Vignettes: Academic Admirees

The romantic age of the 19th century glamorized the sallow, wan physical appearance typical of patients with tuberculosis. Thus, when Daniel Chester French began his work on the statue of John Harvard that remains a notable feature of the Harvard Yard, he seized upon the fact that John Harvard was known to have had tuberculosis to model a face "delicate . . . and sensitive in expression."

—*Thomas M. Daniel, Joseph H. Bates,* and *Katharine A. Downes,* in *Tuberculosis: Pathogenesis, Protection, and Control* (Barry R. Bloom, Ed.; ASM Press)

In good part through their successes, the unbuttoned [Richard] Feynmans and Jim Watsons have become the reigning model of the brilliant scientist. It is a modern type whose credo is that talent is all, rank is little; you can never believe the experts, but you can and must work it out yourself; you say whatever is on your mind if you are really good enough; and you can follow your drives and instincts without shame. We recognize here a kin of Jean Jacques Rousseau's child of nature, his gifts unspoiled and uninhibited by what Feynman calls the "baloney" that pompous fools like to pass off as high civilization.

—*Gerald Holton,* in *Einstein, History, and Other Passions* (American Institute of Physics)

views a major role of natural selection to be the preservation of developmental and morphological stasis within lineages. Even Niklas's frequent invocation of "engineering constraints" as possible explanations for allometric laws—for example, elastic toppling as a constraint on the height-diameter relationship—does not represent a clear argument based on natural selection. Such engineering constraints alone can never account for a tight fit of species to an allometric curve, only for their restriction below some critical threshold (for example, the critical toppling height at a given diameter). Only if selection and energetic constraints are also considered can engineering analyses provide a biological explanation of an allometric pattern (for example, plants should not only lie below the toppling threshold, they should be as slender as possible at a given height to minimize the cost of further increments in height, thus maximizing the rate of upward growth and competitive ability). Nowhere does Niklas incorporate such considerations into models for evolutionarily favored strategies, and nowhere does he explicitly recognize that adaptations are context-dependent and not imposed mainly by invariant physical and chemical laws. Future work on allometry and its implications for the ecology and evolution of plants must take both of these central points into account.

Thomas J. Givnish
Department of Botany, University of Wisconsin, Madison, WI 53706–1381, USA

Other Books of Interest

The Molecular Basis of Cancer. JOHN MENDELSOHN, PETER M. HOWLEY, MARK A. ISRAEL, and LANCE A. LIOTTA [Eds.]. Saunders, Philadelphia, 1994. xviii, 574 pp., illus. $130 or £100.

The editors of this textbook begin their preface by noting that molecular biology has revolutionized our understanding of malignant transformation and that the study of malignancy has had a comparable effect with respect to understanding of the molecular and genetic bases of normal cell growth and proliferation. Their exposition of cancer and related processes is accordingly intended to "explain, rather than to merely recount," what is now known about "a disease which until recently was thought about in purely descriptive terms." Although clinicians are among the intended audience for the book, its focus is not on clinical manifestations or treatment *per se* but on "scientific underpinnings." In all the book consists of 23 chapters by a total of 45 authors. Section 1, covering malignant transformation, contains accounts of cell cycle regulation, oncogenes, and neoplastic drugs (Murakami *et al.*), the molecular and cytogenetics of hematopoietic malignancies (Gauwerky and Croce), viral carcinogenesis (Howley), mutagenesis and multistage carcinogenesis (Weinstein *et al.*), tumor suppressor genes (Levine), oncogenes (Rosen), and growth factors and signal transduction (Tronick and Aaronson). Section 2 is devoted to the growth and spread of cancer, beginning with a discussion of the cytogenetics of neoplasia (Gilewski and Norton) and including chapters on cellular adhesion mechanisms involved in metastasis (Buck), tumor angiogenesis (Folkman), and molecular mechanisms of metastasis (Stracke and Liotta). Section 3 consists of chapters on specific malignancies—lymphoid and hematopoietic neoplasms (Gaidano and Dalla-Favera, Khouri *et al.*), childhood neoplasms (Israel), and lung, colon and rectal, and breast cancer (Johnson, Fearon, Dickson and Lippman). The final section is devoted to the molecular basis of cancer therapy, with papers on various types of therapy—chemotherapy (Scotto and Bertino), radiation therapy (Fuks and Weichselbaum), monoclonal antibody therapy (Maloney *et al.*), and gene therapy (Tolstoshev and Anderson)—as well as on growth factors (Mendelsohn and Gabrilove) and cellular immunity (Herberman). Each chapter in the book has its own reference list, consisting heavily of references to the primary literature, and there is a subject index for the volume as a whole. The book is printed on glossy paper and is illustrated largely with (sometimes rather blurry) line drawings.

Katherine Livingston

Cell Physiology Source Book. NICHOLAS SPERELAKIS, Ed. Academic Press, New York, 1995. xvi, 738 pp., illus. $99 or £76.

This work is conceived as a successor to Hugh Davson's "classic" and "monumental" *Textbook of General Physiology*, which was first published in 1951 and appeared in its fourth and final edition in 1970. Davson notes in a foreword that the expansion of the field would today make preparation of such a work an impossible task for a single author. Sperelakis has enlisted in the enterprise 48 other contributors to produce a total of 50 chapters (not reprints from the literature as the book's title might suggest) written at a level intended to be suitable for an audience ranging from advanced undergraduates to researchers in other fields. He asked the contributors to consider comparative physiology, developmental changes, pathophysiology, membrane diseases, and molecular biology as related to their particular topics and to provide treatments that would be "comprehensive, but didactic, . . . beginning in an elementary fashion and ending in a sophisticated and quantitative treatise." The opening section of the book, Biophysical Chemistry, Electrochemistry, Metabolism, Second Messengers, and Ultrastructure, comprises 10 chapters, beginning with accounts of the biophysical chemistry of cellular electrolytes by Freedman and of the physiological struc-