them to market by hitching a trailer behind his tractor. Many of the machines are bought for their hauling ability alone. It will even take the folks to church on Sunday, if the jitney happens to break down on Saturday night.

In fact, the tractor is as versatile as a movie star and it doesn't mind showing off its diverse talents. One has even been known to rid a cellar of rodents by "coughing" the gas from its exhaust through a rubber tube run into the private dwelling of Mr. Rat.

The development of the tractor is a matter of evolution. It has been with us for many years, but the older members of the family, though big in stature, were extremely awkward, had many ills and didn't believe in efficiency. They were very impressive to look at, but when the farmer bought one he usually found that it made the most durable impression upon the ground. It was a better staller than a politician.

Through education, however, it was developed into a finer thing. It lost a lot of its awkwardness with its size and gained in strength and flexibility. Its groans were converted into action. It began to wear new shoes, and when a mudhole or a gully confronted it, instead of puffing and snorting and marking time, as the older ones did, it rolled on through the soft spots, or climbed out of the ditches. Its new revolving track shoes could go anywhere, and it did. The latest proof of this is seen in the reports from the European battlefields, where the armored "tanks" are walking over all obstacles. It is said on reliable authority that these tanks are built upon a foundation of an American type of tractor.

It is in orchard work that the tractor has won its way into the hearts of many owners. In a well-managed orchard it is necessary to plow up the soil as close to the trees as possible. With a team and the old-fashioned plow, it is impossible to cut corners and reach little out-of-the-way nooks, but not so with the tractor. It can turn around like a whirling dervish and can come close enough to a tree or the fence to caress but not offend it. A favorite trick of one make of a California tractor is to turn completely around on an ordinary railroad flat car. When one considers the width of these cars the feat is a remarkable one. If all else fails, the machine can get a job in a circus as a contortionist.

One of the odd uses to which tractors are put is that of clearing land for cultivation. On the virgin fields of Canada the ranchers found the new land to be thickly covered with tough brush and young trees, forming a dense mat, to clear which by hand seemed a formidable task. A tractor owner rigged up a sort of "summer snow-plow" made of two sharp blades at the bottom and a number of steel rods placed horizontally over a V-shaped frame that ran to a height of four or five feet. By fastening this contrivance to the front of his tractor, and by bucking the forest growth as he would a snowdrift, the brush was cut off close to the ground and thrown to one side and burned. Later the same tractor went over the ground with a gangplow and cut out all the roots and turned up the soil for planting.

The tractor on the farm has come to stay, and the up-to-date farmer will find it as hard to get along without one as a wife, and much easier to get along with.

Trade Secrets Held at Enormous Prices

The Oxford Press syndicate values its formula for making the very thin, tough paper used in the Bibles and encyclopedias at more than $1,000,000. To perfect the process required 25 years of hard work and the expenditure of $1,000,000 in cash.

A secret of even greater value is the formula for making the paper employed for the Bank of England notes. This is a family possession of the Portals of Lavenstroke, to whom already in two generations it has brought an enormous fortune.

The brilliant red cloth of the cardinals' robes worn at the Vatican has been manufactured for many generations by the same firm of merchants at Burstcheid, near Aix-la-Chapelle.

The secret process of distilling the dye is given by father to son, with every precaution to prevent any outsider from gaining possession of the recipe, according to a writer in the Los Angeles Times. In this connection it is rather curious to note that this family of cloth merchants is of Huguenot descent and is Protestant today.

Recipe for Green Chartreuse.

When the monks of La Grande Chartreuse were expelled from France, the senior abbot carried the recipe for the famous liqueur in a casket of tempered steel, and this was never for a moment out of his possession. In the open market afterward the formulae for the twin liqueurs, the green chartreuse and the yellow, were sold for $1,600,000. At the time this liqueur was first made the recipe was written on a single fragment of parchment, six inches by nine. One by one additional ingredients were introduced.

It has been stated that at the present time the mixture contains 137 different substances. And every addition to the drink required an addition to the recipe.

