



EVOLUTION, MEDICINE,
AND DEMOGRAPHY – THE GIFT OF TIME
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Stephen Stearns is Edward P. Bass Professor of Ecology and Evolutionary Biology at Yale University, New Haven, Connecticut, USA. He was born in Hawaii and educated at Yale (B.S.), the University of Wisconsin (M.Sc.), and the University of British Columbia (Ph.D. 1975). He worked for more than twenty years on life history evolution; his 1992 book *The Evolution of Life Histories* helped to solidify that field. Since 1996 he has been working on evolutionary medicine; his edited volume *Evolution in Health and Disease* (1999, 2nd ed. 2007 with Jacob Koella) is now helping to establish that emerging interaction. He recently founded a new journal, *Evolution, Medicine, and Public Health*, and is continuing to publish on evolution in contemporary human populations. – Address: Department of Ecology and Evolutionary Biology, Yale University, PO Box 208106, New Haven, CT 06520-8106, USA. E-mail: stephen.stearns@yale.edu

My year at Wiko was divided into two halves, October–December and May–July, because commitments at my home institution required my presence from January through April. In both halves I experienced the great gift of time: time to think, to read, to write, and to interact with colleagues across disciplines. With that essential gift, Wiko provides superb support. The apartment and the meals, wonderful as they are, are more than matched by the warm hospitality from everyone at Wiko and the intellectual stimulation from colleagues.

While I will take away many memories from events occurring within the Wiko walls, I will also remember the diverse, enticing city of Berlin, bicycle excursions through Grunewald, Potsdam, and the Tiergarten, and evenings at the Deutsche Oper and Philharmonie.

It is a lovely, livable city with wonderful museums and music and excellent public transportation.

Much of my time in Fall 2011 was devoted to organizing the new journal. The decision to launch the journal was taken just as I was arriving at Wiko, and I spent much of October and November putting together the editorial board and setting up the non-profit foundation that owns the journal. Negotiations with publishers occupied much of the spring; the contract with Oxford University Press was signed in June 2012. The journal is open access, with papers published only on the Web, not in print, and started to receive its first papers July 1, 2012. Its founding continues the important role that Wiko has played in supporting the development of evolutionary medicine. Eleven of the members of the Editorial Board of the journal are past, present, or future Fellows or short-term visitors at Wiko: Alison Galvani, Andrew Read, Carl Bergstrom, Carlo Maley, Gillian Bentley, Jacob Koella, Michael Hochberg, Randolph Nesse, Stephen Corbett, Stephen Stearns, and Virpi Lummaa. Randolph Nesse is also the President of the Foundation for Evolution, Medicine, and Public Health, which owns the journal.

When I was not working on the journal, I completed four papers.

The first paper discussed how to apply evolutionary theory to King Lear, which I did for Stephen Greenblatt's Wiko symposium in May. In my sophomore year at Yale, in the spring of 1965, I had taken a course on Tragedy from Richard Sewall, one of Yale's great teachers. For the paper, I suggested to Professor Sewall that I write on Biology and Tragedy. He encouraged me, but my performance was not strong, and I was disappointed in the grade. I never thought I would have a chance to revisit that issue, but Stephen provided me with an opportunity that I greatly enjoyed, learning much about Lear, myself, and my colleagues. My only regret is not being able to send Professor Sewall my revised draft, 47 years later: he died in 2003.

The second paper concerns the conflicts that arise between the two sexes for two reasons: selection can differ between males and females, and the genes that influence traits are present in both sexes, expressed in both sexes, correlated between the two sexes, and move between them from generation to generation. Using the data available in the Framingham Heart Study, we have been able to demonstrate that such evolutionary conflicts exist in humans. Selection on males is constraining responses in females, and selection on females is constraining responses in males. Should we so choose, we could blame the other sex for some of our lack of perfection. The paper appeared in *Proceedings of the Royal Society B* on September 26, 2012.

The third paper is a long review of evolutionary medicine commissioned by the Royal Society of London as the first of a new series in their Proceedings. Based on the Colloquium I gave in November, it occupied much of my time in May and June and will be helpful in teaching and structuring a book on evolutionary medicine. It appeared in *Proceedings of the Royal Society B* on August 29, 2012.

The fourth paper was made possible by Wiko's generosity in supporting short-term visits by Ian Rickard and Stephen Corbett. Their presence made possible the analysis of data from The Gambia (1956–2010), which we used to discover whether selection pressures on humans change during the Demographic Transition, occurring in The Gambia about 1975. We have shown for the first time how the demographic transition can influence the strength, direction, and type of selection; understanding this has important implications for anthropology, demography, and medicine.

Besides giving the normal Fellow's Colloquium, I also organized a day-long symposium on phenotypic plasticity for Peter Hammerstein's group at Humboldt University on December 7, gave the evening talk at the meeting of the Scientific Advisory Board on May 20, participated in Jim Hunt's symposium on social insects from May 10 to 11 and Stephen Greenblatt's symposium on King Lear from May 18 to 19, and organized the panel discussion at the Former Fellow's Meeting on July 6. (Apparently the Wiko leadership was concerned that I not get bored.) On a less intellectual note, I organized a red wine tasting for the Fellows in the fall and a white wine tasting in the spring. Neither appeared to slow the progress of scholarship.