Future of Farming
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WHAT THE WORLD IS COMING TO!

by Ferdie J. Deering
Editor, The Farmer-Stockman

In the last half-century the lowly clod has come to be recognized as the most precious thing we have. A hundred years ago, folks were crazy to find gold, but now the venturous prospectors are those public-spirited missionaries who talk glibly of what can be done with a farm full of dirt properly treated and conserved. Whether they think it ought to be done by a chemist or an earthworm depends upon the point of view.

Scientists are on the track of many new ways to increase the soil's output of the things we need to eat and wear. Phenomenal methods of profitable soil management will come when we figure out the workings of plant foods such as nitrogen, phosphorus, potash and the so-called trace elements. And we've barely started.

Soon, through use of soil conditioners, some of which are now on the market, a farmer may be able to calculate exactly how much of each element is needed to grow a specified yield per acre of any crop. He probably will be able to rearrange the soil structure and by adding the proper plant foods, seasoned to taste with vitamins and hormones, make the poorest land blossom like a rose. That will give some land owners we know a distinct advantage over farmers living where land already is so good it can't be improved upon.

Through use of chemicals now being developed, there will be ways to treat the soil so that weeds will not even germinate, while favorable insects and desirable plants will be stimulated. The humble earthworm and microscopic bacteria will work harder than ever to replenish the earth.

Of course, there is the possibility that through the science of hydroponics, crops can be grown on a large scale without soil. However, application of this method may be confined mainly to the health resorts that one of these days will be established in the polar regions, and perhaps even sooner on space stations in the stratosphere where fresh vegetables will be in demand by interplanetary travelers.

The plants and crops to be grown in the future will be quite different from those now produced. Present crops will become obsolete. They will have given place to superior sorts of all kinds, much more productive and nutritious so that the growing population of the earth will be well fed.

It is safe to predict that folks will not stop eating in the next 50 years, nor will their nature change to the extent of relishing their food in tiny pellets. Service men who have tried a diet of dried eggs, dehydrated milk and other concentrates have expressed a definite lack of enthusiasm for them.

Although it is possible to compress the same chemical and food elements contained in a beefsteak into a single synthetic bite-size crunchy, there is no likelihood that a satisfactory substitute will be found for the enjoyment of cutting into a tender, tasty sirloin steak, broiled to taste.

As the science of plant breeding moves forward, numerous plants from around the world and even from outer reaches of the universe will be introduced and utilized. Recent successes in crossing grass varieties with grain sorghums and wheat to yield superior sorts are indicative of what is yet to come. A new hybrid grain sorghum due within the next 10 years, is expected to grow a short type suitable for machine harvest when grain is wanted and a tall, leafy, plant when forage or ensilage if desired.

Each farmer will have a complete analysis of all characteristics of his farm and when he decides he wants to harvest a thousand or so bushels of any crop he will figure out his production systematically.

We will have advanced to the point that each farm will have its complete corps of advisors, economists and technicians, so that they won't waste time going from one farm to another. Each farmer will have his own extension agent, his own soil conservation technician, his own PMS man to figure any subsidies due him, a commodity credit man to keep him closely advised on price supports and other financial manipulations, while the Bureau of Agricultural Economics will have a corps of statisticians to keep track of what he grows and sells.

So, when he decides how much he wants to grow of a crop, he will just sit down with his advisors to calculate the number of acres needed, check the plant foods as may be indicated and then select a seed supply bred to fit exactly these conditions. The crops will have the flavor, texture and size preferred by the farmer or his customers.

Of course, before planting the seed will be treated chemically to immunize it against disease and instill a systemic poison so that any harmful insects will be immediately repelled or killed.

All of these operations will be carried on by machines as revolutionary compared to our present devices as the combine is to the old-time grain thresher.

There will be no necessity for a man to sit all day driving a plow or a crop harvester. He will simply lay out the pattern for operation of the machine, set the electronic directional controls and turn it loose. A safety gadget will automatically stop the machine and send a signal by wrist-radio if anything goes wrong.

