Letters

Nonprofit R&D and the Free-Enterprise System

The position of the American Council of Independent Laboratories with regard to commercialized research at universities and "nonprofit" institutes has been fairly put in Elinor Langer's recent report (News and Comment, 17 Apr., p. 273). The last sentence, which reflects J. H. Holloman's theory, certainly requires rebuttal, however. Basically it concerns the survival of the fundamental philosophy of American government. [Langer reported that Holloman, Assistant Secretary of Commerce for Science and Technology, "has been doing some stumping for the principle" that industry should "give more research and development work to universities." The sentence referred to said, ". . . while . . . in the short run the civilian technology program will lead industry to turn to universities more readily, perhaps at the expense of some private labs, in the long run any program directed toward a basic expansion of the civilian economy should work to the benefit of all participants in the field."] Implicit in a free-enterprise system is equal opportunity to compete. Government may abuse its privilege by taxing one section of industry to support that industry's competition or—what amounts to the same thing—exempting the competition from paying taxes.

The fact that independent, tax-paying scientific laboratories are relatively small and may be engaged in R&D does not alter the morality of the situation. Holloman might with equal logic argue that the taxes of Chrysler, Ford, and General Motors should be used to subsidize a government factory or, better yet, a nonprofit "institute" to turn out superior vehicles. Since such a factory could have available large funds and would be blessed by being free from the burdensome necessity of paying taxes, it would, without doubt, produce vehicles at a considerably lower price than its tax-paying competitors and thus increase the number of cars in each household. Then—to paraphrase Langer's words—even at the expense of some of these private industries, in the long run an expansion of the economy by an increase in the number of cars should work to the benefit of all participants in the field.

And who is to pay the taxes to run the government now? Well, there's still a chemical industry. And if that—and others—fall too? Well, the people still pay taxes, and besides "they" will own all of industry.

If we're going to live under socialism, at least let us vote on it and not becloud the issues by representing that, if reached bit by bit, it will "work to the benefit of all participants in the field."

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. . . The point that is missed by most writers, including your reporter, is that tax-supported universities frequently perform these "research" services for a fee, and the results, including any patents developed, are for the exclusive benefit of private parties. The American Council of Independent Laboratories considers such practices unfair, unethical, and of course contrary to free-enterprise principles.

The vague term "socially useful" has been used in explaining what we regard as socialistic practices. As your writer says,

> Many bystanders, while publicly lamenting the trend to commercial research, have privately rejoiced to see the opportunities develop and . . . favor still closer ties between the academic and the business communities.

This school of self-interest is no doubt back of the proposed Civilian Industrial Technology program which was recently "thoroughly emasculated in Congress." This program would provide funds for the support of extra staff at universities to perform technical services for industry. It would take for its model the Agricultural Extension Service, which was set up in 1862 when the farmer had no radio, no electricity, no telephone, one weekly newspaper, and one yearly farmers' almanac and was 30 miles from the county seat, without a car and without a road, and there were no agricultural schools. This is the model that is supposed to assist today's industry!

It is ACIL's opinion that consultants and engineers *in business* are better prepared to advise and assist *business* in developing the economy of our country.

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Birth Control: Science and Values

In "Science and the new humanism" (*Science*, 10 Jan., p. 111), Hudson Hoagland states as one of his conclusions:

> Racial discrimination, chauvinistic nationalism, and objection to population control by methods of contraception represent value systems based on archaic and parochial notions at variance with what science has learned about the nature of human conduct necessary to advance cultural evolution in the nuclear age.

As a physical scientist I must register a protest at his judgment concerning population-control methods.

I concur with Hoagland that elimination of racial discrimination and chauvinistic nationalism are advances in human behavior. Granted that there is necessity for population control in certain countries like India, science does not dictate the necessity for using a particular method, for example contraceptives, for attainment of population control. Science—which is, in G. G. Simpson's formula, simply an exploration of the physical universe—increases man's knowledge of the various means available for population control—contraception, rhythm, periodic continence, sterilization, and others. The effectiveness of any of these means may of course be evaluated by established scientific methods; however, the particular means selected by any individual or applied on a national basis are many times based on value judgments that rest outside of the scientific or biological realm, namely, on convenience, moral, philosophical, theological, or even trivial reasons. To reduce moral, philosophical, or theological reasoning to "archaic and parochial notions" reveals either a lack of

the concept of true science or true humanism or misunderstanding of certain value systems.

