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----- to provide information and to stimulate discussion. Not to be attributed as official FAS policy unless specifically so indicated.

U.S. Sprays Herbicide on South Vietnamese Rice Crop

The U.S. Air Force has undertaken a drive to destroy rice crops in parts of South Vietnam which are under the control of the Vietcong. The rice is being destroyed by the same chemicals which are used to defoliate jungle cover, but officials describe the herbicide as nonpoisonous, and say that "any food that survives its deadening touch will not be unpalatable." The program began last spring, and has affected "only a small fraction . . . of cultivated land in South Vietnam"—50,000 to 75,000 acres is the official estimate. *The Vietcong control or contest 70 per cent of the land area of South Vietnam.*

Officials say that no herbicide missions have been flown or will be flown in heavily populated areas. There has been no crop destruction, for example, in the Mekong Delta, officials say.

There is concern that any attempt to destroy crops in heavily populated areas dominated by the Vietcong could only send a new flood of displaced Vietnamese to join South Vietnam's 730,000 war refugees. It is also suggested that unless the weed killer were applied on a vast scale, a move that would probably be politically impermissible, it could have little effect in heavily populated areas. "There is just so much food in the delta that crop-destruction missions here would have no real military value," an official said.

The Air Force transport planes that carry on both defoliation and herbicide are spending more than half their time on herbicide. The crop-destruction efforts are expected to grow next year.

Experience has shown that when the chemical is applied during the growing season, before rice and other food plants are ripe, it will destroy 60 to 90 per cent of the crop. It is too early to be sure, but there are suggestions that the herbicide could be a powerful weapon against the Vietcong. As the size of the Vietcong units has increased in sparsely inhabited jungle and mountain areas, so has the importance of guerrilla food-growing programs. Some Vietcong units are devoting as much as 50 per cent of their manpower to growing food, according to intelligence reports.

Crop destruction is only one part of a large program of "food denial" to the Vietcong. The United States' 173d Airborne Brigade is conducting a "harvest protection" operation in Binh Tuy Province, where troops are holding off Vietcong rice collectors while peasants are required to sell their surpluses to the Government or to the commercial market.

"Until this operation materialized, a plan to destroy the rice by spraying had been in the making."

Even "harvest protection" programs are politically dangerous. In some cases, the peasants have been unable to sell their rice. It has therefore been confiscated in exchange for certificates redeemable later. But the peasants mistrust the certificates.

Both United States and South Vietnamese troops often try to destroy supplies of harvested rice that they find in areas under the political control of the Vietcong. All such supplies are described in press communiqués as "VC rice caches," but officials concede that in some cases the troops have destroyed the property of civilian peasants, who may well remain re-

War Misunderstood in Europe, Misrepresented in Australia

Efforts by Secretary of State Dean Rusk to interest the members of NATO in joining forces with the U.S. in Vietnam seem to have had little effect, despite his speeches in Paris. Those countries are not convinced that it is their war, and they are not convinced that the U.S. sincerely means to and seeks to end it. Meanwhile, two Australian correspondents have leveled serious charges of misrepresentation of casualty figures against American military public relations men in Vietnam. They say the Americans falsify the figures to make U.S. losses appear less than they are. Denis Warner of the *Sydney Morning Herald* wrote that Americans Col. Ben W. Leagre and Lieut. Col. Dan Biondi are "engaged in the business of turning defeat into victory." Pat Burgess of the *Sydney Sun* said, "No one in Saigon believes the kill rate given by American briefing officers daily in their briefings to the press." Mr. Burgess said the American aim was not to conceal losses from the enemy but to make them less stark for the American public. (*N.Y. Times*, 8 & 15 December 1965)

SHORT- AND LONG-RANGE ANSWERS TO HUNGER

The U.S. has agreed to double the present rate of shipment of wheat to India, in order to avert an almost certain famine. If carried out, the assurances imply that one out of every three bushels of wheat grown in the U.S. will be going to feed Indians. Severe droughts have caused poor crops in India, but the problem of whether the ports of India can handle the increased arrivals of wheat ships still stands in the way of a solution to this year's problem.

The Department of the Interior has announced that a "clean" version of the fish flour banned in 1962, because the processed fish included heads, tail fins, and viscera, has been produced, and is being manufactured at the rate of 100 pounds a day. The Food and Drug Administration has indicated that it has no objection to domestic marketing of the concentrate, which is 80% protein. Cost of the fish flour, which is odorless and almost tasteless, has been estimated at 18 cents a pound. The National Academy of Sciences has said that 50 million tons of the concentrate can be obtained from the sea with present methodology on an annual basis. It calculated that the sea could yield eight times the present annual catch. (*N.Y. Times*, 23 & 24 December 1965)

sentful when attempts are made later to gain their political loyalty.