The machine will do the rest, up and down, plowing, planting, cultivating or harvesting, turning and reversing, according to the contours of the land. Unlike a tired hired man, it won't stop for lunch and darkness.

Even refueling won't be a problem. The science of atomic energy will some day enable the farmer to make use of whatever radioactive elements may exist in abundance in his locality. The small volume of fuel needed will be supplied for the entire field when the work begins.

It is even possible that a method will be perfected whereby the manufacturer will build enough fuel into the machine at the factory to last the life of the machine, but this probably won't be on the market for at least 60 years.

That, in brief, is what the farm of the future will be like. If you have any doubt about any of these things taking place, just ask any 7 year old member of the Supersonic Space Club in your neighborhood. To them it isn't a matter of whether these things will happen. It's just a matter of when.

Ever since primitive man cultivated his first field with a sharpened stick, the farmer has been concerned about the weather and its effect on his prosperity and diet. In the future, the concern will still be there but the farmer quite likely will be able to do something about the weather.

Already scientists have found ways to increase the amount of rainfall that may be obtained from certain clouds but this work is still in its more elementary stages. The amount of moisture that falls as rain or snow is only a small fraction of the total that passes over any given area, but nobody yet knows how to produce a cloud that can be seeded with silver iodide nuclear particles to simulate natural rain-making conditions and induce precipitation.

Not only will the weather man of the future know how to do that, but he also will be able to move the cloud where needed.

It won't do much good to be able to make it rain, though, unless you can get it to stop raining when you have all the water you want or need. That, too, is coming. Hazardous blizzards and gully-washing cloudbursts will be read of only in the history books. Even when most of an area wants a rain, an individual farmer-of-the-future will be able to have it bypass his farm if he gives notice to the weather modifications service. That way you won't loose a hay crop or miss a fishing trip.

Oddly, this optimistic viewpoint is not shared by all. Many still question the merits of cloud seeding as a means of producing moisture. Some projects financed by farmers and business men have been discontinuted when rainfall remained below hopes and expectations. Others are going ahead.

Dr. Irving P. Krick of Denver, still believes in it. He is president of the Water Resources Development Corp., which does a lot of commercial cloud seeding and probably spends all it makes on research to find better ways of doing it.

" In all probability, weather modification will become a push-button affair within the next decade--as common as turning on a TV set today. " Dr. Krick said. " The ability to increase water resources in underdeveloped areas of the world as a means of increasing agricultural and industrial productivity can become decisive in the battle against poverty and hunger. "

Last fall Fort Worth chuckled over the fact that Dallas had hired Dr. Krick's firm for cloud-seeding to help refill its city lake. Recently the work was summarized and a success claimed for the project, through providing more water in Lake Dallas and deeper penetration of moisture in surrounding farm lands than was received nearby where clouds were not seeded.

Now both Fort Worth and Oklahoma City are studying Dr. Krick's methods and prices.

Such operations have not yet reached proportions to solve the drouth problem. This may be due to the fact that methods so far devised can be used only on supercooled clouds and not at all if there aren't any clouds. Research is now under way to find ways to obtain moisture from warm atmosphere.

Radar also is being used to follow the patterns of storm centers across the country.

Erosion or crop damage by wind thus may be stopped. By installing a system of improved radar (possibly to be called windar) to detect the approach of high winds, the farmer will be able to press a button turning on a barrier of cosmic rays that will deflect the wind upward and away from his crops. If he happens to be away from home, he will be able to turn on the barrier by radio, so even unexpected storms can be nullified. If you can't stop the storm, new ways to forecast weather will tell you which way to run to avoid coming tornadoes.

In a recent published interview, Francis W. Reichelderfer, chief of the U. S. Weather Bureau, denied the possibility that atmospheric disturbances due to atomic bombs would have anything to do with causing the tornadoes, drouth or other weather changes that have occured this year. He also said that the Weather Bureau hit its forecasts 60% to 90% of the time but had not found any regular cycle on which wet and dry periods operate.

