

## SCIENCE AND THE SPIRIT OF FREEDOM

An essential element in the strength of America is a strong science. But to be strong, science must be free—and freedom of science is in present danger. Let us not sacrifice that freedom in a misguided attempt to preserve it.

by L. A. DuBRIDGE

TEN YEARS AGO THIS FALL as university faculty and student groups assembled for the opening of the first semester it was noticed that some of the professors of the science departments had not returned. They were on leave of absence, it was learned; and there was frequently an air of mystery as to their whereabouts. As the weeks went by more and more scientists quietly left their posts and by the spring of 1941 a major exodus had occurred—an exodus which was to mount to such proportions that by 1944 there was scarcely a university science department in the country whose faculty and graduate student groups had not been cut to ribbons.

And in the meantime, behind closed doors in laboratories throughout the country, there developed one of the most astonishing dramas of human history. News of what was going on did not reach the public until the war was over. Then the American people received the astonishing news that a large group of college professors—and largely very young ones, too—had helped mightily to win the war and bring it to its dramatic conclusion.

The astonishing way in which these few thousand scientists brought highly abstruse scientific knowledge and techniques from the laboratory to the battlefield has been told so often and in such detail that many people have become tired of hearing about it. I assure you that I do not intend to add to their weariness, in spite of the fact that a case can be made for the statement that much of the story has been blurred and even distorted during the past five years.

But my concern today is not for the story of what happened, but the conditions which made it possible. For these conditions must be preserved, not only because they are necessary to preserve our strength in case of a future military emergency, but because the same strength

is essential, whatever lies ahead—be it peace or war, or something else which is neither.

What was it that we, as a nation, had in 1940 which made it possible to avoid disaster and eventually win the victory of 1945? Whether we speak of the field of science, or of industry, or of the military, the essential thing that we had in 1940 may be summed up in one word: *strength*. It was a latent strength, a strength we ourselves did not know we had. It was a strength which had been grievously endangered by the great depression of the early 30's, and by neglect in the late 30's. But the strength was still there, waiting to be called forth.

This strength, this latent energy, existed, of course, in many forms. It existed in the form of virile laboratories of science and technology, in the form of a great and well-managed industrial plant, in the form of a great country blessed with rich agricultural and mineral resources. But most of all, it existed in the hearts and minds of 130 million people—people who were willing to sacrifice whatever was necessary to preserve their democratic traditions.

And just here lies the key to the source of all that strength. It was a strength born of freedom, a strength nurtured and brought to its full power by freedom, and a strength which could be energized to its full capacity to fight for that freedom.

It is not a new thing to point out that freedom is both the goal and the source of vitality of American democracy. But it is, nevertheless, a fact which is being forgotten or ignored in these days. And it must *not* be forgotten or ignored. Our very existence may depend on not forgetting it. Certainly our battle to preserve freedom can hardly be won if we forget either what we are fighting for, or what is our most effective weapon.

The scientists are especially sensitive about this matter

of freedom. Some people think they are *too* sensitive. But the scientists, like others engaged in intellectual pursuits, know that freedom is their life blood. Without freedom there simply isn't any science; there isn't scholarly inquiry of any kind.

Of course, we all know that freedom is an essential feature of the life of any American citizen—freedom to come and go, to buy and sell and own property, to vote for whom he pleases, to work at the job he chooses, to believe and speak and read and listen and think and worship as he chooses.

The scholar prizes these freedoms also—but he prizes another freedom which is of less concern to many others—intellectual freedom. Intellectual freedom means freedom to think, to investigate, to reach his own conclusions, to communicate conclusions to others, to criticize the conclusions of others.

This freedom to express ideas is one of the most precious of all our freedoms. For *only* from new ideas comes progress.

