Vignettes: Minority Malaise

In graduate school I was expected to have ideas, express them, write them down, and—horrors—defend them. How does one do that? If you defend them, some hotshot white male is there to tear your arguments to bits. What manner of discourse is this? Many women, especially older minority students, had this problem. We thought that tearing apart arguments was rude at best and cruel at worst.

—*Elisabeth J. Johnson*

When I first came to New Haven to teach at Yale, I was truly surprised by the marked class divisions between black folks—students and professors—who identify with Yale and those black folks who work at Yale or in surrounding communities. . . . I soon learned that the black folks who spoke on the street were likely to be part of the black community and those who carefully shifted their glance were likely to be associated with Yale.

—*Bell Hooks*

From Michelle M. Takarczyk and Elizabeth A. Fay, Eds., *Working-Class Women in the Academy: Laborers in the Knowledge Factory* (University of Massachusetts Press)

salt marsh mosquitoes." Other not so well-known published accounts deal with the healing of gut wounds in mosquitoes, abdominal pulses of newly emerged mosquitoes, causes of male incompatibility, and even the effects of decapitation. You will also find instruction on how to give your mosquitoes enemas, regulate their diets, and even record their biting electronically. Literally, there is something for everyone.

This volume will long serve as a guide for everyone dealing with mosquitoes and other Diptera of medical and veterinary importance. On its own it stands as a tribute to Clements's dedication and astute scholarship. The eagerly awaited second volume will presumably address further issues in mosquito behavior and ecology.

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Markers of Disease

Molecular Epidemiology. Principles and Practices. PAUL A. SCHULTE and FREDERICA P. PERERA, Eds. Academic Press, San Diego, CA, 1993. xx, 588 pp., illus. $80 or £61.

In the present century chronic disease supplanted infectious disease as the primary cause of morbidity and mortality in the developed world. With this transition the field of epidemiology expanded its focus to include the study of chronic diseases. The era of subspecialization of epidemiologic research had commenced. The many subdisciplines that have since emerged include clinical, genetic, occupational, psychiatric, cardiovascular, and cancer epidemiology.

The title of this book suggests the addition of yet another subspecialty to the list: "molecular epidemiology." Paul Schulte, one of the editors of the volume, defines the term as the use of biologic markers (or biomarkers), which "generally include biochemical, molecular, genetic, immunologic, or physiologic signals of events in biologic systems," in epidemiologic research. In their preface the editors seem to side with those who view "molecular epidemiology" as "an exciting phrase that conveys the potential for incorporating biologic markers, especially ones depicting events at the genetic or molecular level, into epidemiology" and against those who argue that "there is nothing new in molecular epidemiology" or even that "such reductionist approaches are antithetical to public health." Despite the controversy, the term is here to stay. A brief search of Medline revealed 161 articles published in the last three years with "molecular epidemiology" in the title. With *Molecular Epidemiology* Schulte and Perera have provided a basic guide to the "hybrid discipline of molecular epidemiology." The book is an excellent review of the crucial issues related to the incorporation of new markers of exposure, disease, or susceptibility into epidemiologic investigations.

The book is designed for both laboratory-oriented and population-oriented scientists. It will be particularly valuable to the epidemiologist unfamiliar with the terminology and procedures of molecular biology. Part 1, General Principles, contains clear and concise chapters on the techniques and principles of molecular biology, with definitions of key terms. The chapters addressing issues of quality control, technical variability, pharmacokinetic modeling, and the banking of biologic specimens constitute an excellent reference for all investigators who use biologic markers in their research. It is refreshing to see a chapter on interpretation and communication of epidemiologic data, a matter that, although often overlooked, is of critical importance.

Part 1 is not quite as strong in its presentation of epidemiologic principles for the nonepidemiologist and could have been made more helpful to the laboratory scientist by the more explicit definition of epidemiologic terms and by a fuller explanation of key concepts. For example, in their chapter on validation Schulte and Perera suggest that the most valuable indicator of whether a biologic marker is valid is its predictive value, or the proportion of people studied who have a particular disease (true positives) among all the people who have the marker (true positives and false positives). Since predictive value, although related to the validity of the measurement, is, as the authors note, also dependent on the prevalence of the condition in the population studied, it is not generally used as a measure of validity, which pertains to sensitivity and specificity. In addition, the concepts of content and construct validity, approaches derived from psychometrics that apply to measurements that cannot be directly confirmed by physical means, require more development than the authors give. The laboratory scientist requiring an introduction to the principles of epidemiology is thus encouraged to consult additional works. On the positive side, Schulte and Perera are right to emphasize the potential of biomarkers for lessening the possibility of exposure misclassification, a problem that plagues epidemiologic research, and the chapters on design considerations and risk assessment are very effective.

Part 2, Practical Applications, reviews the application of molecular biology to the study of specific organ system diseases, including cancer and cardiovascular, neurologic, and musculoskeletal disorders. In an epilogue, Rothman puts the use of biomarkers in the context of current epidemiologic research: "At present, and in the foreseeable future, epidemiology will use questionnaires, medical records, environmental monitoring data, and biomarkers in a complementary fashion to achieve its overall goal: to understand the determinants of human disease and to use that information to control disease."