Another expert, Dr. Harry Wexler, chief of the scientific services division of the U. S. Weather Bureau, in a recent Associated Press story was quoted as saying: "We could probably regulate the weather right now if we had instruments close enough to the sun to measure the variations of solar radiation. Then we could compare that with our ground measurements and learn the effect of the atmospheric resistance."

It is this atmospheric resistance in solar radiation that he suspects holds the key to our weather control, and he thinks that will be solved when man perfects the space platform, a sort of way station out in space to be used for scientific purposes.

At the recent meeting of the American Society of Agricultural Engineers in Pittsburgh, one manufacturer explained the workings of a new frost control machine with thermostat controls that turn it on at 31 degrees and off when its rotating blades have fanned ground temperature to 35 degrees. The price of the machine was quoted as $2,400.

Some time ago, one Oklahoman probably a Democrat, wrote the Farmer-Stockman to suggest that we irrigate the Southern Great Plains by building mammoth concrete aqueducts to bring water in from the Great Lakes. He had in mind that the top could be used as a super highway to Chicago, while parallel conduits would convey power, communications and beverages.

One can see possibilities in such a suggestion, but it is not likely to be built. The reason is that irrigation probably will become obsolete before it can be completed, due to the aforementioned modifications in the weather.

The present battle between agriculture, industry and municipalities for rights to water resourses will be settled by the simple process of scientists being able to deliver rain in any amount when and where needed.

"The question of rainfall is far more vital to our agricultural future, and our future as a great nation, than many of the problems that currently occupy our attention," said Ezra T. Benson, Secretary of Agriculture, in a recent statement. "We must somehow, some way build a better defense against drouth and meet more adequately the challenge of floods."

He declared that we must improve our methods of using more effectively the water that falls, with greater understanding of the interrelationships of soil, water and crop production, and to hold the water on the land.

So there's a lot of hope that some day we may be able to save ourselves a lot of bother and grow a lot more surpluses. Then we won't be in the predicament of the western Oklahoma rancher who was asked what the average annual rainfall was in his section.

According to Al Darlow, vice president of Oklahoma A & M College, the rancher replied: "We average 22 inches a year, and boy, I'll never forget the night it came last year!"

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They will be able to do this on a large scale by applying methods already far along in experimentation and practice. When the desirable parents of a certain type of beef cattle are selected, the sciences of superovulation, articial insemination and ova transplantation should make it possible to produce an entire herd of uniform calves from these same 2 carefully chosen parents within a year.

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For example, the report that a Texas had crossed a bear with a Hereford to produce a Bearford tha hibernates all winter and saves costly feed is without foundation in fact. Even if it could be done, how would the cowboys get the critters out of trees at roundup time?

Likewise, we don't believe the story of the fellow who is said to have crossed a Guernsey cow with a camel to produce a "cowmel", described as a hot country dairy animal. She is supposed to store feed in her hump during lush seasons and need to be milked only once a week, when the owner rides her to the bottling plant for insured fresh milk delivery.

However, due to the current strong demand for skim milk, it may be worthwhile to speculate on a breed of dairy cows equipped with built-in homogenizers. Thus there will be no cream or butterfat in the milk they produce. This will save processing plants the cost of taking it out.

Another dairyman is working for a breed that will give dehydrated milk, but he seems to have been surpassed by a New Mexico dreamer who claims to be way ahead of the entire dairy industry. His herd of cows give no milk at all. This , he says, completely solves his milk marketing problem and holds dairy barn costs to the minimum.

Like the short-lived wingless chicken of a few years back, the legless cow might become a reality but the belts in the pastures so the animals could graze probably would offset any advantages that would seem to exist.

The other possibility, however, may have merit. That is a proposed cross of the Aberdeen-Angus with a giraffe to obtain a long-necked creature that can see its way to the water tank about the lush grasses that will be growing on our Southwestern prairies when we conquer the problem of rain-making.

