

countries. This is a difficult thing to do at the present time with Government funds. We have not so far applied for such foundation support.

On the other hand, it is quite obvious, knowing the way science works in this country—I mean you will recognize it, that a great deal of the support of the program will come from the funds already available to universities and to research institutions in terms of the salaries of their professors, their laboratories, their facilities and things like that.

Typically, in these basic research fields, the universities contribute from their own funds quite a bit in addition to Government support they get.

Dr. BYERLY. Mr. Chairman, if I may add: The President of the International Council of Scientific Unions did obtain a foundation grant for the International Council, a portion of which was used for the IBP.

Dr. REVELLE. That is correct.

Dr. BYERLY. It was not a large sum, but it was used in support.

Dr. CARLSON. Mr. Chairman, within the United States the universities do cost-share on research programs which these would come under, so there would be that aspect of the private sector sharing in the cost.

Mr. YEAGER. This would be on top of the figures that you are estimating now.

Dr. REVELLE. Yes, sir.

Mr. YEAGER. Just one last question.

Dr. Revelle, in your statement you indicated that to achieve a decent life for the living generation, further change in our biology may be needed. Then you say we may have to reduce fertility as reckoned on a worldwide basis to levels below any previously attained.

Now, as head of the Center for Population Studies at Harvard, you have done about as much thinking in this area as anyone. The question is, is there any doubt in your mind that there will have to be some change in the ratio between the birth and death rates, and if so, what time scale would you think would become critical at this point, looking at it from an ecological point of view?

Dr. REVELLE. Well, I think that in the long run—and by “long run” I mean 30 to 75 years—we must bring birth rates down to the level of death rates. If we can bring them down to the present level of death rates, this means a very, very low—a much lower birth rate than human beings have ever had on a large scale before.

Death rates are now—well, in the long run death rates will come up to about 15 per thousand per year, because men live to be about 70 years old on the average. We have to bring birth rates down to about 15 per thousand per year over this time span of the next 30 to 75 years. Otherwise, I think any knowledgeable calculation of the earth's available resources will tell you that people cannot raise their standard of living above what it is now if population increase continues beyond that time.

During this period we are going to have a big increase in population. This is typical of the history of human populations I think for the last 10,000 years, that there have been several periods of rapid in-