

Foreword

"Life is like a whirlpool in many ways. When once set a-going it spins on and on . . . In its tendency to spin on forever there is life's purpose—to go on living."³ However, the only nonaging animal, the sea anemone, which constantly replaces all of its cells, is more of a culture than an organism.

Other animals, including man, have a fixed life span that is under genetic control. There is no doubt that the genome controls the length of the life span and the intricate pattern of age-related changes in mammalian structure and function. The complex mechanisms involved in the aging process and the progressive accumulation of changes with time are obscure, and they have been the subject of considerable speculation.

Studies on skeletal, muscular, pulmonary, and cardiovascular development in humans subjects indicate that maximum efficiency of many organ systems occurs between the ages of 20 and 30 years. We have learned by plotting the records of marathon runners of different ages that a period of development is followed by a period of decline. Additionally, for humans aged 30 years and over, an exponential rate between age and mortality exists, and this relationship is valid for several other species.

Thus, the highly integrated individual carefully organized and meticulously controlled declines with advancing age. This individual will experience loss of cells from muscles, the nervous system, and other vital organs and loss of function of organ systems and homeostatic mechanisms, which culminate in loss of life from disease, in a precise logarithmic ratio with age.

Scientific advances have extended man's natural life span despite age deterioration, and population projections indicate that by the year 2030 there will be 50 million senior citizens in the United States alone. The health care needs of the elderly constitute a universal challenge to our youth-oriented society for the twentieth and twenty-first centuries. Man has now completely reversed his relationship to mother earth he inhabits.² At the beginning he was like a child, maintaining a rather desperate foothold on the earth's surface. Now he appears to be almost her master and

intends to become the master of his own life span. Mathematicians have calculated that if an individual were to travel in space at the speed of light, the rate of aging would be reduced according to the principle of Einstein's theory of relativity.¹

It is with pride and profound self-satisfaction that I have served as guest editor of the inaugural issue of the *Clinics in Geriatric Medicine*, this invaluable and promising new periodical devoted to an analysis and exploration of age-related changes of structure and function of certain organ systems and homeostatic mechanisms in animals and man. This issue is enthusiastically dedicated to our patients, the aging veterans, and to the physicians, house staff, medical students, and nurses who care for them in the Veterans Administration Medical Centers, the largest hospital system in the western world; and to the Medical Research Service of the Veterans Administration Central Office and its legion of biomedical investigators in our Medical Centers for their achievements to date, which constitute "the best-kept secret" in the nation; and last but not least to Rosalyn S. Yalow, the first American woman Nobel Laureate, for her indefatigable support of research and development and for her magnificent contributions to biology and medicine.

I am confident that this issue will serve as an introduction to gerontology and geriatrics for physicians and other health professionals involved in the care of the elderly. I hope it will also serve as a catalyst to bring to attention the urgent need to design educational programs concerned with the biology of aging and the health care of the aged for medical students, house staff, and practicing physicians everywhere.

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Guest Editor

REFERENCES

1. Feinberg, G.: *What Is The World Made Of?* New York, Doubleday, 1978, page 110.
2. Kugelmass, I. N.: *Aging Life Process.* Springfield, Illinois, Charles C Thomas, 1969.
3. Smith, H.: *From Fish to Philosopher.* New York, Viking Press, 1956.