Instead of the plain black, non-photogenic coat of the existing Angus, a polka-dot effect might be obtained with this cross, supplying a hide that would be in great demand for making "leopard-skin" seat covers for rocket ships.

Whatever they look like, there'll still be cattle on a thousand hills 50 or 100 years from now.

They may or may not know enough to come in of their own accord at milking or roundup time. But even this problem may be solved by the sucessor to the modern electric fence. When a cattleman of the future wants to bring in his stock, he may be able to simply throw an electronic lasso out over the range and gradually close in. The electrical charges will be harmless but should bring in the cattle a-whooping and a-bawling.

The more advanced models of this device, no doubt, will have multiple controls so that they can be operated either from the barn or from the jetpropelled palomino helicopter that will replace the quarterhorse. Except for riding in roundup club parades, that is.

The farmstead of the future will be a paragon of convenience. The up-to-date farm of 1953 has everything that modern genius and industry has been able to develop, including several items not found in urban homes, and that is only the beginning.

In the future, when the vegetables, meat and other products are carried to the kitchen by the belt conveyor, the homemaker will not have to spend days processing and preserving them. She will have only to place them in the hopper of her all-purpose food processor, set the proper controls for potatoes, cantaloupes, spinach or what-have-you.

The machine will then automatically sort, wash, peel if needed, cook as desired, package and eject into the nearby freezer room that will seal in all vitamins, flavor and calories. This is not on the market now because no way has yet been devised to make the machine distinguish a potato bug from a potato, but we expect it.

The gadgets that will grace the farm kitchen of the future will be a housewife's dream. Some of them will be so utterly useless that the little woman wouldn't even buy one from a hawker at the state fair.

This culinary utopia will function by placing a recipe and designated ingredients around a mixing machine, setting the controls and then watching the appetizing dishes of food come out ready to eat. It will be cooked electrically without heat, and the electricity will be obtained from the atmosphere by a static-gathering machine which is still secret and cannot be described here.

There'll be no dishwashing, because everything will be prepared in disposable utensils. Neither will there be any clothes washing or ironing. Wearing apparel will be fabricated on the farm from farm products so economically that each garment will be discarded as waste material after it has become soiled--if it ever does. Naturally, it will be water-repellant, wrinkle-resistant, non-shrink and stain-proof.

All of these conveniences will naturally give the farmer and his family more time to do the things they've always imagined they wanted to do.

In the past, the farm family worked 5 days, went to town on Saturday and attended a dinner-all-day-with-singing-on-the-ground on Sunday.

In the future, the farm chores will take only a couple of days a week (in the busy season, that is) The 5 day weekend will become a reality.

Mom's home demonstration, quilting and conversation club can meet 3 times a week, and who knows, they might even get a quilt quilted. Farm work will no longer interfere with Pop's attendance at the Spit-and-Whittle Club or with Junior's basketball games.

Secretary of Agriculture, Exra T. Benson, recently said that by 1960, it is estimated that animals will supply only 1% of our work energy, humans only 3% and machines 96%. Thus while we still apparently will do 3 times as much work as horses, it will be only a fifth as much as human beings performed a century ago. However, horses and other animals at that time supplied 79% of the total energy used for work, and this is about to be reduced to 1%. That' what we mean by horse sense.

Just as the whoop-and-holler magneto party-line telephone has become obsolete, so will today's instruments that utilize wires and monthly bills.

The radio frequency which will be assigned at birth to each person will serve as his communications system. He will be able to use it direct within a reasonable distance, or by relay stations to distant points.

If the farm woman wants to talk to her husband down at the barn, or to her neighbor on the next ranch, she need only flash their respective frequency before talking.

For formal conversations, of course, there will be 3-dimensional personalized television so that each may see who he is talking to. It may be assumed that a shut-off apparatus will be provided for Papa down at the barn in case Mom talks too long, and for the visual conversation if somebody should get the wrong frequency at 2 a.m.

