Letters

Congress of Scientists on Survival

I am deeply disturbed by the news report by D. S. Greenberg [*Science* **136**, 1041 (1962)] on the assembly of some 700 people, most of them professional scientists, who met in New York from 15 to 17 June under the name of the Congress of Scientists on Survival. Is the report an example of the careful and disinterested assessment we expect to find in *Science*? I cannot think so. Since it will be some time before the proceedings of the congress are available, so that interested persons may assess its results for themselves, I should like to present, from my own experience, some qualifying observations.

First, confusion there certainly was at the final business session, centering around the complex and important issue of how scientists can most properly and effectively contribute their knowledge to the making and implementation of decisions which affect the very survival of mankind. However, to state that the net result was "virtually nothing" but "confusion and bitterness" hardly approaches accuracy. If the reporter had his reasons for giving special emphasis to the views of those who felt bitter, he should have at least noted that there were many (my own impression was that they formed the vast majority) who sustained their interest in and commitment to the purposes and potentials of the congress and expressed a desire to be involved actively in its ongoing work.

Second, that some of the 40-odd workshop sessions were disappointing is not to be denied, nor is it surprising. No one expected the impossible. Many of the sessions, on the other hand, were most productive and laid the basis for ongoing work. Furthermore, no hard-and-fast distinction between consultants and other workshop participants had been planned. Workshop participation was limited so that everyone present could take part in the discussion. It had been expected, from advance registration, that there would be many in the "audience" equal in stature to many of the consultants.

Third, one could point out many statements in the report that require specific correction. For example, there was a hand vote on the four resolutions, not "shouted approval." Furthermore, the decision to pass on the responsibility for formulating plans for S.O.S. organization and continued activity to a council which would function after the meeting was not a last-minute, emergency decision. It had been made by the steering committee prior to the business meeting and was based on the judgments and wishes of those who expressed interest in acting on the council.

There are many other such points, but I prefer to leave them for others to correct. The basic problem, which may not have been clear to readers of the report, was how to interpret the primary aim of the congress, as clearly stated in the program and fully accepted by final vote—that of "uniting the energies of scientists and the efforts of their organizations in a positive program for peace and a world free for individual fulfillment and social progress." This means neither "pure" research nor "pure" action. Unfortunately, however, this was the false dichotomy which was posed at the business meeting and which blurred attempts to discuss the most proper and effective way for scientists to bring their information to bear on the formation of national programs and policies.

There are any number of serious questions which could have been raised and thoughtfully considered at the business meeting. For instance, at what point are the members of a body sufficiently of one mind to face the responsibility of stating their position publicly? (as the congress did on the advisability of halting high-altitude testing until its possible effects could be weighed, or as the anthropologists did on the subject of race). How can significant information be collected, assembled, and made available to such groups as Women Strike for Peace? (It had been hoped that these groups would send representatives to the congress, and they did.) How can scientists become more actively involved in governmental planning and policy-making agencies? (Two of the four resolutions passed were addressed to this question.) What role should the congress play in encouraging or helping to implement research in crucial areas? How can the congress develop machinery for coordinating the work of the various scientific peace organizations? How can the congress most effectively funnel important information to the public? (One can envisage, for example, leaders of S.O.S., the Federation of Atomic Scientists, and other scientific peace organizations holding a series of conferences with responsible leaders of public opinion —leaders of civil rights organizations; leaders of fraternal, business, and veterans organizations; labor leaders; religious leaders; and so on—to discuss whether the groups they represent could incorporate in their programs some funneling of scientific knowledge to the public.) Opinions on these and other questions might have been brought onto the floor—not for resolution, which would have been impossible in so large a body, but for referral to the interim council.

Hindsight is always easy. It probably would have been helpful had the steering committee prepared a list of such questions as the basis for discussion, rather than a statement of conference aims. In closing I must ask, however, Did *Science* play its proper role in contributing to clarification of issues along such lines, or did it merely further muddy the waters?

ELEANOR LEACOCK
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The news item on the Congress of Scientists on Survival held in New York on the weekend of 15 June defined very clearly the aspects of the conference which were disappointing. As one of the participants, I shared some of this disappointment. However, although the report gives the impression, perhaps inadvertently, that nothing was achieved at the congress, I

should like to emphasize certain of its constructive aspects.

First, there were several very useful presentations and discussions which were both stimulating and enlightening—for example, the paper by Gardner Murphy. Second, as at most large meetings, much was achieved in the halls and at the snack bars, outside of the formal sessions. It was here that scientists had the opportunity to meet with their colleagues and, under the stimulus of the meeting, exchange ideas pertinent to their individual interests and specialties.

