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ISRAEL MICHAEL LERNER

1910—1977

A Biographical Memoir by

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I. MICHAEL LERNER MADE sophisticated contributions to population, quantitative, and evolutionary genetics, and animal breeding. He excelled in teaching at all levels, from providing nonscientists with realistic concepts of science and its importance in making policy decisions regarding the future of society, to teaching advanced courses in genetics. He also had exceptional talent for management and served with distinction in many assignments dealing with intramural affairs at the University of California and with scientific policy at the national and international levels. Despite the predominantly scientific cast of his professional career, Lerner's primary interests throughout his life were in the humanities. It is thus remarkable that he accomplished so much in science. How this came to be Lerner explained eloquently in the brief autobiographical statement he submitted to the National Academy of Sciences upon his election in 1959. The following quotation, with minor editing, is taken from that statement:

I have been a scientist, not through any overwhelming curiosity about nature, not because of a drive to contribute to the welfare of humanity, nor because of the promise of any aesthetic satisfaction from experimentation and generalization. Indeed my inclinations have always been in the direction of the humanities (I still regard myself as an historian manqué), to-

ward such arts as the theater or toward politics or the law. I drifted into a scientific career by following a line of least, or at best, little resistance. I was lucky in my associates, I have been fortunate in the circumstances of my personal life, and the genes I inherited interacted favorably with the environments I found myself in. That is as much as introspection can yield regarding how I came to be me. The outward facts follow.

There was nothing in my family's tradition or in my home environment that would have predisposed me to an academic career in science. My father, at the time of my birth, was a successful importer and exporter living in Harbin, Manchuria (then a Chinese territory under a long-term Russian government lease). The life we led was reasonably typical of middle-class prosperous Russian families with some cultural pretensions, the theater, lectures, and concerts occupying a fairly prominent place in our daily existence. Certain departures from the Russian norm were occasioned by Harbin's geographical position (Chinese house servants, English regarded as a more important language than French). My sister (two years older than I) and I were first taken care of by two Russian nurses and then by German governesses.

By the time the Russian revolution broke out in 1917 my sister and I were being tutored at home in the regular school subjects appropriate to our ages, with English and piano lessons on the side. The revolution had a tremendous impact on Harbin and on the personal circumstances of our family. The wave of émigrés passing through Harbin, among whom a high proportion belong to the intelligensia, increased cultural activities for a short period far beyond the town's proportions in size or its provincial geographical position. Former University professors (true bearded Geiheimrats rather than the American variety) were so numerous that even many secondary schools were able to obtain their services for teaching. Thus, when at age 12, my home education gave way to school attendance, much of my education was by specialists in University subjects, rather than by secondary school pedagogues—thus I was exposed to political economy, philosophy, literary criticism and history at a much younger age than most of my contemporaries from elsewhere. However, although letters, humanities and social sciences were taught by former University professors in the Harbin schools, this was not the case in the natural sciences. I suppose the reason was that there were fewer scientists in Russia to start with, that fewer scientists migrated, and that an even smaller proportion took up teaching as an occupation. Another result of the revolution was that, during my childhood, Harbin became a center of music and theater. We had a full nine-

month opera season, a symphony, at least one dramatic theater operating throughout the year, a ballet troupe, a light opera troupe, and concerts by instrumentalists and singers. I acquired from these influences a deep and lasting interest and love for the performing arts, particularly opera.

My father's finances suffered such severe reverses as a result of the revolution that, instead of several tutors, my sister and I were sent to schools, private because public schools were only at the primary level. Piano lessons, and for a very short time drawing lessons (for which I exhibited absolutely no talent), were the only extra lessons continued. During this period my parents made attempts (unsuccessful) to emigrate to Switzerland. In the fall of 1922, I was sent to the Harbin Public Commercial School, where I spent five years, graduating in the spring of 1927. The Russian Commercial School in Harbin was a compromise between a classically oriented (Gymnasium) and a technically oriented (Realschule) secondary school. The direction I was to take after school was not at all clear. It was understood that I should go on to University, but whether it would be to one of the institutions in Harbin, or whether I would follow my sister to Russia (where she became a physician), or emigrate to Europe, or to America, was unclear.

Of the various prospects, going to America appealed most. I knew the language and I understood that working one's way through college there was much more common than in Europe. The prospect of doing military service in Russia, the difficulties for a scion of a bourgeois entering a Russian University at that time (my sister had difficulties), the uncertainties as to how my further education would be financed, were factors militating against going to Russia. Harbin itself, even if I were successful in completing a university course in some subject, provided only dismal vistas. So, America was the choice. But, by 1927, U.S. Immigration laws had tightened and a wait of many years for a visa was likely. However, a rumor spread through our school that Canada was an equally good place to go, provided that one announced intention to engage in agriculture. Suffice it to say that I left Harbin without passport, visa, or funds and found myself in September of 1927 in Vancouver, B.C. engaged in a farm job, digging ditches and caring for chickens at $2.00 per day on the Poultry Farm of the University of British Columbia. Thus I drifted by accident into a field which interested me only casually. A factor of major importance in staying in this field was the encouragement of Vigfus F. Asmundson, then an Assistant Professor in the Department, who was engaged in Poultry Genetics research. I soon became his assistant and continued to work with him until I