The small fry of the future will enjoy farm life immensely. The chores that occupied the valuable time of their forebears either will be unnecessary or will be done automatically by the machine.

Neither will the youngsters have to go to school, except to play basketball, take examinations or to get acquainted with the good-looker from the next township. This will be possible because the lessons will be learned at night. As the pupil goes to bed, he will plug a tiny device into his ear, turn on a recording of the geography or history lesson and to to sleep. Repetition of the lesson while he sleeps will fix the facts and methods perfectly in this mind so that only honor roll grades may be seen on his report card. The later he sleeps, the more he learns.

The same method may be used by his father for studying improved farming methods, except that he will have an additional gadget to scan pages of The Farmer-Stockman and read them to him. This will be especially helpful when he is reading highly technical material, because it also will explain the big words scientists like to use.

How will you keep such well-informed persons busy and happy on a farm that takes so little labor to operate? Well, there won't be any place on such a farm for a person who isn't lazy. This opens up a whole new world of opportunity for today's hired men. And also for a lot of us tired editors. To a person who is naturally lazy, happiness on such a farm won't be a problem.

History shows that a large proportion of our greatest leaders have been men who grew up on the farm. One of the encouraging aspects of the future is that farm boys will have more time to be leaders.

Besides helping to solve farm problems, the farm organizations they belong to may create a few, just for the fun of it.

In addition to services performed for active farmers, the farm organizations will provide outlet for the social energies of the farm woman and will maintain an old folks home for retired farmers so they can spend the 50 or 60 years of their retirement playing golf and reminiscing over the days when farming was hard work.

(The End)

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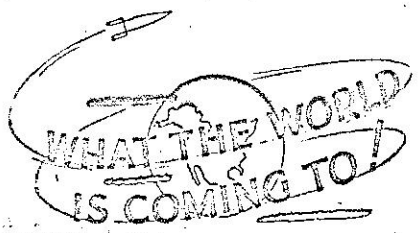

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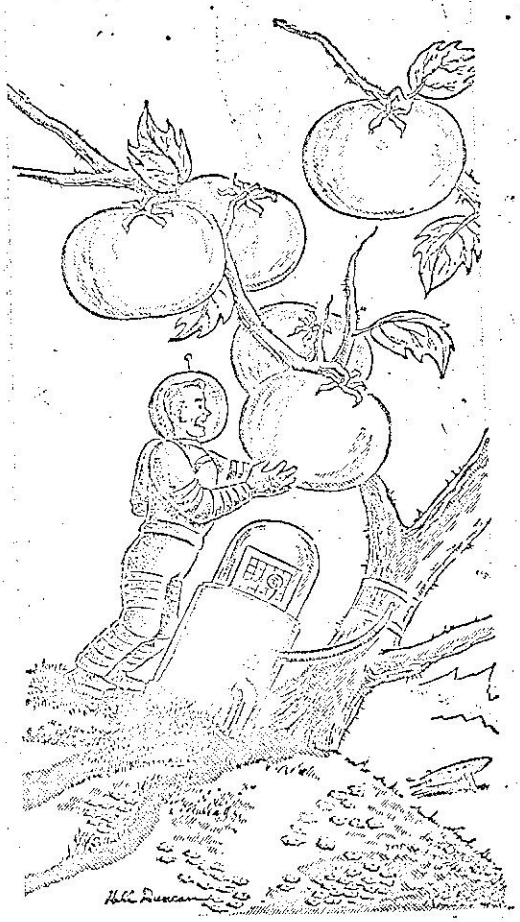
Illustration by Hall Duncan



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Cattleman's Problems May Be Solved by Scientists Some Day

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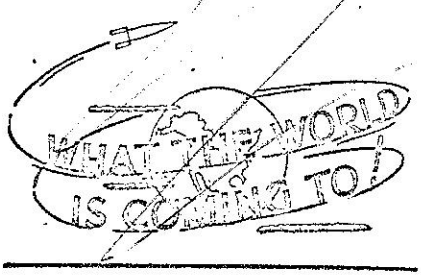

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However, due to the current strong demand for skim milk, it may be worthwhile to speculate on a breed of dairy cows equipped with built-in homogenizers. Thus there will be no cream or butterfat in the milk they produce. This will save processing plants the cost of taking it out.