The result was a volume of more than 100 pages. It is no exaggeration to say that this is the most valuable book in the world. This becomes rather amusing when we remember that the mendicant friar who first concocted the liqueur regarded his invention with considerable disfavor.

He was as shortsighted as Giovanni Farina, who was the originator of eau de cologne. He offered the recipe for sale at $3,500. A conservative estimate of the total value of its sales' profits since that is $25,000,000.

Famous Maraschino Cordial.

The Namis of Zara, in Dalmatia, were wiser. They possessed as one of their heirlooms a family recipe for a drink distilled from the marasco, or wild cherry. When they finally consented to part with their secret they received therefor a large sum in cash and land to the extent of several thousand acres. This is the cordial popular the world over as Maraschino.

It has frequently happened that valuable trade secrets have been lost beyond recovery. For instance, the best watch oil, it appears, cannot be obtained today because the secret process of mixing perished with the inventor. It is said that the last quart of this famous liquid was sold for $200, and that was 35 years ago. Since then every effort has been made to analyze the product in an attempt to reproduce the oil, but without success. The man who made it who alone knew its composition died, and, it further appears, not even his name or the place of his burial is known. He never revealed to anyone the details of his process and it was not until after his death that the real value of the oil was appreciated.

Business firms are not the only possessors of trade secrets. Governments are just as zealous in guarding valuable processes as are manufacturers. For example, the Chinese government is the owner of the secret of making vermilion red, which is held by many experts to be the most beautiful shade of red in the world. No one has ever been able to produce a like vermillion.

The Turkish government, it appears, possesses a similar secret process of inlaying precious metals in the hardest steel. The work is done perfectly and defies all attempts at reproduction.

In 1913 it was announced that a distinguished chemist of the imperial technical school of Moscow had solved the problem of making artificial rubber, and that he could sell the new product at about 30 cents a pound. Yet the price of rubber remains pretty much the same, if not more. The reason may be found by examining the patent office records. In the last decade many hundreds of patents for artificial rubber have been taken out. Substitutes have been made from petroleum, from coal tar, turpentine, peat, from nitrated linseed oil and by treating cereals with phyalin.

The latter invention created a considerable sensation so long ago as 1906, yet, judging by the constantly increasing demand for the natural product, it has had little effect upon the real rubber market.

The chemist, working in his laboratory, can take any substance and analyze it, that is, break it up into its original constituents, and tell you what they are and how much of each element the substance in question is composed of; but when it comes to building up the original substance out of its prime constituents he is at sea, for the most part. By dint of long and patient experiments or perhaps by pure chance he may succeed in reproducing some few natural products, but that is as far as he can go.

Indigo blue took many years to synthetize. A German chemist accomplished it at last, but the curious discovery was made that if blended with the natural product made from the indigo plant the color obtained was both more durable and brighter than that made by either dye alone. So artificial indigo has not yet ruined the indigo planter.

Gutta Percha Becomes Scarcer.

Artificial camphor has also been produced. It is now made from pine-tree turpentine. But the chemist has not yet succeeded in synthetizing gutta percha. This commodity yearly becomes scarcer. Enormous quantities are required for various purposes, notably the covering of submarine cables and the making of golf balls. A fortune awaits the man who can make artificial gutta percha at a price that will permit it to compete with the juice of the Dichopis gutta.

Cork is another substance of everyday use that seems to defy the inventor. The only substitute for cork is paper treated with paraffin wax. But such a cork could not be used for a bottle of wine. So far nothing has been artificially made to compete with the bark of the cork oak.

At Delhi, in India, stands an ancient iron monument which, though exposed to all weathers, never rusts or decays. Yet it has no protective covering. Here is a secret which would be simply invaluable to the world, which has been discovered by some Indian artificer of old and most unfortunately lost. At a meeting of steel and iron men in London, the chairman said that they could face the future with complacency if they could rediscover the secret. To shipowners alone it would mean a yearly saving of millions. Rust is the great enemy of the steel ship and she has constantly to go into dock to have her hull coated with an anticorrosive solution.

