

The Complexity of Modern Research Demands Improved Scientific Information

A FARMER has a piece of land on it he grows some plants, then adds some animals. In producing from this land, he is actively challenging the complexity of Nature itself. He faces hundreds of questions. Some are biological, as with a disease. Some are physical, as with soil water.

No farmer can answer all these questions for himself. Yet, as an individual, he must work out plans for running his farm. He needs the help of advisers and, in turn, scientists.

Agricultural research faces the complexity of Nature with a unique association of scientists trained in various biological and physical disciplines. It takes more than one of these scientists to answer many of the farmer's questions.

This has long been true, of course. The method of measuring pH of a soil resulted from years of basic research in several fields. Nernst, a physical chemist, provided the basis of the hydrogen electrode method. Sorenson, a biologist, supplied the pH symbol.

Haber and Klemenziewicz, physicists, demonstrated the chemical nature of Helmholtz's glass electrode. There were many other contributions, including the vacuum tubes of de Forest, an electrical engineer.

This interdependence is even more needed today. As scientists build up more

and more knowledge of Nature, research becomes more and more complicated.

Nowadays, instead of an individual researcher, we have a group of scientists from many different fields working together on a question.

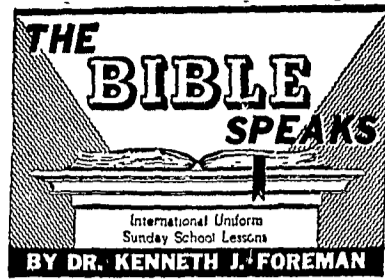
Obviously, it is necessary that these scientists learn to "talk" to each other. They must have the drive and courage to venture outside the security of their own specialty — to find out enough about the other specialties to communicate with their colleagues.

This calls for capable men and women who will also make the effort to keep up in their own fields.

And thought must be given to helping these scientists keep abreast of new developments in other research agencies and other countries. Our workers need the best in publications, libraries and translation and abstracting facilities.

The effect of the lack of such facilities in another field—that of rockets and space vehicles—has been clearly demonstrated. Technical journals giving vital and valuable information lay untranslated while time and money was being spent in doing the same basic research.

The United States, now the unqualified leader of the world in agriculture, must keep that position.



Bible Material: Numbers 27:12-23; Deuteronomy 34 9-12; Joshua 1; Devotional Reading: Psalm 1.

New Leader

Lesson for June 1, 1958



Dr. Foreman

AS LONG as human beings exist in groups, even if the race is nearly wiped out by war or other catastrophe, there will be need of leaders. People will get together. For good and for ill, men operate in groups. These may be immense and elaborate groups like the modern nation; they may be tiny groups like a bird-watchers' club in a small school. They may be highly organized, with enormous buildings devoted to the secretariat alone (such as the United Nations), or they may be informal, like a few boys going out hunting. Whatever the group, it will have, and it will need, leaders. The ancient Hebrews as they entered Canaan were no exception to the rule. God has been leading them, but through a very brilliant and brave man. Now this man is at the point of death. He knows that unless a new leader takes over, all the work he has done will come to nothing.

We Need to Go On

The story of Moses and Joshua, only a small part of which emerges in the Scripture material this week, illustrates many points about a change-over in leadership. It was a crucial, a doubtful, time. Canaan had been reached, not entered, still less won. A slip-up in the new arrangements might be fatal. But the change was made, and it turned out enormously successful. From many thoughts which it suggests we may select three. First, if the old leader has been really good, then he has achieved much that we do not want to let go. If he was good, we don't want to start off in the opposite direction from where he was taking us. However new and different the new leader may be, we whom he is going to lead want him to pick up the old leader's work and carry it on, not

smash it all to pieces or let it slowly decay. The problem for every fresh leader is: How can I carry on my predecessor's work and ideals, without being a rubber-stamp duplicate of him?