There are today great areas of the world in which freedom of all forms is suppressed, and especially this intellectual freedom. Every dictator knows that the first freedom he must suppress is intellectual freedom—the freedom of research, the freedom of speech, of publication, of opinion. The free exchange of ideas and the free discussion of opinions and of beliefs is ultimately fatal to a dictatorship, and every dictator, of both ancient and modern times, has seen to it that such dangerous freedoms were suppressed.

### Science under dictatorship

The way in which science collapses under a dictatorship is dramatically illustrated by Hitler's Germany and Stalin's Russia. Hitler went to great lengths to suppress intellectual freedom in Germany. As a result scientists and other scholars deserted the German universities, or were driven out of them, by the hundreds. America profited greatly from this exodus, for some of our most brilliant scientists today came in as refugees from German or Italian persecution. And at the same time Germany fell precipitately from its position as one of the top leaders in science in the 1920's to a position of utter mediocrity by 1939, a fact which was of paramount importance in her eventual defeat.

Russia on the other hand was never, as a nation, a great leader in science, though she did have a number of brilliant scientists. But Russian influence on science today is almost at the zero point, largely because the iron curtain prevents any exchange of knowledge with other countries. What information does emerge shows pretty clearly that scientists whose ideas are not strictly in accord with the party line have been purged in one way or another. If Soviet Communism ever had any appreciable number of friends among the scientists and other scholars of this country, that number has certainly today reached the vanishing point. The principles and practices of the Soviet dictatorship are the utter anti-

thesis of all that makes scholarship possible. They are, of course, also the utter antithesis of everything else that makes life worth while. It is for this reason that America stands united in its opposition to the spread of Soviet imperialism and the Communist ideology on which it rests.

But as we battle to defend our freedom from threats from beyond our borders, we must also battle to defend it from attacks at home.

There are two dangers we face here at home—two dangers which threaten us from opposite directions. And just as every military commander is familiar with the dangers of fighting a war simultaneously on two fronts, so we must be careful that, in giving too great attention to either enemy, we are not caught unawares and overwhelmed by the other.

### The danger we face at home

The first and most obvious danger we face here at home is the danger posed by the conspiratorial activities of the agents of a foreign power. The same imperialism which threatens us with its military power abroad seeks also to confuse, to disrupt, to sabotage, and to sap our strength within our own borders. There is no question but that there are many thousands of men and women in this country who are sworn to uphold at all costs the cause of Soviet imperialism and of Communist ideology. They seek to discredit America and its ideals, to confuse our people through lies and distortions, to obstruct at every turn our efforts to keep the western world safe for democracy. Though in numbers this company of men and women is but a puny force in the face of 150 million loyal Americans, they can still do great damage. They use our traditions of freedom to protect themselves while they seek to discredit and destroy those freedoms. In case of a military emergency they would not hesitate to use every form of sabotage to impair our efforts to fight. The Communists of this country constitute a vicious and highly organized group and we face a serious problem in our task of reducing them to impotence.

How do we do this?

That is a question I shall leave to experts. For just here lies the second danger of which I spoke. It is all too easy to adopt laws and practices and regulations which, while *aimed* at the Communists, will ensnare a dozen or a hundred innocent people for every guilty one who is trapped. And if we follow that line, we will have scrapped the basic American principles of justice—and it is the Communists themselves who will be the ones to profit, for they will be able to shout to the world that the American ideals of justice are a hollow mockery.

While we all despise the ideology of Communism, we must find a way to keep it from spreading without falling into the trap of labelling *all* ideas with which we do not happen to agree as being Communist. We do not want Communist propaganda to intrude itself into our schools and colleges, but the challenge is to find a method to prevent this, which does not at the same time

suppress all expression of unconventional ideas and opinions. We fight Communism because we love freedom. Are we forced to sacrifice our freedom in our fight to preserve it? I believe not! But I believe there is a danger that we may.

I believe that there are methods of fighting Communism intelligently, of fighting it by using and not by destroying the tools and techniques of democracy and of freedom. And yet, today we often see those who advocate one method of fighting Communism charging those who advocate another with being Communists themselves. I realize that I, myself, run that risk today—of being called a “red” because I assert that not *all* methods of fighting reds are equally intelligent or effective.