Familiarization with the moral objections to utilization of certain contraceptive methods reveals that the concept of totality of marital love demands the complete oblation of the entire persons in such a sublime communion. The theologian R. A. McCormick, S.J., has recently discussed the Catholic position in some detail ["Conjugal love and conjugal morality," *America* **110**, 38 (1964)].

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Hazards of Pesticides

Thanks are due to Elinor Langer and *Science* for the description (News and Comment, 3 Apr., p. 35) of the Lower Mississippi fish kill by pesticides. Information on this very serious state of aquatic affairs is much needed, and it is to be hoped that *Science* will continue with other articles as new information develops. This Lower Mississippi fish kill would seem to be so important that it is surprising that it is not first-page news all over the country.

Since Rachel Carson's *Silent Spring* there has been a rash of pamphlets attempting to justify the widespread use of pesticides. These publications make interesting reading in the light of recent events in the Father of Waters. In spite of repeated assurances that endrin and dieldrin were safe, obviously they are not safe. They have not been adequately tested. Have any of the new insecticides been adequately tested? Perhaps this is a good time to rethink the problem of release of poisonous materials in the environment. A few suggestions for changes in the program might be in order:

1) Stop the use of endrin and dieldrin immediately and destroy all stocks of these poisons. They are obviously too persistent and too dangerous to use.

2) Restudy all insecticides which are persistent enough to show any accumulation from season to season in soil, water, or organisms.

3) Retest all insecticides. Those in use have been declared "safe." Safe for what? Man only? It is possible that long-term ecological effects of the use of these materials may be more detrimental than the effects of the insects they control.

4) Greatly expand research into methods of biological control of individual species of pests. Species differ in structure and function or they would not be called species. Concentrated study of each species may show points of attack by which the species may be controlled without playing havoc with the rest of the environment.

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I believe that a publication like *Science*, which is for people presumably dedicated to objectivity, should be above such articles as the one by Elinor Langer headed "Pesticides: Minute quantities linked with massive fish kills; federal policy still uncertain." The article begins by stating as fact something which has been very carefully qualified in several other reports. It goes on to present a distorted point of view and condemns the role of government in regulating pesticide usage as "weak and confused," "piecemeal and inadequate"; "results are often dissipated in political and bureaucratic bickering." This seems grossly unfair, unless one believes that any commercial product should be banned by Washington edict upon receipt of the first report that it might be causing trouble. The article leaves the impression that the various programs for registration, recommendation, and use of pesticides are haphazard and based on inadequate evidence, when in fact they constitute one of the best-ordered complex undertakings in our society.

The use of pesticides is essential for the continued production of food and fiber crops, for the protection of human health through control of lice, flies, rats, cockroaches, and for such miscellaneous purposes as control of undesirable species of fish. The state agricultural experiment stations, the United States Department of Agriculture, and the Food and Drug Administration all have very strong programs aimed at the control of pests with minimum danger to the crop or to the consumer. Any change in those programs should be based on a careful evaluation of facts, not on emotions or possibilities.

No responsible official will deny that some pesticides, especially when misused in high concentrations, can be dangerous. The public has a right to know about this danger, and people are being warned repeatedly in every possible manner. However, in our worry about this problem, let's not lose sight of the fact that we must have food and clothing from crops whose production would be impossible or much more expensive without pesticides. In particular, the city dweller should be given a balanced account of the situation, because he knows the least about agriculture.

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Lewis's suggestion that the Mississippi fish kills are the "first report" that the pesticides in question "might be causing trouble" seems to me to overlook substantial information acquired by the Fish and Wildlife Service and by independent investigators, not to mention Rachel Carson and the President's Science Advisory Council panel. Also, although Lewis's loyalty to the Department of Agriculture is commendable, not even Secretary of Agriculture Orville Freeman would care to defend the thesis that the registration of pesticides "constitute[s] one of the best-ordered complex undertakings in our society." In testimony before a subcommittee of the Senate Committee on Government Operations on 15 April, Freeman described how a proposal, which he favored, for more exchange of information between federal agencies on pesticide registrations had been held up since last June by "the usual pulling, tugging, and hauling that goes on between government departments." He also acknowledged that coordination among federal agencies in investigating the fish kills had been "very poor." Trembley will be pleased to note that Freeman also called for a crash program to develop environmental and biological methods of pest control.—ELINOR LANGER

Multiple Authors and Indexes

I would like to amplify Page's theme in his editorial "Some perils of authorship" (10 Apr., p. 139) with pragmatic, though tangential, information. Although Page examines policies pertaining to primary publications, he neglects the important subject of secondary publication through indexing and abstracting media.