New and Old Are Never Alike

A college was for some time without a President. The committee appointed to find a new one was working very slowly, too slowly, some thought. But the committee knew what they were doing. "Any President we get," said one of them, "is bound to be different from the last one. It won't hurt the college to do without a President for a while, so that the new man, whoever he is, won't come as quite such a shock." This is true of churches, nations, organizations of all kinds. The new preacher isn't like the old one, the new president isn't like the old one. No doubt there were people in Israel who, when Moses appointed Joshua, complained about it. The two men were different at almost every point. Readers of the Old Testament may find it an interesting study in character: In what ways were Moses and Joshua different? God broke the mold when he made Moses, he always breaks the mold when he makes man. There was only one Moses, one Joshua, one David. There was only one George Washington, one Lincoln, one Robert E. Lee. Wanting a Leader Number Two to be just like Number One is as useless as wanting one man to live forever.

Leadership Calls For Character

Nevertheless, there are certain qualities of character which all leaders have. We are thinking of God's leaders especially, men who (in the church or out of it) are in harmony with God; not those leaders who are anti-social, giving all they have not for or to, but against, mankind. Moses and Joshua illustrate three very important characteristics of all good leaders, and the investigative reader can discover more. One is firmness of purpose. When either Moses or Joshua set out to do something, he did it, in spite of hail and high water. Having set their course, they kept a firm hand on the wheel. They did not lose sight of the North Star. A second quality shown by these leaders was courage. They dared the unknown, the untried. They summoned their followers to tasks which seemed impossible; but their people knew that these leaders would not ask others to do what they would not do themselves. They were not afraid of what their weaker men into fits of fear. Most important, and most obvious, was their faith.

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BY JACK REICHARD

50 Years Ago

A game of swindle worked on some of the unsuspecting farmers in a western state involved bovine tuberculosis.

Two men, who had joined hands in the racket, fleeced many dairymen. One, well dressed, wearing glasses, called on farmers to inspect their dairy cows, representing himself to be a state dairy inspector. At one farm he found a fine looking herd of cows and condemned a dozen animals as afflicted with tuberculosis, and told the owner on leaving not to say anything about the matter but to sell them for whatever he could get for shipment out of the state.

A few days later the partner of the self-termed dairy inspector came along and asked the farmer if he had any cows to sell. The farmer anxious to get rid of the supposedly diseased animals, felt himself lucky to get \$20 per head.

A New York farmer reported success in the use of common stovepipe soot as a cure for scours in calves. The method of preparing the dosage was to take a tablespoonful of soot, mix it with the white and yolk of an egg put it in the shell and then place the filled shell far back in the mouth of the afflicted calf according to the farmer.

George W. Crowl, well known among Lancaster and Chester County farmers as one of the largest potato shippers in the eastern section of the United States, fifty years ago shipped 276,000 bushels of the tubers during the 1907-08 season. Crowl maintained shipping points at Peach Bottom, Strasburg, West Willow, Lancaster and several places in Chester County. Estimated at 600 bushels to a carload, the season's shipments filled 460 freight cars.

25 Years Ago

Back in 1933, sixty-eight years after Lee surrendered to Grant at Appomattox, no name for the war which that historic event terminated had been proposed upon which all Americans could agree. The term "Civil War" which was most generally being used was not liked by certain elements in the South, while "War of the Rebellion" and "War of Secession" were entirely obnoxious to

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the people of Dixie

For many years the United Daughters of the Confederacy had sponsored the term "War Between the States", but had made little headway in securing its adoption by writers and speakers. The term was criticized as being indelicate.

Most writers refer to the tragic struggle of the 1860s as the Civil War, a short name unmistakable in its meaning and implying no reflection on either North or South.

At any rate the name is not especially important. A war by any name is just as horrible.

Twenty-five years ago this week some 200 Yale students, who called themselves "pirates" swarmed uninvited into a fashionable "shipwreck" party in New Haven and made a sure enough wreck of the place.

Windows and furniture were broken, among other acts of rowdiness. One policeman was knocked cold. Two students were fined \$5 each for starting the incident and the others went free, which was a cheap price for the fun — if one calls it fun.