Rice is not easy to destroy. Soldiers have found it one of the most maddeningly indestructible substances on earth. Even with thermite molten-metal grenades, it virtually will not burn. The scattering of rice does not prevent its collection by patient men.

Some units have been asked to undertake an experiment in making such rice caches unpalatable without poisoning the food. Their instructions are to put it in a hole—"if we can find one," an American officer grumbled—and to cover it with a mixture of water, harmless yellow dye and shark repellent. (*N.Y. Times*, 21 December 1965)

RABINOWITCH REJECTS CRITICS OF SCIENTISTS IN PUBLIC LIFE

The following is an abridgement of an article which appeared in the January 1, 1966 issue of *The New Republic*:

After the first atom bombs led to prompt Japanese capitulation, "atomic" scientists descended on Washington. They became fashionable speakers before women's clubs, Rotary conventions and television forums. Their message was simple: with the emergence of nuclear weapons, wars must end; penalty for failing to heed this lesson will be a universal catastrophe of nuclear war.

Political and social scientists saw natural scientists invading their preserves. Some joined them; the language of a Hans Morgenthau, or a Henry Kissinger—outstanding theoreticians of hard-nosed international politics—often became quite similar to that of the atomic scientists. Others remained unconvinced. Scientists, they said, exaggerated the rationality of nations and their leaders, and neglected emotional factors, national traditions and personal ambitions. They preached generalities, instead of considering real situations.

A high point of the scientists' influence in American politics was reached in the Kennedy Administration. The President's intellectual affinity to academic science produced growing appreciation not only of the destructive, but also of the potentially constructive role of science in world affairs. The Cuban crisis helped to heighten public concern with the threat of nuclear war.

Since then, great changes have taken place. The concern with the arms race, with the possibility of nuclear war unleashed by miscalculation or error, and with the acquisition of nuclear weapons by new nations, has subsided. A feeling has spread that the atomic arms race had led to a stable stalemate, that war between major nuclear powers has become impossible. Other dangers and challenges, in particular the racial problem, have moved to the forefront.

Leaders of some nations saw in the deadlock between major nuclear powers, the U.S. and the U.S.S.R., a chance to play more freely their own political game. De Gaulle, Sukarno, not to speak of Mao, embarked with abandon on pursuit of their own power. The conviction that "one world"—in Wendell Willkie's words—is bound to emerge from the

universal fear of nuclear destruction, is disappearing; the tradition of international anarchy is reasserting itself.

Those who have been apprehensive about the intervention of scientists into public life now feel the time is ripe to put an end to it:

- In a review of Ralph Lapp's book, *The New Priesthood*, John W. Finney, of *The New York Times* staff, accuses scientists of using the "mumbo-jumbo" of scientific terminology to make political leaders feel incompetent. Scientists, he argues, are heirs of medicine men and priests, who had used their mumbo-jumbo to overawe people.

- A review of Alice Smith's book, *The Scientists' Movement in America*, in *The Nation* by Elinor Langer of *Science* staff, accuses the book of perpetuating the "myth of the important scientists"—which it is time to debunk. The only successful political activity of scientists had been the defeat of the May-Johnson bill in 1946; for the rest, history has gone on practically unaffected by them.

- In the journal *Conflict-Resolution*, published by a group of social scientists at the University of Michigan, Donald A. Strickland and Kathleen Archibald, of the University of California, severely criticize four books. One is by the journalist, D. W. Cox: *America's New Policy Makers; the Scientists' Rise to Power*; another by that distinguished public servant, David E. Lilienthal (*Changes, Hope and the Bomb*); the third, an anthology edited by the late Morton Grodzins, professor of political science at the University of Chicago, and myself (*The Atomic Age*); the fourth, a collection of my own essays (*Dawn of a New Age*). The critics find that these four quite different books share a common heresy—that the scientific revolution (a mythical event anyhow!) calls for a new beginning in world affairs. The route which all these authors recommend is, they say, "an old one, but not well marked on the road maps of the real world. It is labeled faith, hope and charity, and it leads to a destination called 'world community.'" When dealing with politics, scientists forget their careful professional approach to problems on hand and preach generalities. Have we not lived two decades "with these awful weapons," and no nuclear bomb has been exploded in anger, or gone off accidentally? This proves, the critics believe, that the dour warnings of scientists and their allies have been unfounded.

