

many rejected or only passively accepted the idea of the IBP. As plans for the program have evolved, the attitudes of most of these individuals have changed from an initial reaction of mild interest and involvement, to a more active acceptance of the challenge and enthusiastic recognition of the opportunities and responsibilities that this program places squarely on their shoulders.

It is worthwhile to repeat the theme of the IBP—"The Biological Basis of Productivity and Human Welfare" and to point out what a challenge it is to define, promote and accomplish research that will contribute to this theme. To this end, biological scientists who have accepted appointments from the President of the National Academy of Sciences to serve on the US/IBP committee and its subcommittees have themselves given further definition to the research that should be promoted. Their definitions, which you have reviewed in the form of program statements from the 9 US/IBP subcommittees, are the results of much hard work. The synthesis of these statements into National Committee report describing U.S. participation in the IBP, and the parallel publication of all these reports have had dramatic effects throughout the community of biologists both in the U.S. and internationally, particularly among South American nations. The interests among the latter have previously been described to you by Dr. W. Frank Blair on 6 June during another portion of this hearing.

Others here today will have something to say concerning the estimated costs of U.S. participation in the IBP. I would like to confine my remarks to—

- (1) our organization for selecting and accomplishing IBP research,
- (2) a discussion of the possible methods of funding that research, and
- (3) a discussion of the benefits that we can expect to accrue.

Organizationally, our U.S. effort is evolving in a fashion that I find most encouraging. Dr. Revelle alluded to this during his discussion on 9 May when he described what he termed, the "emerging" IBP programs. You will recall that the IBP is divided into two phases; the planning phase and the research phase. The U.S. Committee structure with its 9 subcommittees and 2 panels was tailored primarily for planning. Participants in this phase have defined the component programs and continuing from these, working groups have further defined specific programs and frequently have defined the elements of proposed research projects. These latter elements, which we now term "action programs," are being institutionally developed, usually in universities, and submitted for support to granting agencies. Dr. Revelle mentioned three of these programs to you. The metamorphosis involved here is best described by quoting from one of Roger's letters on this subject:

"Dear _____:

"At the last meeting of the U.S. National Committee for the International Biological Program the joint recommendations of the Subcommittees on Terrestrial Productivity and on Productivity of Freshwater Communities for a Program for Analysis of Drainage Basins and Landscapes were presented. The National Committee enthusiastically accepted and endorsed these recommendations.

"During the Paris meeting of the Special Committee for the International Biological Program (SCIBP), 28 March to 1 April, I presented a description of the Program for Analysis to Drainage Basins and Landscapes. My description was based entirely on the proposed program on this subject as developed by the two subcommittees and their invited co-workers. The program was wholeheartedly received and endorsed by members of SCIBP. It fired the imaginations of many on the international group. I think that the consensus was that the most significant impact of new work contributing to the goals of the IBP will become apparent from programs of this type. I do not mean to lessen interest in or detract from individual research projects that are or will be included in the IBP. However, coordination of a group of well-conceived, well-planned related projects will assure maximum achievement within the framework of the IBP. I think that we must recognize that this type of coordinated approach voluntarily worked out by many scientists and their supporters will become the backbone of contributions toward advancing the biological basis of human welfare and productivity and toward advancing knowledge for those purposes.

"I am grateful to you for your participation in this program. The IBP organization nationally and internationally is looking forward to further developments. I am sure that the research to be proposed and accomplished will reward all for their careful considerations and planning.

"Please accept the thanks of all who are concerned with the IBP.

"Sincerely,

"Roger Revelle, Chairman, USN/IBP."