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Cytosolic and Microsomal Epoxide Hydrolases: Differential Properties in Mammalian Liver: K. Ota and B. D. Hammock


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Food Dyes Impair Performance of Hyperactive Children on a Laboratory Learning Test: J. M. Swanson and M. Kinsbourne

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Neurotransmitter Release from a Vertebrate Neuromuscular Synapse Affected by a Food Dye: G. J. Augustine, Jr., and H. Levtan


Motile Flagellum with a "3 + 0" Ultrastructure: G. Prensier et al.

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COVER
Hot-water jet spouting from a knocked-over chimney on the East Pacific Rise crest at 21°N. Water temperatures of 380° ± 30°C were measured at such vents. The photograph was taken from the submersible Alvin during expedition RISE. See page 1421. [Photograph by Dudley Foster, Woods Hole Oceanographic Institution]
Shadow of Death over Aging

In the history of mankind and in many cultures, longevity was an exceptional experience which came to relatively few people. In those times and in such cultures people died in childbirth, in wars, and in epidemics. They were smitten by death and were thus spared the experience of a slow decline which accompanies the 60's and 70's. People formerly died as infants, children, or young men and young women. Now they die in old age. This has brought the experience of aging into proximity with the experience of dying to the extent that one could define aging as anticipatory dying.

Biological, cultural, and social factors produce this anticipation. Numbers of women experience the end of their childbearing capacities and, thus, get a dramatic physiological reminder that their body has lost one of its significant expressions of vitality. Under the influence of drugs for the control of hypertension, many men experience loss of virility; this has for them similar meaning. Periodic checkups remind people of the increasing vulnerability of their bodies and prevent the repression of death anxieties.

Old people in the United States live in a society which puts a premium on being young. To be old in a society in which it is good to be young makes one a member of an undesirable and undesired minority. Reminiscing of old people gains meaning as an attempt to recapture moments of one's youth.

In the social sphere, retirement comes to more and more women and men and is the unmistakable sign that the world of work is no longer available to the aged individual, and one experiences the rejection of one's former associates. One is forced into a life-style for which one has not been socialized, a life-style of unstructured time and reduced input from the outside world. Deprivation of ego supports and lack of the comforts of religion make prolongation of life for many people their main purpose of existence. In this doomed enterprise, people find the assistance of advances in medical technology, which frequently adds to the quantity of life at the price of quality.

A physician's advice to older people often means diminishing their pleasures. One is not supposed to use salt, to eat fat, to eat sugar; one is not supposed to get up on ladders; one is supposed to avoid fatigue and exertion. In essence, one is faced with the choice between a shorter life or a reduced life. Medications become part of the daily routine and the pills which one is supposed to take are little reminders of one's own vulnerability and ultimate temporality. Various examinations periodically awaken people's anxiety about cancer. Blood pressure tests, now made available for self-administration, make people worry about coronary occlusions and strokes. It is impossible in our culture to be over 40 and under the care of a physician without being put into a process of recurring professional and self-examinations which connect aging with the thought of dying.

Health care frequently implies a loss of status. Many well-meaning physicians try to establish a relationship with patients by calling them by their first names. Some nurses follow the example of the physician, and neither of them realizes that this is a diminishing interaction. Simply being a patient implies a decline in status. Hospitalization makes any patient a captive in an institution, threatening him or her with a future in custodial care.

The daily press contributes its share of reminders to mortality. Obituaries are a regular portion of the daily newspaper. Their disturbing effect on the elderly has been recognized, but in our society there is no place to hide from information about death and dying.

It is miraculous how relatively well aging people withstand the onslaught of these diminishing physiological, cultural, and social attacks. The answer seems to lie in the ability of the aging person to make ever new adaptations to their loss, to reestablish functioning, and repair self-image.