This danger of losing our essential freedoms in misguided attempts to fight for them is present in a critical degree in our universities. Our universities have been the citadels of intellectual freedom. Free discussion of ideas is the life blood of the search for truth. We, in the universities, believe that the way to defeat a bad idea is not to jail the propounder—or even to make him sign an oath that he never had the idea!—but to expose the fallacy of the idea and then to state the truth. Those who have studied the history of European and American universities know that the struggle for intellectual freedom has been a long and painful one, and that we who inherit the fruits of the eventual victory must never give up the fight to preserve what has been won.

There are some, of course, who charge that professors are so fond of their intellectual freedom that they will even protect Communists in order to preserve it. This is a vicious falsehood. We fight to preserve freedom because we believe it is our best weapon against Communism. We believe not only that it is unnecessary to destroy freedom to fight Communism, but that it would be fatal to do so. Freedom made America strong. Freedom will keep it strong. And a strong America is the only bulwark in the way of a Communist world.

### **A strong science is a free one**

As I have said, an essential element in the strength of America is a strong science. And the only science which can possibly be strong is a science which is free. Up until 1940 science in America was free; consequently it was strong; and consequently it could help win the war.

And what of 1950? Now I am not an alarmist who says that the freedom of science is gone. It has no more gone than has any other freedom—yet. But like other freedoms, it is in danger. And it faces the same danger as other intellectual freedoms—that we will foolishly sacrifice it in a misguided attempt to preserve it.

At the end of the war the public learned that certain basic discoveries in science which had been made before the war, in some cases long before, were used as a basis on which to devise valuable weapons of war—radar, proximity fuses, rockets and atomic bombs. The details of how those weapons were made have been properly

kept secret. But some people would go farther and suggest that the principles of science should also be kept secret. They do not realize that science and secrecy are mutually exclusive; if you have the one you can not have the other. If you keep everything secret, you discover that you have nothing to keep secret. Secrecy is the antithesis of all intellectual freedom and it must, therefore, be kept restricted to the minimum possible area.

### **Science and military technology**

There is confusion on this point because of the failure to distinguish between science and military technology. Military technology is the design of weapons and techniques of warfare and activities in this field must obviously be kept secret. Science is the search for knowledge and in this field secrecy is not only undesirable but impossible.

But science faces a more subtle and more terrible danger. We now know that during the war one Canadian and one English scientist were Communists and passed secret information to Soviet Russia. These were profoundly disturbing and disheartening revelations. Could there have been others who did likewise? Are there others now? Naturally many people have been nervous about these questions. Charges and countercharges have been freely exchanged. Unfounded accusations have been made. Men have been dismissed from their jobs—because a college roommate had belonged to the Communist Party back in 1937. Others have been vilified because they defended their friends against charges and insinuations which they knew to be unfounded. And so it goes.

But what are the facts?

If we peer carefully through the smoke and haze we find this solid fact; namely, that not one single *American* scientist who was engaged in secret work during or since the war has ever been proved guilty of, or even indicted for, espionage or treason. Not one!

A few were Communists in 1937-38, as students. But as far as is now known, the thousands of American scientists who have been engaged in military work were 100 per cent loyal and 100 per cent reliable. Apparently, not one of them even accepted a bribe in connection with a war contract! That is a proud record, indeed. And yet many people seem to believe that scientists are a dangerous lot, not to be trusted at all, upon whom all sorts of special restrictions should be placed. Does that contribute to a free science and a strong science—a strong science upon which our very existence might some day depend? Obviously not!

Again, let us remember, freedom is the goal for which we fight, and it is also an essential weapon with which to fight, an essential element of our strength. We can find ways to fight the enemy we face without destroying freedom. Indeed, we can no longer fight effectively—and our reason for fighting will already be gone—if our freedom has vanished.