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Introduction

Neil P. Bernstein
Iowa Academy of Science

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Introduction

To do science is to search for repeated patterns, not simply to accumulate facts, and to do the science of geographical ecology is to search for patterns of plant and animal life that can be put on a map. The person best equipped to do this is the naturalist who loves to note changes in bird life up a mountainside, or changes in plant life from mainland to island, or changes in butterflies from temperate to tropics. Robert H. MacArthur, Geographical Ecology, 1972.

In this issue, the Iowa Academy of Science honors three of our colleagues who passed away in 2000. Duane Isely, Larry Eilers, and George Knaphus shared many of the same interests. All three were botanists, although George's research on fungi and heterotrophic protists relegated him to the botany departments only by default. However, more importantly, all three were teachers. I believe that one of the lessons that they would have taught was the need to carefully document present patterns if we are to understand the future. However, many biologists poorly support this concept today.

It is an exciting time to be a biologist. We can sequence DNA of organisms, remotely sense vast amounts of information in the field, and receive constant communication from colleagues around the world. Computers allow intricate analyses not dreamed of 25 years ago, and our understanding of millions of years of evolution has never been better. Despite these abilities, we receive constant reminders that the ecosystems of the world are in jeopardy. How can we know what is being lost and at what rate organisms are being extinguished if we do not first know what had been present?

With our great advances in techniques, the value of the basic job of identifying and cataloging organisms is sometimes deemed trivial and expendable. Norris, Lewis, Widrlechner, Thompson, and Pope

demonstrate that such views are myopic in their paper *The Lessons from an Inventory of the Ames, Iowa, Flora (1859–2000)*. By combining hours of careful field work with many more hours of organizing herbarium records and searching the literature [of the past], they clearly document changes in the flora around one municipality, Ames, Iowa.

So what? *The Lessons from an Inventory of the Ames, Iowa, Flora (1859–2000)* paper not only benchmarks what has changed and what is present, but it exposes patterns to explain the changes. Through concentrated efforts, the authors give us a detailed assessment of biodiversity through time. If only we had similar information for all of the earth's ecosystems.

As Robert MacArthur noted almost 30 years ago, none of this would have been possible without the careful work of scientists like Duane Isely, Larry Eilers, and George Knaphus who all spent much of their lives cataloging and describing the biodiversity around them. I think they would all be delighted with the Ames flora both as scientists and educators, and, therefore, this special issue remembers their many contributions along with a work that I feel they would all endorse.

NEIL P. BERNSTEIN, editor