Many other examples could be quoted from the literature, as well as from life: the difference between the role played by Jerome Wiesner as Science Adviser in Kennedy's Administration, and that of his successor in Johnson's; the *de facto* absence of a science adviser from the State Department.

Nations, like men, resent prophets (or doctors) who say that if they do not reform they will perish. If, after 20 years, the patient still lives, the doctors must have been poor diagnosticians. But 20 years is a short span in the life of nations!

In contrast to prophets and ideologists of the past, who were moved to change the course of world affairs by their religious *beliefs* or their political or social *convictions*, scientists are people possessing a certain *information*. They are like radar operators who see an approaching storm and urge the captain to change the course. Scientists are not important; *science* is. It has created a new—and rapidly changing—human habitat. Nuclear physics has multiplied by a factor of a million the possible destruction in war; biology has permitted doubling of life expectancy at birth, and is thus causing a "population explosion" in many parts of the world; electronic communication has made all peoples next-door neighbors. Whether scientists are aware of the complex economic, psychological, ideological and personal forces af-

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Robinowitch Rejects Critics of Scientists in Public Life

(Continued from Page 2)

fecting national behavior—some are, and some are not!—is not the question. The question is whether men whose background lies in politics, economics, law, religion, are sufficiently aware of the changes caused by science.

Some suggest that the answer is "yes," that by now intelligent people everywhere, as well as the governments advised by their military experts, are fully aware of the threat of nuclear war; that political leaders, advised by economists and technical experts, know all about the possibilities of constructive application of science to economic development. Unsolicited advice by scientists may have been justified on past occasions—say when they urged the exploration of nuclear fission for military purposes in 1939; or when they tried to impress on American leadership the grave implications of the first use of the atom bombs in 1945. But now, their knowledge is common knowledge. Self appointed radar operators please leave the bridge to the captain and professional sailors! You will be called for consultation when and if your advice is needed.

This is a nearsighted attitude. Science has assumed such an important role in determining the parameters of national and international life, that participation in national decisions by people whose world picture has been affected by the study and practice of science (even if this picture has its own bias), is indispensable for many major political decisions—to correct the bias of the more traditional molders of national decisions, such as men with legal training. I do not believe that scientists or engineers will ever replace the legal profession in its preponderant influence on the affairs of state. (One reason is that the scientific profession is incompatible with long periods of full time participation in politics—although in the Soviet Union, much of the present leadership, from Kosygin and Brezhnev down, do have an engineering background.) But it is in the national interest to stimulate, and not to discourage, the involvement of scientists in public affairs. Recently, this involvement has been decreasing. The responsibility for this rests, to a large extent, with the scientific profession itself. Most of its members are "too busy"; the few who have concern with public affairs are often preaching in vain to their colleagues. A new breed of scientist may be growing up, young men and women studying science with the deliberate intention of applying what they learn to public administration and political life, rather than to research and teaching.

The Lower Mekong Plan, described by one of its originators, Professor Gilbert White, in the *Bulletin of the Atomic Scientists*, received favorable consideration in the US government and found its way to President Johnson's statements on Vietnam. There is no doubt, however, that in the minds of political leaders such constructive applications of modern science are "fringe" programs; primary importance is still assigned to political and military plans. When our government was trying to muster a majority for its proposal to deny the vote in the United Nations to nations refusing to contribute to the costs of the UN peacekeeping operations, it threatened to withdraw support from the UN Special Fund—in the hope that this threat would persuade African and Asian nations to support the US proposal. The idea for which the Special Fund stands: to put science and technology in the service of developing countries by a cooperative international effort was thus treated as something expendable. It seems to me that international cooperation in science and technology could and should be given a much higher priority. The importance of such cooperative projects in bridging the moats separating the West from the USSR, and in preventing the developing nations from becoming a source of increasing East-West tension, undoubtedly would be recognized more fully if individuals with a scientific-technical back-

ground had a larger part than usual in the forming of national policies.

Those who want scientists to stick to their classes and laboratories do so at great peril. For what is happening in the world today shows that, despite a measure of understanding by political leaders of the destructiveness of nuclear weapons and of the contributions science can make to the creation of a viable humanity, this understanding remains peripheral. When critics point out that scientists have had very little actual influence on political decision since 1945, they are right; but they confuse what *is* with what *should be*. The fact that nations have largely returned to the ways of pre-scientific political thinking and acting, merely proves that the forces of inertia are strong, and the capacity for wishful self-delusion ("nothing has been really changed by the scientific revolution, and anyhow, there is no such thing!") practically unlimited.