Another dairyman is working for a breed that will give dehydrated milk, but he seems to have been surpassed by a New Mexico dreamer who claims to be way ahead of the entire dairy industry. His herd of cows give no milk at all. This, he says, completely solves his milk marketing problem and holds dairy barn costs to the minimum.

Like the short-lived wingless chicken of a few years back, the legless beef cow might become a reality but the added problem of installing endless belts in the pastures so the animals could graze probably would offset any advantages that would seem to exist.

One other possibility, however, may have merit. That is a proposed cross of the Aberdeen-Angus with a giraffe to obtain a long-necked creature that can see its way to the water tank above the lush grasses that will be growing on our Southwestern prairies when we conquer the problem of rain-making.

Instead of the plain black, non-photogenic coat of the existing Angus, a polka-dot effect might be obtained with this cross, supplying a hide that would be in great demand for making "leopard-skin" seat covers for rocket ships.

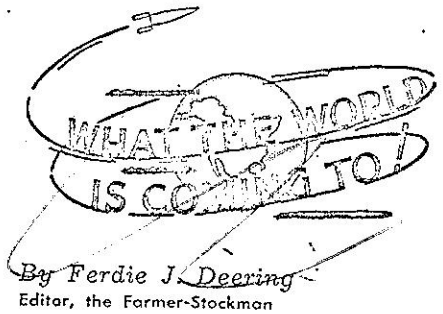
Whatever they look like, there'll still be cattle on a thousand hills 50 or 100 years from now.

They may or may not know enough to come in of their own accord at milking or roundup time. But even this problem may be solved by the successor to the modern electric fence. When a cattleman of the future wants to bring in his stock, he may be able simply to throw an electronic lasso out over the range and gradually close in. The electrical charges will be harmless but should bring in the cattle a-whooping and a-bawling.

The more advanced models of this device, no doubt, will have multiple controls so that they can be operated either from the barn or from the jet-propelled palomino helicopter that will replace the quarterhorse. Except for riding in roundup club parades, that is.

(To Be Continued)

One of a Series of Articles on



By Ferdie J. Deering
Editor, the Farmer-Stockman

THE FARMSTEAD OF the future will be a paragon of convenience The up-to-date farm of 1953 has everything that modern genius and industry has been able to devise, including several items not found in urban homes, and that is only the beginning.

In the future, when the vegetables, meat and other products are carried to the kitchen by the belt conveyor, the homemaker will not have to spend days processing and preserving them. She will have only to place them in the hopper of her all-purpose food processor, set the proper controls for potatoes, cantaloupes, spinach or what-have-you.

The machine will then automatically sort, wash, peel if needed, cook as desired, package and eject into the near-

by freezer room that will seal in all vitamins, flavor and calories. This is not on the market now because no way has yet been devised to make the machine distinguish a potato bug from a potato, but we expect it.

The gadgets that will grace the farm kitchen of the future will be a housewife's dream. Some of them will be so utterly useless that the little woman wouldn't even buy one from a hawker at the state fair.

This culinary utopia will function by placing a recipe and designated ingredients around a mixing machine, setting the controls and then watching the appetizing dishes of food come out ready to eat. It will be cooked electrically without heat, and the electricity will be obtained from the atmosphere by a static-gathering machine which is still secret and cannot be described here.

