

letters

As well as suggesting priorities, the Bromley report sketches the drastic consequences of cuts such as those we face in nuclear sciences for FY 1977. But nuclear sciences is not alone. Government support of basic research has been declining steadily since 1967.² We firmly believe the time has come to promote aggressively public and official appreciation of basic research lest its accelerating strangulation continue.

We strongly urge that future funding for all basic research, and nuclear sciences in particular, not be allowed to fall below that of FY 1976, adjusted for inflation.

Feeling as we do on the above issues, we share the concerns expressed by C. S. Wu in her letter to the President.³ Therefore, we ask you to join us in sending letters of this type to officers of The American Physical Society, Administrators in ERDA and NSF, and to members of Congress.

References

1. Physics Survey Committee, Part II (1973), page 370 (the "Bromley Report," chapter on "Consequences of a Declining Budget").
2. Editorial by C. S. Wu, PHYSICS TODAY, December 1975, page 88.
3. Letter by C. S. Wu, PHYSICS TODAY, January 1976, page 99.

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Limited nuclear war

In an obvious effort to make the limited-war doctrine more acceptable to the developing nations and to others who are convinced that a nuclear war threatens all human life on the planet, the US government requested the National Academy of Sciences to report on the "Long-Term Worldwide Effects of Multiple Nuclear Weapons Detonations" and a study bearing that title was released 4 October, 1975.

The Arms Control and Disarmament Agency, which financed the study, instructed the special committee formed to conduct the study to assume that the entire nuclear exchange would be limited to explosions in the northern hemisphere between latitudes of 30 and 60 degrees in the lower atmosphere over land and that no account be taken of the immediate loss of human life. Such questionable assumptions forced the committee to eliminate from its considerations any possibility of nuclear strikes at surface or underwater naval vessels or space satellites. Also excluded were all military bases or allied na-

tions outside the above-mentioned latitudes. In other words, since the ground rules for the study were apparently based on the Schlesinger doctrine of limited nuclear war, even if they were not spelled out in those terms, it should be no surprise that the study concluded in the words of NAS President Philip Handler "in a decade or so after the event, in areas distant from the detonations, surviving humans and ecosystems would be subject to relatively minimal stress attributable to the exchange."

To minimize the impact of a nuclear exchange on food production, the report states that "Bell and Cole estimate it would require 11 years to rebuild beef and dairy cattle (in the US) in numbers to former levels following a 90% loss of female breeding stock. Similarly, sheep would take seven years, swine one and one-third years and poultry one-half year to rebuild after similar destruction" (page 96). Since the committee was not allowed to make any assumptions about the loss of human life in the nuclear detonations, it did not have to worry about who would organize the breeding. Perhaps the poultry, cattle, sheep, etc., would breed themselves like the Shmoos in the Li'l Abner comic strip.

The report can thus conclude in the paragraph following the one just cited: "It is reasonable to assume that mankind in combatant and noncombatant nations would recover from a nuclear war much as it recovered from other major disasters . . . The most productive land would probably be occupied and tilled within a short time after a nuclear exchange."

It is shocking that a number of scientists, many of whom are distinguished in their fields, should find themselves taking part, even unwittingly, in the preparation of this pseudo-scientific, Strangelovian report.

It is the responsibility of scientists to alert the peoples of their countries to the dangers from continued escalation of the arms race, to the dangers from nuclear arms proliferation, and to the dangers of the Schlesinger limited-war concepts. The National Academy of Sciences should be devoting its efforts to meeting these dangers and not to selling the public on the safety of nuclear war.

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Monopole debate

I was dismayed to find a statement in your October issue to the effect that "... Julian Schwinger ... developed a consistent theory of monopoles." This statement completely disregards my proof of the noncovariance of the Dirac

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