The considerable confusion at the congress reflected in part the complexity of the problems to which the congress addressed itself and in part the diversity in background and orientation of the participants. This diversity led to a number of divergent assessments of the problems under consideration, and therefore to a number of conflicting images of the nature and intent of the congress. Some of those present felt that the problem of survival in a nuclear age is so complex that we haven't even begun to ask the right questions as yet, much less attempt to offer solutions. They believe that a necessary first step consists of getting together as many concerned scientists and scholars from various disciplines as possible, to talk to each other and to lay the groundwork for a continuing effort. Others, at the opposite end of the spectrum, felt much more certain of the nature of the problem and of the answers it entails. They consider it imperative that scientists make recommendations both to the public and to political leaders. Those who held this viewpoint considered it natural that a number of nonscientists should be included in the congress and felt that political leaders should be instructed as to what steps they ought to take. It was inevitable that these views would clash. But the clash, in itself, was not necessarily unhealthy. For it was only through the debates that ensued that some of the issues became clarified. Although such a process may be painful to all concerned, it is probably the necessary prerequisite to the birth of a new interdisciplinary effort.

Certainly there is need for an organization which can bring together the various data, concepts, and insights which apply to some of the major problems confronting our 20th-century nuclear-technological society. It is also clear that such an effort must

rely heavily on the participation of social scientists.

An imperfect start on the part of a new group is better than no start at all. If there were shortcomings in this past congress, then let us all work for a more perfect one in the future.

TOM STONIER

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The failure of the New York "Science of Survival" meeting was unfortunate, but it might easily have been predicted by those who have read between the lines at similar, previous meetings, such as the AAAS meeting in Denver last December. Holding a town meeting under the guise of a scientific meeting is not the entire reason for chaos. Scientists, too, are at fault when in a strictly scientific meeting an individual, because of high stature in his field, suddenly becomes an "expert" in other scientific fields.

Perhaps some progress could be made if participants were required to limit their remarks to their area of special competence. Then we would not have prominent anthropologists expounding on fire storms; radiation biologists, with expertise in the effect of x-rays on *Drosophila*, expounding on the physics of fission-product decay; sociologists expounding on the characteristics of concrete failure under blast pressure; or physicists expounding on how to buy world peace with diversion of funds from other objectives. The public is understandably confused by conflicting statements from scientists whose eminence gives them large press coverage; the scientist is not much better off when it comes to judging the qualifications of another scientist, in a different field, to discuss something in still a third field. However, the scientist can help because he knows what it means to be qualified in one field, and if he would help shout down certain fellow scientists in scientific meetings, as well as hecklers in public meetings, we might make a nano-inch of progress.

NORMAN J. HOLTER

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I would have been pleased to report that the Congress of Scientists on Survival was a success, but unfortunately it was a disaster. The possibilities open to me in describing the congress were thus limited, unpalatable as this may seem to those who feel that the congress's worthy goals compensated for its foolish behavior. I am pleased to learn that Eleanor Leacock found

many of the workshop sessions "most productive." If they helped to enlighten her on the great problems of peace and disarmament, they served a useful purpose. It should be noted, however, that many people who are professionally involved with these problems were considerably less enthusiastic about the workshop results.

I think Stonier is too charitable to the congress's organizers when he writes that the confusion was attributable, in part, to the complexities of the problems under study. Chaos is not a necessary concomitant of attempts to deal with difficult problems. The congress did not break down because it could not find a quick solution to the world's sorry state; it broke down because it suffered from an overabundance of good intentions and a dearth of hard thought. Its guiding lights failed to recognize that if S.O.S. is ever to achieve any influence with policy makers, its recommendations must be based on more than a desire to do good. Anyone has a right to be against civil defense, but when an organization that purports to be "scientific" says it is against civil defense, it is not unreasonable to expect that it has looked into the matter, a step which S.O.S. neglected in its enthusiasm to get to work on the grave problems that afflict mankind.

—D. S. GREENBERG

Hybrid Enzymes and Isozymes

The publication of two articles on hybrid enzymes in the same week, one by Cahn, Kaplan, Levine, and Zwilling (*1*) and the other by Drew Schwarz (*2*), emphasizes the complexity of the problem of multiple molecular forms of enzymes as well as the differences in viewpoint. The thesis of Cahn and his associates is that the five electrophoretically distinct types of lactic dehydrogenase (LDH) arise as a result of combinations of two different subunits (M and H) to form tetramers, three of these types being "hybrid" enzymes. On the basis of "indirect" genetic methods—that is, comparison of species differences in lactic dehydrogenases, these authors conclude that M and H are under the control of "different" genes, presumably at different loci. The associations of M and H that give rise to the hybrids are presumed to occur at random.

The hybrid enzymes of Schwarz