Obituary
Richard Hugh Ward

Ka to he ra, ka rere he ra. (A sun sets, a day is born.)
Maori Proverb

Richard Hugh Ward died suddenly of cardiac causes on February 14, 2003, at home near Oxford, UK. At the time of his death he was Professor and Head of Biological Anthropology and Head of the School of Anthropology at Oxford University. Over nearly four decades Ryk made fundamental contributions to zoology, anthropology, epidemiology, and human genetics. He was one of a small group who essentially defined and created what we call the field of anthropological genetics. He was an accomplished researcher, he was a good friend for his many colleagues, and he was the center of a lively and loving family.

Born in 1943 in England, he grew up in New Zealand and graduated from the University of Auckland with Bachelor's degrees in Anthropology, Botany, and Genetics in 1966. After a Master's from Auckland in 1967, he went to the University of Michigan's Department of Human Genetics, where he received his doctorate in 1970. As a graduate student he did pioneering fieldwork with James Neel, Napoleon Chagnon, and others among the Yanomama of the Amazon basin. His dissertation was titled "Micro-differentiation and Genetic Relationships of Yanomama Villages."

After his doctorate he held teaching and research positions at the University of Auckland (1970–1972), the University of Washington at Seattle (1974–1980), the University of British Columbia (1980–1986), the University of Utah (1987–1996), and Oxford University (1996 until his death).

Ryk was a central figure in the flowering of anthropological genetics that began in the 1960s. At this time immunological techniques and electrophoresis made many new marker loci available for population genetic surveys. At the same time people were developing models of population structure applicable to human populations, like the migration matrix models of C.A.B. Smith and of Cavalli-Sforza and Bodmer, the parameterization of isolation by distance developed by Male'cot and used extensively by N.E. Morton and his collaborators, and so on. Anthropologists were also incorporating computerized tree-building techniques from numerical taxonomy. Several groups initiated fieldwork with technologically primitive people, aiming for a comprehensive integrated understanding of biology and culture of these groups. Studies of the Yanomama and other lowland South American Indians groups initiated by James Neel and Napoleon Chagnon were the best known and most productive of these projects. Ryk participated in the Yanomama research from the beginning and produced a rich corpus of papers about the genetic structure of these populations.

An excellent perspective on this early phase of anthropological genetics is given by Ryk's paper in Crawford and Workman's classic edited volume (Ward 1973). This is not only an introduction to the field at that time but one of the best introductions to Ryk's clarity and depth of thought and presentation. He address-

es the issue of rationale: we were all working hard and gathering a lot of data but no one had previously made explicit exactly why we were doing what we were doing.

The first rationale he offers is that by studying "primitive tribes" in intimate contact with nature we would gain understanding of the selective forces that shaped our species. He dismisses this rationale, saying that sample sizes from such groups would always be too small to let us say anything about selection in them. At this time biologists were preoccupied with the "neutralist controversy," and Ryk pointed out that the anthropological populations were too small for them to be of interest to the issue.

The second related rationale is that tribal populations reveal the demographic and social context in which the human genome evolved. Sociobiologists would later phrase this argument as the search for the EEA ("Environment of Evolutionary Adaptedness"). He dismisses this rationale by pointing out that "the investigator faces the paradox of constructing models of human evolution, based on populations that, judged from our vantage point at least, have drifted from the mainstream of human progress."

The third rationale is that humans can provide data about "migration, family relationships, mating patterns, and so on" that would be impossible to obtain from any other species. He agrees that this last viewpoint does provide "sufficient rationale for carrying out genetic studies of tribal populations."

In retrospect, Ryk was correct in his assessments. While sociobiologists use the concept of an EEA, no one has any idea precisely what it was. There are no major selective forces yet found in small populations that are not also found in large populations. But his third rationale, the one that he accepts, was right on. It is clear today that our understanding of the human genome depends critically on our understanding of human history and population structure, and we could never know as much about another species as we do about ourselves.

Ryk's early insights into the value of adding an anthropological perspective to human genetics led him to a longstanding interest in the epidemiology of hypertension and rheumatoid arthritis. Ryk's work in these areas reflected his background in anthropology, often focusing on populations with clearly defined historical relationships. He had an ongoing interest in the comparison of African populations and their descendants in Jamaica and Chicago, for example, which he hoped would allow him to tease apart the relationship between genes, environment, and hypertension. This approach to problems in genetic epidemiology has gained momentum in recent years, with an explosion of papers attempting to integrate evolutionary analyses into genetic epidemiology.

Although Ryk's work was heavily focused on anthropological and human genetics, many aspects of his career show his ongoing interest in evolutionary biology in general. Ryk was insistent on crossing the boundaries between human genetics and evolutionary biology, fields that he felt needed to maintain closer contacts. This interest often led Ryk to foster relations between his own department and others. During his tenure in the Department of Human Genetics at Utah,

Ryk was a constant presence in the Department of Biology, where he taught undergraduate courses and advised a number of graduate students. Recently, Ryk had moved to integrate his department at Oxford, Biological Anthropology, with the Department of Zoology.

Ryk's general interest in evolutionary and population genetics led him to host a diversity of projects in his lab, often providing space, supplies, and technical support to underfunded researchers. At one point in the 1990s, his lab was simultaneously producing mitochondrial sequences from lizards, frogs, weasels, ants, bears, and humans. This hectic environment was no accident—it provided a unique, intellectually intense atmosphere that allowed the comparison of data from as many species as could be fit into the lab. Occasionally, this species richness led to humorous moments. On repacking a lab freezer in preparation for his move to Oxford, Ryk was dismayed to discover an abandoned badger, a red fox, and several bats, and no one could identify the owner.

Those working with Ryk were struck by his sharp mind and his bluntly expressed opinions, which could both boost and intimidate. However, Ryk's most memorable trait was his youthfulness. While professorial in appearance, Ryk's demeanor and enthusiasm reminded one of a boy. A showing of an old Yanomamo ethnographic film in a graduate seminar once caused students to erupt in peals of laughter when young Ryk appeared on the screen—not because Ryk was different back then but because he was so much the same. This infectious energy and enthusiasm affected us all for the better. It will be sorely missed.

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