obtained my B.S. and M.S. degrees. He lent me money to pay tuition and often, when the Department budget was strained, paid me out of his own pocket for the work I was doing. It was to him that I owed my determination not only to enter into an academic career, but to do so specifically in the field of Genetics (I had no inkling that he would move to Davis and I would one day become his fellow staff member in the Poultry Department at the University of California). In 1931 Theodosius Dobzhansky spent a month in Vancouver and I had nearly daily contact with him. Dobzhansky's enthusiasm for research in genetics provided very strong reinforcement for my wishes to continue graduate work but it was not until 1933 that an offer of an assistantship that I could afford to accept presented itself. It was in the Poultry Department at Berkeley with L. W. Taylor, a fact that committed me to work with the chicken for the next 25 years.

When Lerner received his Ph.D. in genetics at Berkeley in 1936, he was appointed instructor in poultry husbandry, from which level he received accelerated promotions to professor. Thus, revolution, financial problems, periods of going hungry, and other dire difficulties, interspersed with some comic relief episodes, together with much heart-warming help and encouragement, launched what would prove to be a remarkable career but one that took a very different direction from the course that might have been predicted from his early knowledge and deep attraction to the humanities.

The researches conducted by Lerner in his twenty-five years in the Department of Poultry Husbandry at Berkeley (many in collaboration with Everett R. Dempster of the Department of Genetics and Dorothy C. Lowry, his technical assistant) were reported in more than 175 published papers. As a young faculty member he dealt with the inheritance of a number of components underlying egg production, the effects of practicing selection in conjunction with inbreeding, and with empirical tests of theoretically predicted gains from simultaneous selection for several different inherited characteristics. These studies led to construc-

tion of selection indices, credited by commercial poultry producers as responsible for substantial increases in egg production. Two of Lerner's books (*Population Genetics and Animal Improvement*, 1950, and *Genetic Basis of Selection*, 1958) were highly influential in transforming animal breeding from an art to a science based on multifactorial Mendelian inheritance. In another book (*Genetic Homeostasis*, 1954) Lerner formulated a brilliant hypothesis relating natural selection and evolution that stimulated much thought, discussion, and controversy (in the words of one generally unfriendly critic, it was speculative, imaginative, controversial, and influential).

During the late 1950s, Lerner's interests turned increasingly to the ways that studies of domestic and laboratory animals might throw light on the genetic basis of selection and evolution. In 1958 he joined the Department of Genetics at Berkeley, adopting the common flour beetle as an experimental organism more suitable for his new purposes and carried out many exquisitely designed competition experiments. He showed that the outcomes of his experiments were almost entirely deterministic when the experimental conditions as well as the genetic compositions of the competing entities were carefully controlled. He also showed that some of the characteristics involved in competitive ability were behavioral. This led him to in-depth studies of the technical literature in psychology, and he was invited to join, on a part-time basis, the Institute of Personality Assessment on the Berkeley campus.

During the late 1960s and until his death in 1977, Lerner's research activities were increasingly replaced by administrative and editorial work and the summarizing of various aspects of evolutionary genetics in numerous invited addresses and articles. He served as chairman of his department and the graduate council at Berkeley and on various boards of

the statewide University of California system and the U.S. Department of Agriculture. He also served as editor of the journal *Evolution* and as secretary of the International Commission on Genetic Congresses.

Lerner considered teaching to be of primary importance. Among his major contributions to teaching were a book titled *Heredity, Evolution and Society* and an associated course designed to provide nonscientists with understanding of the role of science in formulating sound public policy. Both the course and the book were highly popular at Berkeley, and both have been widely imitated.

Lerner received many honors and recognitions. Those he valued most, in addition to membership in the National Academy of Sciences, were election to the American Academy of Arts and Sciences, to the vice-presidency of the American Society of Naturalists, as a foreign member of the Florentine Academia dei Georgofili, and as editor of *Evolution*. He also valued receiving the Borden Award and Gold Medal, the Belling Prize in Genetics, the Poultry Science Research Award, and honorary degrees conferred by the University of British Columbia and the University of Edinburgh.

Throughout his life Lerner followed a demanding ethical imperative. He was meticulously honest and straightforward in expressing his opinions while at the same time managing to avoid offense. During the last years of his life his health was poor. His death on June 12, 1977, at age sixty-seven, followed a series of major abdominal operations as well as operations for cataracts and a detached retina, with complications from emphysema. His courage during these tribulations was remarkable. Lerner greatly enjoyed many aspects of life and conveyed his pleasure to others. He is greatly missed by his many friends throughout the world. It is appropriate to close this memoir with an appreciation of

Ruth Steward Lerner, his classmate at the University of British Columbia. She provided him with advice, encouragement, and support, all greatly appreciated, throughout the forty years of their marriage.

I first met Michael Lerner in Berkeley, probably in 1939 or 1940, when I was an undergraduate student on the Davis campus of the University of California. Starting in 1946, when I joined the faculty at Davis, many opportunities arose to talk to Lerner at Davis, Berkeley, and at scientific meetings at various places in North America and Europe. I admired his breadth of knowledge in biology and the humanities and treasured his friendship and counsel over the more than three decades I was privileged to continue my association with him.

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