

one level to another or they may break down organic matter, or they may perform some other biological function. A whole host of different organisms may be involved in different places, but it seems to me an understanding of the rates at which these processes take place and the pressures which there are and their effects on these processes are important to understand. I think these are much more likely susceptible to understanding than is a total understanding of the role and behavior of each of these separate species. I think one has to study the community of organisms rather than individuals.

Mr. VIVIAN. In reference to measurements of these characteristics, you mention the environment which is a subject certainly receiving attention these days. Are you actively monitoring pollution in various places in the United States? Specifically, is there any active on-line monitoring going on at the present?

Dr. BUCKLEY. Yes; the first that I know of was in the Ohio River Valley, the Ohio River Valley Sanitary Committee, and it also is done to a limited extent in quite a number of other places.

Mr. VIVIAN. What is done in the Ohio River Valley?

Dr. BUCKLEY. I am not sure of the number of stations and even the variables that are measured, but temperature and oxygen and light and a series of these things which in the aggregate tell you a large amount about the quality.

Mr. VIVIAN. Do you do this downstream from major polluters?

Dr. BUCKLEY. Yes, in some cases.

Mr. VIVIAN. Do you have any plan to monitor and relay back the information?

Dr. BUCKLEY. May I say I only report this to you as something which I don't do nor does the Department of the Interior on the Ohio River. This is a cooperative venture of some 14 States with some cooperation of the Federal Government. I think that the answer to that is probably "No" so far as individual sources, all individual sources. I think one can certainly do this in terms of stretches of the river in understanding what changes there are from place to place. I would point out that aside from that, there are some possibilities of using some of the satellites at least for temperature changes, things of this sort in the ocean, also the possible use of infrared sensors for picking up differences in photosynthesis which in turn is a measure of total energy output of a particular environment and you can do this in remote areas where you can't get at it in other ways. At a practical level yet, I think the answer is "No."

Mr. VIVIAN. Mr. Chairman, I have no further questions for Dr. Buckley. I wonder if Dr. MacLeod is here.

Mr. DADDARIO. He has left, but if you have some questions we can get them to him.

Dr. BUCKLEY. Mr. Chairman, may I point out that I felt a little regretful that Mr. Vivian hadn't had a chance to ask questions and I was sure if I made a comment about systems analysis Mr. Vivian would take the opportunity to ask questions, so I feel that I pulled your leg a little bit.

Mr. DADDARIO. Well, you certainly got him to rise. I have been interested in the dialog that has developed between you two and I hate to break up the rapport, but we must proceed to another witness.