Molecular biology is providing a growing collection of tools for the study of exposures, susceptibility factors, and promoting and protecting factors involved in disease processes. Although biomarkers have been incorporated into epidemiologic research for many years, the explosion of potential uses for these markers in a multitude of steps along the disease causation pathway is an exciting development. Making the transition from laboratory-based to population-based studies requires close cooperation and collaboration between laboratory and field scientists. This book is an excellent resource for all researchers involved in the quest to understand the determinants of disease and apply this knowledge to the maintenance of the health of the public.

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Books Received

Abnormal Psychology. Gerald C. Davison and John M. Neale. 6th ed. Wiley, New York, 1993. Variously paged, illus. $63.95.

AIDS and Contemporary History. Virginia Berridge and Philip Strong, Eds. Cambridge University Press, New York, 1993. x, 284 pp. $54.95. Cambridge History of Medicine.

Algebraic Approaches to Nuclear Structure. Interacting Boson and Fermion Models. Richard F. Casten, Ed. Harwood, Langhorne, PA, 1993. xvi, 554 pp., illus. $88 or £48; paper, $38 or £20. Contemporary Concepts in Physics, vol. 6.

B. F. Skinner. A Life. Daniel W. Bjork. Basic Books, New York, 1993. xvi, 298 pp. + plates. $25.

Bacterial Plant Pathology. Cell and Molecular Aspects. David C. Sigee. Cambridge University Press, New York, 1993. xii, 325 pp., illus. $84.95.

Before Head Start. The Iowa Station and America's Children. Hamilton Cravens. University of North Carolina Press, Chapel Hill, 1993. xx, 327 pp., illus. $39.95.

Capillary Electrophoresis. Principles and Practice. R. Kuhn and S. Hoffstetter-Kuhn. Springer-Verlag, New York, 1993. x, 375 pp., illus. $69. Springer Laboratory.

Cell Signalling. Biology and Medicine of Signal Transduction. Barry L. Brown and Pauline R. M. Dobson, Eds. Raven, New York, 1993. xxvi, 293 pp., illus. $89. Advances in Second Messenger and Phosphoprotein Research, vol. 28. From a conference, Glasgow, Aug. 1992.

Danger All Around. Waste Storage Crisis on the Texas and Louisiana Gulf Coast. Joel B. Goldsteen. University of Texas Press, Austin, 1993. xx, 259 pp., illus. $35.

Dark Matter, Missing Planets and New Comets. (Paradoxes Resolved, Origins Illuminated). Tom Van Flandern. North Atlantic, Berkeley, CA, 1993. xxxviii, 428 pp., illus. Paper, $18.95.

Deep Disagreement in U.S. Agriculture. Making Sense of Policy Conflict. Christopher Hamlin and Philip T. Shepard. Westview, Boulder, CO, 1993. xvi, 319 pp. Paper, $42.50.

Earth Shock. Hurricanes, Volcanoes, Earthquakes, Tornadoes and Other Forces of Nature. Andrew Robinson. Thames and Hudson, New York, 1993 (distributor, Norton, New York). 304 pp., illus. Paper, $19.95.

Earth System Responses to Global Change. Contrasts Between North and South America. Harold A. Mooney, Eduardo R. Fuentes, and Barbara I. Kronberg, Eds. Academic, San Diego, CA, 1993. xxii, 365 pp., illus. $85.

Fear of Physics. A Guide for the Perplexed. Lawrence M. Krauss. Basic Books, New York, 1993. xviii, 206 pp., illus. $20.

A Field Guide to Whales, Porpoises, and Seals from Cape Cod to Newfoundland. Steven K. Katona, Valerie Rough, and David T. Richardson. 4th ed. Smithsonian Institution Press, Washington, DC, 1993. xx, 316 pp., illus. Paper, $15.95.

Flattening the Earth. Two Thousand Years of Map Projections. John P. Snyder. University of Chicago Press, Chicago, 1993. xviii, 365 pp., illus. $45.

Genes in Ecology. R. J. Berry, T. J. Crawford, and G. M. Hewitt, Eds. Blackwell Scientific, Cambridge, MA, 1992. x, 534 pp., illus. Paper, $52.95. From a symposium, 1991.

Genetic Variation and Human Disease. Principles and Evolutionary Approaches. Kenneth M. Weiss. Cambridge University Press, New York, 1993. xxiv, 354 pp., illus. $69.95. Cambridge Studies in Biological Anthropology.

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Handbook of Flow Cytometry Methods. J. Paul Robinson *et al.*, Eds. Wiley-Liss, New York, 1993. xii, 246 pp., illus. Spiral bound, $39.95.

Handbook of Hyperactivity in Children. Johnny L. Matson, Ed. Allyn and Bacon, Needham Heights, MA, 1993. xiv, 354 pp., illus. $52.95.

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