BOOK REVIEW


The belief that we have found, or will soon find, a means for arresting or circumventing the aging process has been a part of human thought ever since recorded history. The oldest written record appears in a 1600 B.C. Egyptian papyrus called “The Book for Transforming an Old Man into a Youth of Twenty.” The ointment described for this purpose was “. . . found to be effective many times.”

One would have thought that, after 3600 years of listening to charlatans extol the virtues of anti-aging treatments from magical waters and monkey testicular grafts to sleeping with young virgins, intelligent humans would have reached the conclusion that reversing the aging process is close to impossible. But that conclusion has not been reached, because anti-aging snake oil pitchmen still enrich themselves by exploiting the gullibility of the public. The booming anti-aging industry thrives despite the telling fact that the life expectancy of its pitchmen is no different from that of their victims.

It should therefore come as no surprise to observe that the financial success of books written about human aging are directly proportional to the number of years of additional life that readers are promised by following the directions contained therein.

However, in The Quest for Immortality, Olshansky and Carnes have forsaken this formula to reach the best-seller list and its financial rewards by opting to tell us the truth about aging. And for this they deserve our gratitude.

They are two voices in the wilderness, out-shouted by the pitchmen and, regrettably, by several senior but uninformed scientists. A recent iteration appeared when some scientists, caught up in the human genome hoopla, proclaimed ex cathedra that our understanding of the human genome promised that aging would soon be arrested or even reversed. This and similar claims are simply not true, and Olshansky and Carnes not only tell us why, but they also provide the requisite evidence.

Olshansky and Carnes are two of our best-informed demographers of aging, and their careful analysis of the data puts the lie to all of the hype. What they describe is not only based on the demographic and biological facts, but it is also clearly presented, well organized, and marvelously entertaining.

There is probably no area of current biology like aging in which so much interest exists, yet where so much is misunderstood. For example, without an important qualification, and contrary to popular belief, there is no evidence that we are living longer than we ever have. There is good evidence that for the last hundred thousand years the human life span has remained fixed at about 125 years. What has increased is life expectancy, which has increased about 28 years during the past century, but only in developed countries. That increase, which is greater than what occurred in the previous 2000 years, was largely due to the resolution of causes of death during childbirth and in youth. Life expectancy is the average probability of the additional number of years that humans of a particular age will live. As a group, all humans born today and then assumed to live in today’s conditions in the United States have a 50-50 chance of living for about 76 years. Thus we are not living longer in the sense that the human life span has increased. We are living much longer than those born in the first part of the twentieth century because of the elimination of most early deaths.

The failure to distinguish between aging research (called biogerontology) and research on age-associated diseases (called geriatric medicine) has been, and still is, a source of many additional misunderstandings. Research efforts on the diseases of old age far exceed research directed toward increasing our understanding of aging, where the most important fundamental question is: “Why are old cells more vulnerable to pathology than are young cells?”

Aging is not a disease, and the distinction is central to an understanding of why the resolution of the leading causes of death in old age, cardiovascular disease, stroke and cancer, will tell us little about the fundamental biology of age changes. The resolution of all three causes will only result in an increase of about 15 years in human life expectancy. Then, aging, or the loss of physiological capacity that underlies the cause of these pathologies, will be revealed as the leading cause of death.

Resolution of age-associated diseases will advance our knowledge of aging processes to the same extent that the resolution of pediatric-associated diseases such as polio, acute lymphocytic leukemia, Wilms’ tumor, and iron deficiency anemia advanced our knowledge of childhood development. That is, no advancement occurred at all.

Today, the study of age-associated diseases and manipulating biological development in lower life forms dominates what is believed by many to be the field of aging research. It is not. One example is that more than half the budget of the National Institute on Aging in the United States is spent on Alzheimer’s disease research, yet motor