OUT-OF-ORDINARY PEOPLE

HEADS WAR INDUSTRIES BOARD

There is a story in Washington to the effect that when Frank A. Scott, head of the government's new war industries board, applied for his first job as a boy in a freight office, the chief said he would hire him if he were only tall enough to reach the wheel of the letter press. "Couldn't I stand on a box?" asked the boy. The freight agent had not thought of that, but the idea appealed to him, and Scott got the job. He made such good use of its opportunities that in the course of time he became the expert on freight rates of the Cleveland chamber of commerce. He became various other things, too, in organizing and manufacturing, but this is not a biographical sketch of Scott. It is enough to say that his qualifications were sufficiently known and appreciated by the secretary of war and other members of the administration for them to summon him to Washington at the outset of the war to take the chairmanship of the general munitions board and the munitions standard board, which had been created as emergency agencies.

These boards served as the box for Scott to stand on when he reached the levers of an important part of the government's war machinery. But the box was not high enough, and the machinery itself developed serious defects in the course of early preparations for the war. Now it has been scrapped by the council of defense, at the suggestion of the president. The new war industries board has been created to take its place, with Scott still as leader, but with a much smaller and significantly modified personnel, with broader powers and more concentrated authority.

EXPLAINS WORK OF W. C. T. U. IN WAR

At the meeting of the presidents of national women's organizations called by the women's committee of the council of national defense in June to confer on woman's work in the war, one of the strongest and clearest accounts of activities was presented by Miss Anna A. Gordon, national president of the Women's Christian Temperance union.

"The National Women's Christian Temperance union, comprising nearly half a million women, already is rendering splendid war service," said Miss Gordon in a personal interview following her public talk. "Our order stands for peace, but when President Wilson decided that the time had come for this country to take up arms against oppression and crimes against humanity, we pledged ourselves to stand by him to the limit of our strength, and because of the perfect organization of the union there was no delay in outlining work. We believe it is our duty to suffering humanity to unite with the nation in defending the principles of Christian civilization.

"There are some 30 or 40 departments of work in our order carried on under the general definition of preventive, educational, evangelistic, social, legal, and the organized workers in each department were ready to respond to the call of patriotism."

CHOSEN TO COMMAND ARTILLERY

Gen. Peyton C. March is recognized as the greatest artillerist in the American army and as such at the personal request of Major General Pershing was detailed by the secretary of war as the commanding artillery officer with the first forces to be sent to France.

As a colonel he was in command of the artillery forces on the Mexican border during the recent disturbances, and while a strict disciplinarian, his command, almost to the man, has requested that it be allowed to accompany him to France.

He was in command of the American forces in action at Tilad Pass, Luzon, P. I., in which General del Pilar was killed; during the same expedition Gen. Venancio Concepsion, chief of staff to Aguinaldo, surrendered to the then Major March and Aguinaldo's wife and her escort were captured by his command.

He was a member of the general staff corps for four years and was detailed as military observer with the Japanese army in their eastern operations during the Russo-Japanese war.

CHIEF AID OF SECRETARY M'ADOO

"When it gets so hot I can't bear it," said a man who lives in Washington, "I just run over to Byron Newton's office, in the treasury building, and look at him for a while."

Mr. Newton is assistant secretary of the United States treasury, and how he acquired the knack of keeping so cool nobody knows.

"Maybe it's because I am in the vicinity of so much cold cash," said Mr. Newton when he was asked about it. Years ago Mr. Newton was a reporter for the New York Herald, and even in those days he had the knack of keeping cool when everyone else was sweltering. He is a large man, rather red of face and not the type one would expect to see oblivious to the heat.

When Secretary McAdoo is away Mr. Newton is acting secretary, and he acts so well that some of his friends say that if Mr. McAdoo ever goes back to running his trains under the Hudson river his assistant ought to be appointed to fill the vacancy. One of the biggest jobs ahead of Mr. Newton is the collecting and checking up of the huge war taxes which congress is levying.

"We've had trouble enough with the income tax," he said, "but it's only a starter to what the war taxes will be. We will have to maintain a field army of our own just auditing books, collecting and investigating."—New York Herald.