

the signal success of the International Geophysical Year is, and I stress the word "is" rather than "was", due to the flexible administrative and financial arrangements that were made to insure both adequate financial support and full freedom to conduct the research program. Because of these arrangements, the benefits of the IGY will continue to accrue for decades to come.

It is my carefully considered opinion that the U.S. International Biological Program will flourish only if an adequate fund is established for its support, a fund that is basically independent of the annual appropriations for the support of the mission-oriented research programs of the R. & D. agencies.

Also, I should like to repeat a statement that has been made by many of the distinguished witnesses that have appeared before your committee. There exists a very serious shortage of trained scientists to carry out the research projects for the IBP. I refer particularly to the need for experienced ecologists and systematists. Both are in very short supply. The IBP offers the best hope for training young, competent, highly motivated, scientists who will be in a position to carry on the research projects initiated under the IBP. Unless we all recognize the urgent need for developing effective training programs, I fear that the great hopes and expectations for the IBP will not be fully realized.

A closely related problem is the need for more adequate support for the IBP staff, the so-called housekeeping support. Looking back again to the IGY as a model program, it is worth noting that a number of distinguished scientists and administrators deferred their programs of personal concern in order to participate on a full-time basis in the staff support for the IGY. As a member of the Environmental Physiology Subcommittee of our national committee, I have had the privilege of observing the dedicated and thoroughly overworked staff of the U.S. National Committee in action. I submit that unless we recognize immediately the need to augment that staff, it may not be possible to develop the full potential of the IBP.

Another personal opinion that may be worth noting concerns the need to develop an effective system for gathering, collating, storing, retrieving, interpreting, and disseminating the great quantities of data and specimens that will begin to flow as the IBP enters an active research phase. The problem of information exchange was recognized early in the development of the IGY and resulted in the establishment of world data centers that were designed to handle scientific information obtained from special programs of the IGY.

For example, the IGP established an Oceanographic Data Center, a Meteorological Data Center, an Aurora and Airglow Center, and other centers for receiving and disseminating data. While I do not advocate the establishment of exactly the same kind of system for the IBP, I do feel strongly that unless we recognize and solve the problems of data exchange and specimen processing in the very near future we will find ourselves in a position of gathering great quantities of data but not fully utilizing them.

In conclusion, Mr. Chairman and distinguished members of the Subcommittee on Science, Research, and Development, I look upon the IBP as an international biological problem-solving activity of the