

water are so subtle that one questions their significance. But we don't know the real reason for these various distributions. Consequently, it is considered that this aspect of our study will feed in the basic information to all other parts of the study, and a better understanding of the environmental conditions which determine where and how organisms can grow in a marine environment will be acquired.

This is a program that will not be completed in the 5 years that is envisaged for the IBP. I doubt that it will be completed in my lifetime.

I think we can make a fundamental start. I think if we can increase the awareness of the marine ecologist in the fundamental importance of these problems and of these investigations in the solutions of the practical problems which face mankind, I think that the International Biological Program will have made a contribution, not only to science but also to man's welfare.

Thank you.

Mr. DADDARIO. Thank you, Dr. Ketchum.

Dr. Cain, if we were to take Dr. Ketchum's example of the nuclear reactors and the warming of the sea, we could use it to our advantage. That would fit in with the need to have clever engineering go all the way as you have spelled it out and, if now we are to do something about it, we are actually paying now for something that we should have included in our overall planning in the first instance.

Dr. CAIN. Yes. I would agree that our traditional approach to engineering problems takes a short-time view and seeks an immediate goal of whatever the construction is. Very seldom do engineering considerations go on to the next steps as a consequence of the construction, in this case the atomic powerplant.

You haven't asked the engineers to do it. They are capable of solving many of these problems if this is part of the task assigned to them. I believe it is a public deficiency in not having thought far enough about these problems. Now we are correcting past mistakes and it is very expensive.

Mr. DADDARIO. We may not be able to. It may not work.

Dr. Bennett, you have a statement, and I know you intend to put it in the record.

PREPARED STATEMENT OF DR. IVAN L. BENNETT, JR., DEPUTY DIRECTOR, OFFICE OF SCIENCE AND TECHNOLOGY, EXECUTIVE OFFICE OF THE PRESIDENT

Mr. Chairman and members of the subcommittee, I welcome this opportunity to continue our discussion of the International Biological Program. It is my understanding that the Subcommittee is now giving serious consideration to writing a thoughtful and penetrating report on the IBP for the Congress, for the people of the U.S., and for interested laymen and scientists all over the world.

This submission to the Subcommittee consists of:

- I. Primary Statement.
- II. Summary of Benefits.
- III. Description of Action Programs.
- IV. Details of Major Programs Prepared by Drs. Smith, Benninghoff, Bliss, and Shimkin.

I. PRIMARY STATEMENT

At the outset, I think that it is significant to note that the increasing interest of this Subcommittee in the IBP parallels almost precisely the experience of others who have moral or assigned responsibilities for planning, promoting, and carrying out IBP research. Among biologists, our experience has been that initially