

## CHAPTER 24

### EPILOGUE

As I approach the end of my professional career, the question inevitably arises: “is the environment better off as a result of my efforts?” On 30 June 1997, National Public Radio Morning News mentioned that my home state of Pennsylvania leads the nation in importing wastes from other states and my adopted state of Virginia is second. Such information is daunting!

Furthermore, the world population has more than doubled in my lifetime; per capita material possessions have increased dramatically at the expense of natural ecosystems; persistent anthropogenic hazardous materials are more numerous; species extinctions are unacceptably high; and exponential growth is more rapid than many systems can handle. Obviously, major ecological, social, and political forces that are operative may be beyond the control of human society, so the impact of one person is miniscule. Arguably, the environmental condition might be significantly worse if a large group of people had not advocated the policy of use without abuse of the environment. In addition, the framework for a major paradigm shift to a new relationship between human society and natural ecosystems has been developed should either reason or consequences make this shift likely.

Although I have published frequently over a half century, most publications are not long remembered. Despite this, shifts in the development of a field do occur, although many practitioners are unaware of the role of the individuals involved. Moreover, one need not have evidence of major changes to feel satisfaction in one's efforts. I have experienced great joy in learning from a distant colleague that a particular publication of mine was a "good read"! Reprint requests and electronic communications bring a satisfaction that someone, somewhere is paying attention to my efforts. The greatest number of people I have reached is undoubtedly through publications. I employed an undergraduate for most of my tenure at Virginia Polytechnic Institute and State University whose job was to fill reprint requests daily. Arguably, the major personal benefit was the reciprocal exchange of reprints. A few of the requests even resulted in decades of correspondence.

I get particular satisfaction from supportive comments from editors and anonymous reviewers; both have helped strengthen manuscripts markedly and aided me in maintaining my zest for writing. Even negative comments have added to the zest, if not the joy. My long professional journey has been possible in a large degree to the steadfast support and skilled efforts of Darla Donald, editorial assistant; B. R. Niederlehner, senior laboratory technician; and a number of other colleagues. An old axiom states that the journey is the most important factor, not the destination—I agree!

Although I was not in a position to chair graduate committees until I went to the University of Kansas in 1966, I have chaired or co-chaired 49 PhD committees and 25 MS committees. I have served as a member of nearly 200 other graduate committees and have been the mentor for over 500 honors and other undergraduate research projects. I like to believe that I have had some influence over the careers of the students in the courses I taught, particularly during the years (about equally divided) from 1961 through 1994 at Rocky Mountain Biological Laboratory and the University of Michigan Biological Station. Generally, my association with the students at the field stations is much more memorable since both the students and I saw each other daily at meals, social activities, and seminars, as well as in class. In addition, classes at field stations tend to be 24 students or less and are almost always in more exotic surroundings than the typical university campus. A number of students have written that working with me during the summer changed their lives because they felt they could do something about environmental pollution. Such letters are always a source of satisfaction and joy. Not surprisingly, I met many of my graduate students for the first time at field stations, where we had a better opportunity to judge how well we would get along with each other better than is possible on a university campus or by correspondence.

Finally, some small (probably immeasurable) effects may have resulted from my off-campus seminars. During one academic year in the 1970s, I gave 52 off-campus seminars in a 36-week

period. Comments from people who remember the seminars and keynote addresses that were given decades ago indicate some lasting effects. Unquestionably, personal benefits were many because I found out about the research of others, met prospective graduate student with similar interests, and was able to test my ideas with persons with a broad array of viewpoints and disciplines.

All these associations have been immensely satisfying, although I experienced some of the usual frustrations associated with the academic world. The strongest evidence of satisfaction with my career is that I have continued working well past the age when retirement was financially possible. I am still working over a decade after having formally retired.

In June 1997, I prepared a “futures paper” for the International Joint Commission (Canada and the United States) and completed a chapter for a book on ecotoxicology. Even so, time management problems were still with me; I had increasingly shared time with my spouse Jean, spent time on meditation (begun in the mid-1960s), and began reading non-scientific literature on history, philosophy, and poetry. Throughout my professional career, Jean and I had enjoyed folk dancing, concerts, plays, and hiking. For much of my life, I had enjoyed fly fishing for trout with barbless hooks. Once a favorite past time, particularly in summers, fly fishing has disappeared for me as aging has prohibited climbing over slippery rocks with any agility. I can recall how everything fell into place for seemingly intractable problems after I stopped thinking about them and went fly fishing, to a concert, hiking, or, until the last seven or so years, a daily one-mile swim weekdays. I miss fly fishing as an aid to consilience, but some of the other activities remain.

The Depression left its mark, and, although I no longer save bits of string and wind them into a ball, the frugal attitude of that era left an indelible mark upon both my spouse Jean and me. Although recycling is now the “in” thing, during the Depression nearly everyone practiced it with fervor. American society has merely reverted to earlier practices, which always had merit. However, many people in all economic brackets refuse to recycle, so we are far from Depression-era efforts. Many of my contemporaries from that period have managed to suppress or abandon the Depression-era mentality, but Jean and I never did because having few possessions always enabled us to lead a more tranquil life. I pay the same rates for trash service, although I have less than 5% of the volume/weight disposed of by other households. I am apprehensive about the future of the planet if every family on the planet reaches this level of material consumption. In this category, I am a curiosity rather than a model.

The standard of living in terms of material goods was far lower during the Depression than that considered necessary these days. Again, this contrarian position seems unlikely to become widespread, absent a major economic downturn, government control, or a revolution—all less attractive than a change in societal behavior. Durant and Durant (1968) note that, every time in history that the disparity in affluence between the rich and the poor becomes too great, the problem is resolved either by revolution or by government partial redistribution of wealth. Now that we are rapidly becoming a global society and have a global economy, I wonder how this redistribution will happen! An attempt to raise the standard of living for the entire world will almost certainly prove fatal to what remains of natural systems, and war and revolution will probably not do natural systems much good either. Despite a sense of foreboding, I continue to work on the possibility of leaving a habitable planet for our descendants because it is a fascinating intellectual problem.

For the past two decades or more, I have been considerably comforted by the fact that, while human society can commit suicide, it cannot extinguish all life on Earth. Recent evidence of microbial species at depths below Earth’s surface (formerly thought to contain no life) and the existence of life in thermal vents in the ocean floor, together with many other similar situations, reinforce this belief. This situation, coupled with the evidence of proliferation of a wide diversity of life forms following great extinctions, indicates that, regardless of the outcome of the present ecological crisis, some form of life will exist on Earth and, presumably over geologic time, achieve considerable complexity. Since organisms with quarter-ounce brains or less seem to utilize resources more efficiently and sustainably than humans do, perhaps they are the meek that shall inherit Earth. I am pained to contemplate that great artists, musicians, and other creative talents might disappear entirely. However, this outcome may be the inevitable price of “progress.”

Consequently, one must keep doing one's best to espouse sustainability. The persistence may actually have some impact, and, if not, it is an interesting intellectual exercise with the great benefit of keeping in touch with interesting people.

Reference

Durant, Will and Ariel Durant. 1968. *The Lessons of History*. MJF Books, New York. 117 pp.