

By Joshua Lederberg

J. B. S. Haldane was one of the most versatile scientists of the twentieth century. He made significant contributions in genetics, statistics and biochemistry, mainly as a theoretician rather than experimentalist. He also pioneered in human physiology as related to civil defense against gas warfare and to naval operations and submarine rescue. In these fields he was not merely a prime experimentalist; he was noted for the fearless way in which he used his own body for research, inquiring into the maximum breathable concentration of carbon dioxide or the highest tolerable dose of ammonium, calcium and other salts.

Besides his professional contributions, which were duly published in the learned journals and in scholarly books, Haldane was also famous for his speculative thinking and philosophical commentary. His essays ranged from the cosmic distribution of life and the biochemistry of its origin on earth to the improvement of cultivated palm trees in India; but they centered on the human meaning of science.

My own last meeting with Haldane was in London, in 1962, at a symposium on "Man and His Future," an il-

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and it necessarily reflects the simple fact that Charlotte came to repudiate the Communist party just when Haldane became most deeply, and perplexingly, committed to it.

Haldane's personality was riven by the most violent contradictions. He was insufferably arrogant to the authorities, especially those who burdened him with any trace of administrative detail. He was also remarkably open and considerate (perhaps also in defiance of the British professorial tradition) to his juniors and students. He was the most deeply committed of all men to the consistent application of rational science for the guidance of human affairs; but in his latter years he embraced Hindu mysticism and quoted its epics in a way utterly baffling to his scientific audiences. He was a man of extraordinary intellect, and he perhaps never fully understood how deep a gulf separated him from the people around him. He was, in a way, superhuman, and for just this reason never quite grew out of using his intellectual powers for playing games with words and with reason. (One might have indicted Socrates with the same bill.) I suspect his espousal of Communism was a nearly conscious effort to drive the application of narrowly rationalistic thinking in politics to its absurd extremities.

His own account was that Hitler, and Hitler's sympathetic following among the English aristocracy, had driven him to Communism. His active work for the party, which included chairing the (London) *Daily Worker's* editorial board, detested neither him nor the naval authorities from his later contributions to secret

lustrious gathering whose extrapolations turned out not very different from what Haldane himself had written in one of his first popular works, *Daedalus, or Science and the Future*. In fact, we knew very little in 1962 (or 1968) about basic biology concerning the future of man that Haldane had not anticipated in spirit in 1924. The outstanding exception was nuclear energy, which Haldane had dismissed to another century. Of course, this anomaly stems from an unprecedented commitment of research effort, the Manhattan Project of World War II.

Haldane's closing remarks at the 1962 symposium may have been intended as his own epitaph: "I have sketched my own utopia, or as some readers may think, my own private hell. My excuse must be that the description of utopias has influenced the course of history."

Some months later Haldane was found to be suffering from cancer. He had always thumbed his nose at authority, and death was no exception. At seventy-one, he published his first poem, "Cancer's a Funny Thing." He died in December, 1964.

Haldane's life is a series of ill-matched vignettes whose embodiment in one man is beyond belief. But this was Haldane's life, and Clark the biographer has reported it in as faithful and definitive a fashion as we are likely to see. Clark records his unrestricted access to Haldane's papers in the custody of Mrs. Haldane (Dr. Helen Spurway). The public record already includes a memoir by Haldane's first wife, Charlotte Franken, published in 1950 as *The Truth Will Out*. Her book is the only independent account of Haldane's political history,

military work — much of it during an interval when the *Daily Worker* was officially suppressed as seditious propaganda against the British war effort before Hitler's attack on the U.S.S.R.

Haldane's commitment to Communism was, of course, mostly deeply strained by the Lysenko episode—Stalin's establishment of an official party science of genetics based on the fantasies of a charlatan. Haldane could have had no doubts that Lysenko's "science" was nonsense, but the event did produce an extraordinary critique of certain dogmatic excesses of traditional genetics. These were mainly oversimplifications of terminology, but many geneticists lacked Haldane's prescience in the biochemical interpretation of genetics. The main point of the Lysenko controversy was not this, but the suppression of major lines of inquiry by the fiat of the state. Haldane's reply still has to be taken seriously — that the Establishment everywhere regulates the directions of research by its control of the purse-strings. Eventually he recognized the distinctions between suppression and neglect, and he later dissociated himself from the party. What he had never openly admitted, and perhaps never saw, was that a Communist dictator was even more likely than a parliamentary democrat to be stupid and narrow-minded, and that the consequences were immeasurably worse.

His fatal flaw was then an incurable optimism about the rationality of human designs. Haldane's own essays, unfortunately out of print, convey this spirit better than Clark's biography. Any reader who finds them will be curious to know more about their egregious author. &