the integration of ideas found in chemistry, physics, mathematics, and biology. Can we expect anything less exciting and significant to grow out of our concentration upon the highest levels of organization, at the other end of the spectrum, where the penalty of ignorance may well be irreversible and devastating change?

The challenge is enormous and the difficulties immense. In view of the complexity that presents itself, even at the lower levels of biological integration, the task of building a conceptual structure that would enable us to deal effectively with the upper regions of the spectrum, and with the spectrum in its entirety, seems almost overwhelming. Some have remarked that the highest ecosystem level is not more complex than we think it is, it is more complex than we *can* think.

Yet the problem is often one of perspective; and if we are to face our work squarely, we must make every effort to rid ourselves of that form of cultural near-sightedness which obscures the total design of the canvas even while it brings the details into focus. For example, the cycling of radioactive particles or pesticides through plants and animals into man—who released these destructive contaminants in the first place—is an ecosystem phenomenon, the attributes of which involve decisions in the minds of men as well as the physical movement of these substances through the air, water, soil, and living organisms. Thus, recognizing that human values and the motivating forces of economics and politics can contribute directly to the structual and functional characteristics of ecosystems in which man is the dominant force, it is clear that one must direct thought and research toward searching out the unique and possibly controlling phenomena—in this case, man's cultural behavior—that operate at whatever level in nature is under study.

Within this broad context of the search for solutions to contemporary ecological problems relevant to or embracing modern society, the Smithsonian program in ecology is evolving. Its primary goal is to advance basic ecological theory at all levels of biological integration, but its emphasis is upon the largely unexplored higher levels—on such areas as populations and communities of animals, on vegetation as a structure or pattern of plant communities, and on communities-plus-environments as total ecosystems. It seeks particularly to study ecosystems that are least modified by man. These are natural complexes, which are self-maintaining when human interference does not intrude upon the regulatory processes enough to cause the system to deteriorate, and they can therefore provide the means to understand and measure the effects of such interference. This type of undisturbed area is becoming increasingly rare in our day, and without protection from man's activities it will soon disappear.

The Smithsonian program of ecology also, therefore, encourages and practices conservation, which has two aspects—the aesthetic and the scientific. With the aesthetic aspect all are familiar; the arguments in favor of preserving unmolsted the beauty of the land elicit something like a conditioned reflex, and we dutifully nod approval. But with the other side of the coin, the scientific values of conservation, we are much less familiar. From a scientific point of view, conservation means preserving the capacity of ecosystems to support rich and varied forms of life. This is a matter of biological necessity if we are to maintain a diversity of environments in which it is not only possibly