Accused of stealing six auto batteries which were found under his bed, William Golden of Detroit explained that it took a shock of six batteries to awake him each morning.

A note pinned to a post near her home at Brookline, Mass., resulted in the recovery by Mrs. Harvey Cushing of a pin valued at \$1,000.

Twenty-five years ago the Pennsylvania State Department of Health issued bottled water permits to Elias E. Ander distributor, Diamond Spring Water Ephrata, and the Ephrata Mountain Spring Water Company, Lancaster.

Under a department regulation annual permit for the distribution of bottled water were to be issued by the State Health Department. The permits were only granted after a satisfactory analysis had been received and a check-up of the physical surroundings of the source of water supply was made.

Now Is The Time . . .

By MAX SMITH

County Agricultural Agent



Max Smith

TO CLIP PASTURES — Grasses in most pastures have already shot seed heads and should be mowed at normal grass field mowing height. To allow the grasses to mature will not increase the feed value or maintain milk or meat production. The clipping of pastures at this season will stop weed seed formation and encourage new growth of the grasses. Regular clipping of the pasture every four to six weeks during the season is recommended.

TO CONTROL FLIES — Plenty of moisture and the first step in correcting this problem is to warmer weather usually brings more house flies. Clean out all breeding places for the flies and to practice good sanitation methods, manure piles, box stalls, trash piles, and barnyards should be cleaned regularly to prevent breeding places. Diazinon is the residual spray recommended for dairy barns, steel pens and hog houses, remove animals, cover feed and water troughs, and spray with 1/2 pint of the 25% emulsion in 3 gallons of water. Kolan is another fly spray at the rate of the 25% wettable powder in 3 gallons of water. Both of these should protect from four to six weeks. Barn cleaner pits and manure piles may be soaked every two weeks with one of these to kill fly maggots.

TO KILL WEEDS WHEN SMALL — The best time to try to control weeds is when they are small rather than when four to six inches tall. The use of weedeaters, rotary hoes, or spike tooth harrows in corn fields when the corn is from two to four inches tall is very useful if chemical weed sprays are not used. Weeds are competitors for both moisture and fertilizer elements for every crop. A combination of cultivation and chemical weed sprays should give best control.

TO TAKE TIME TO BE SAFE — The pressure of a heavy work schedule this time of the season causes many of us to hurry and to forget about taking time to be safe. Tractors and farm machinery have replaced the bull and the horse as main causes of farm accidents, but it is not the machines that are to blame, it's the operators. Don't take chances. The loss of a hand, or a foot or your life is very permanent.

The managers of a race track near Brownsville along the Monongahela River published notice of a race, one mile heats, for a purse of \$100, "free for anything with four legs and hair on."

A farmer in the neighborhood, named Hays, had a bull that he was in the habit of riding to the mill with his bag of corn, and decided to enter the animal in the race. He said nothing about it to anyone and rode the bull over the track several times on moonlit nights, until the animal got the hang of the grounds and would keep the right course.

The day of the race Hays came to the track riding his bull. Instead of a saddle he used a dried ox hide the head part of which with the horns still on he had placed on the bull. He carried a small tin horn in his hands. He rode up to the entry stand and offered to enter his bull for the race but owners of the horses entered objected. Hays appealed to the terms of the notice, insisting the bull had four legs and hair on — and that he had a right to enter the animal.

After a great deal of swearing the judges decided that the bull had a right to run and was entered accordingly.

When the time for starting arrived the bull and horses took their places. At the signal to start Hays gave a blast of his horn and sunk his spurs into the side of the bull which bounded forth with a terrible bawl at no trifling speed with the dried ox hide flapping up and down making a combination of noises never heard on a race track before. The horses fled in every direction from the track determined to take the shortest cut to get out of the area and not one of them could be turned back in time to beat the bull. The purse was given to Hays.

A general chorus of objections among the horse owners followed but the fun of the incident put the crowd of spectators all on the side of the bull so that was that.

The United States Cattle Commission reported that there was not a single case of foot and mouth disease among cattle in the United States in 1883.