The slowness with which nations adapt themselves to their new habitat, created by science, is nothing to gloat about. Many species have perished in the course of biological evolution because of insufficiently rapid adaptation to changed climate, or other external conditions. The same fate may overtake mankind if it does not adapt itself to the new conditions of its existence, even if these conditions have been created by man's own social evolution.

Still, 20 years is a short time. The gestation of other new forces in human consciousness—religions such as Christianity, Islam or Buddhism; ideologies such as Socialism, Nationalism or Communism—has taken much longer. Those who—as most scientists do—see the need for, and the possibility of, much more radical changes, to make mankind viable in the age of science, should not be dismissed as incompetent and unrealistic amateurs in politics.

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OF INTEREST . . .

The State Department has allowed physicians and medical scientists who are invited to visit China, North Vietnam, North Korea, Albania, and Cuba permission to travel there. The tentative move leaves the response up to those countries. (*N.Y. Times, 31 December 1965*)

A *Times* editorial called former President Truman jingoistic for his remark that Senators Robert and Edward Kennedy were "outsiders, just as I am, and they have no more business sticking their noses in than I have," to criticize the President's policy in Vietnam. It concluded, "Mr. Truman is entitled to speak his mind, but so are the Kennedy brothers, and so are all Americans who have doubts about the wisdom of the present Vietnamese policy." (*N.Y. Times, 24 December 1965*)

Senator Long of Missouri is deciding whether to hold public hearings on wire-tap complaints stemming from F.B.I. activities in Las Vegas. A recent suit was filed against the F.B.I. agent in charge of the Las Vegas division, and three of his special agents, for \$6 million in invasion-of-privacy damages. The Central Telephone Company and six of its employees were also named in the suit. (*N.Y. Times, 18 December 1965*)

A recent psychiatric study at the University of Michigan indicates that more than half the drivers responsible for a series of fatal automobile accidents were suffering from some form of mental illness. Diagnoses of mental illness were avoided in borderline cases. Motorists involved were prone to have good driving records for years, and then a series of minor accidents culminating in a fatal collision. Suicidal motives and other serious personal crises were suspected to be responsible for many road deaths. (*N.Y. Times, 24 December 1965*)

Federal health officials estimate that as many as half of the 250,000 persons in institutions for the mentally retarded have not had adequate examinations to be sure they belong there. Dr. Paul Pearson of the National Institutes of Health reported that many applications are received from large institutions, saying that half their patients have never had complete medical evaluations. The institutions want money

for staff to make the evaluations, and hope for funds to repeat the work every few years. Dr. Jaslow of the Public Health Service has commented that 20% of children whose parents think they are mentally retarded are suffering from a variety of other handicaps. (*N.Y. Times, 21 December 1965*)

The dangers of X-ray radiation to unborn children and reproductive organs of mothers is avoidable by a new method of measuring the size of the fetus in the womb. The instrument produces sound waves of high (inaudible) pitch which produce varied echoes when they encounter flesh and bone. An oscilloscope is used to record the "picture." (*N.Y. Times, 16 December 1965*)

Deputy Secretary of Defense Cyrus Vance was quoted in the campus newspaper of the University of Pennsylvania as saying that the U.S. is making limited use of arsenic and cyanide compounds over the rice fields of South Vietnam. Research on arsenic and cyanide poisoning, anthrax, and influenza as weapons of war is continuing at the U. of P. Institute for Cooperative Research. Protests and requests that the research be terminated were raised by students and faculty, but a resolution condemning the research on the grounds that it "violates the moral principles and compromises the integrity of the University" was defeated by the Faculty Senate 182 to 83. (See page 1 for more on rice.) (*SSRS Newsletter, December 1965*)

Magnesium pemoline is being given to elderly patients at the Albany Medical Center in experiments to determine whether the drug has beneficial effects on the memory. Tests on rats have seemed to indicate that it does. It is believed that the drug increases the production of ribonucleic acid in brain cells, and that this influences the permanency of memories. (*N.Y. Times, 25 December 1965*)

Dr. David Krech of the University of California, Berkeley, in a speech at the opening session of the annual meeting of the American Association for the Advancement of Science, urged scientists to begin thinking about the consequences of advancements in psychology and the biochemistry of the mind. "I don't believe that I am being melodramatic in suggesting that what our research may discover may carry with it even more serious implications than the awful, in both senses of the word, achievements of the atomic physicists. Let us not find ourselves in their position of being caught foolishly surprised, naively perplexed, and touchingly full of publicly displayed guilt at what they had wrought." (*N.Y. Times, 28 December 1965*)

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