

as well as throughout the world. And this includes systematists as well, ecologists and systematists. We have whole groups of animals about which we do not have a single expert in this country; there are many groups of insects (and if there would be an outbreak) we have no one in America who knows certain groups of insects in sufficient detail to advise how to cope with them.

The demand for ecologists will go up steeply as awareness and recognition develops. It will go up by university, by Government, by industry, by city planning, by highway construction, almost every way we turn—as the problem of the environment and the impact of man develops an awareness—suddenly there is going to be a demand for astute advice among agencies of many types.

Now, these things are sort of self-propagating. Once you produce ecologists and they are being fed into the system, then the awareness develops because of their rapport with the community and with the organization and the demand will increase as a result. Strong training programs are urgent. Ecologists must be trained as whole scientists. This I mentioned earlier, but I want to be very clear about one point. We also need the classical ecologist, the qualitative descriptive ecologist who has been the primary individual we have had in the past, but we also need this new breed of theoretical ecologist to go along with them.

Ecology as a discipline can be made very exciting, can be made glamorous if we wish to use that term. Personally, I know of no field that is any more appealing than is ecology. Ecology can become elegant, sophisticated, and erudite; ecology can be appealing, involve travel to interesting regions of the world in which an ecologist can work outdoors, in the laboratories, use computers and all of science; what more can one ask? It is a very, very exciting field.

Mr. DADDARIO. You made it appealing without even the last pitch. I think it is exciting especially as you put it here this morning.

Dr. GATES. Thank you.

Two more points and I will be through. I believe we need the establishment of a National Ecological Institute. Along with this I want to make another important point. Do not confuse ecology and environmental science. The word "environmental" is being taken up by almost anyone and everyone today and if you look at this, it would soon make one believe that everything was going great, everyone is jumping on the band wagon, but this is not ecology. Ecology is more basic, more subtle, much more specific. I only wish to make that point for the record so that it will be in front of us for any other discussion.

My last point: To deal with the natural history of the earth, the natural habitat of the earth's surface, several programs are needed in the next decade. The IBP is a tangible international program and will serve as an important vehicle for achieving some of these goals. It will only be effective if properly funded by a direct allocation from Congress. Just to recapitulate in two or three sentences what I said, we do not understand the dynamics of a forest, grassland, ocean, lake, pond, or river nor are we proceeding rapidly enough toward this understanding. The condition of our ecological and systematic facilities is a national disgrace. Our budgetary support within the National Science Foundation for biological facilities is shockingly small and