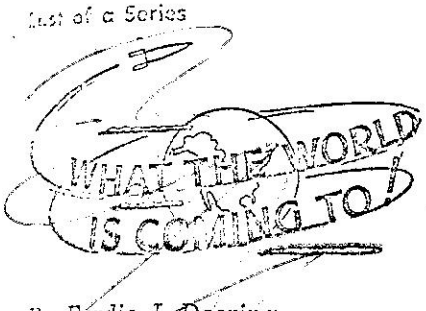
There'll be no dishwashing, because everything will be prepared in disposable utensils. Neither will there be any clothes washing or ironing. Wearing apparel will be fabricated on the farm from farm products so economically that each garment will be discarded as waste material after it has become soiled—if it ever does. Naturally, it will be water-repellant, wrinkle-resistant, non-shrink and stainproof.

All of these conveniences will naturally give the farmer and his family more time to do the things they've always imagined they wanted to do.

(To be continued)

December 1953

Last of a Series



By Ferdie J. Deering
Editor, the Farmer-Stockman

IN THE PAST, the farm family worked 5 days, went to town on Saturday and attended a dinner-all-day-with-singing on-the-ground on Sunday.

In the future, the farm chores will take only a couple of days a week (in the busy season, that is). The 5 day weekend will become a reality.

Mom's home demonstration, quilting and conversation club can meet 3 times a week, and who knows, they might even get a quilt quilted. Farm work will no longer interfere with Pop's attendance at the Spit-and-Whittle club or with Junior's basketball games.

Secretary of Agriculture Ezra T. Benson recently said that by 1960, it is estimated that animals will supply only 1% of our work energy, humans only 3% and machines 96%. Thus while we still apparently will do 3 times as much work as horses, it will be only a fifth as much as human beings performed a century ago. However, horses and other animals at that time supplied 79% of the total energy used for work, and this is about to be reduced to 1%. That's what we mean by horse sense.

Just as the whoop-and-holler magneto party-line telephone has become obsolete, so will today's instruments that utilize wires and monthly bills.

The radio frequency which will be assigned at birth to each person will serve as his communications system. He will be able to use it direct within a reasonable distance, or by relay stations to distant points.

If the farm woman wants to talk to her husband down at the barn, or to her neighbor on the next ranch, she need only flash their respective frequency and begin talking.

For formal conversations, of course, there will be 3-dimensional personalized television so that each may see who he is talking to. It may be assumed that a shut-off apparatus will be provided for Papa down at the barn in case Mom talks too long, and for the visual conversation if somebody should get the wrong frequency at 2 a.m.

The small fry of the future will enjoy farm life immensely. The chores that occupied the valuable time of their forebears either will be unnecessary or will be done automatically by machine.

Neither will the youngsters have to go to school, except to play basketball, take examinations or to get acquainted with the good-looker from the next township. This will be possible because the lessons will be learned at night. As the pupil goes to bed, he will plug a tiny device into his ear, turn on a recording of the geography or history lesson and go to sleep. Repetition of the lesson while he sleeps will fix the facts and methods perfectly in his mind so that only honor roll grades may be seen on his report card. The later he sleeps, the more he learns.

This same method may be used by his father for studying improved farming methods, except that he will have an additional gadget to scan pages of the Farmer-Stockman and read them to him. This will be especially helpful when he is reading highly technical material, because it also will explain the big words scientists like to use.

How will you keep such well-informed persons busy and happy on a farm that takes so little labor to operate? Well, there won't be any place on such a farm for a person who isn't lazy. This opens up a whole new world of opportunity for today's hired men. And also for a lot of us tired editors. To a person who is naturally lazy, happiness on such a farm won't be a problem.

History shows that a large proportion of our greatest leaders have been men who grew up on the farm. One of the encouraging aspects of the future is that farm boys will have more time to be leaders.

Besides helping to solve farm problems, the farm organizations they belong to may create a few, just for the fun of it.

In addition to services performed for active farmers, the farm organizations will provide outlet for the social energies of the farm woman and will maintain an old folks home for retired farmers so they can spend the 50 or 60 years of their retirement playing golf and reminiscing over the days when farming was hard work.

(The End)

January 1954