

How Long Will We Lead?

AS WE PROCEED in our matter-of-fact desperation with the struggle over world power, we may be, even now, losing the battle in a way that might not be apparent for another quarter-century. In such matters usually there is a time lag between the basic change and the general realization of what has happened.

Several years ago in *Chemical and Engineering News*, the suggestion was made that Stalin's "secret weapon" was the training of scientists and engineers in preparation for developing technical power. That weapon no longer is so secret. Some of our best sources of information tell us that today the USSR is ahead of the USA in the number of scientists and engineers being trained. Furthermore, the best quality Russian training and technical work are comparable with ours. An article in the *New York Times*, Nov. 7, dealt with this matter at length, supporting the above contentions with statements by several of our best informed experts.

We have lived too long in the self-satisfied luxury of believing that the training and accomplishments of our technical specialists were so superior to those of the Russians that our position of leadership was safe from threat, military or otherwise.

This matter is important, not only in the manufacture of chemicals, the building of machinery, and civil engineering—it is vital to agriculture. Agricultural progress and nutritional security depend heavily on technical developments. The realization of this fact is not strong with the public, for agriculture is still considered by many simply as plowing, planting, and harvesting. Much of the research that has made possible what is virtually an agricultural revolution, has been done in state and federal institutions and has been taken too much for granted by the public. There is far too little appreciation of the great number of outstanding scientists doing brilliant work in government service to agriculture. It is likely that a strong share of agricultural research will continue to come from government workers. However, universities and industry contribute an effective amount, and industry is increasing its share.

There is now a shortage of trained scientists in the United States and the trends in university enrollment indicate it will become worse. Agriculture is likely to suffer but the results will not show immediately. When and if they become obvious, considerable time will be needed to right the situation. In Russia the trend is in the opposite direction. There are several important factors providing incentive and drive for Russian efforts in

scientific development. It appears that the Russians feel they are looked down upon in this area; the feeling of insecurity is a strong driving force toward proof of ability or superiority. There is a great mass of untilled and unproductive land in the Soviet Union which offers a challenge to scientific accomplishment. During the past year there have been several reports of critical crop failures in the Red area. Serious trouble such as that also provides a stimulus for work. Thus, on the basis of what we now learn of Russian developments, we should expect a great rise in technological improvement during the next generation.

More than ever before the whole world respects technical strength and looks to the technical leader. The production of food is a basic problem and a driving force. The country that can do the most for agricultural improvement and have the most to offer the world in the way of overcoming food problems will hold a strong trump card. The United States is taking some cognizance of this through its foreign technical aid along agricultural lines. But what is being done in this country to put ourselves in such a position that 10 and 20 years hence we shall be able to offer more than anyone else? Scientific advancement in agriculture not only will improve our resources position but it will bolster our prestige.

If Russia could keep the pressure on us in such a way as to allow military considerations broadly to dominate the utilization of our human and intellectual resources; if panic techniques for insincere or shortsighted political purpose pervert the vitally important security measures designed to block the insidious tentacles of Communism in such a way as to make government service unattractive to our best brains, it is conceivable that Russia might gain the dominating position with no more than constant threat of war. Some of Russia's most effective victories in the past decade have not been military. Twenty-five years of skillful manipulation on the part of the USSR conceivably could put that country so firmly in the dominant position of political and material power with so much that other countries want that the United States would not have to be thought of as a serious threat to Soviet domination.

WALTER J. MURPHY, Editor