Foreword

These letters are a record of the thoughts of a remarkable man and his remarkable friends and family, living through a historical period of exceptional violence and danger. They illuminate the larger scene of the Hitler years as well as the intimate scene of the Peierls family. They show us how quiet courage and sanity could bring a family safely through the storm and build a solid future upon the ruins of the past.

The two chief characters in the story are the German physicist Rudi Peierls and his Russian wife Genia. The two most dramatic incidents are the meeting of Rudi and Genia in Odessa in 1930 and the first calculation of the critical mass of a nuclear bomb by Rudi and Otto Frisch in 1940. Luckily for us, Rudi and Genia were separated for a year after their first meeting, so that we have an authentic record of their epistolary courtship in the magnificent series of letters exchanged between Leningrad and Zurich in 1930–1931. The Peierls–Frisch calculation of the critical mass was the decisive event that started large-scale projects to develop nuclear weapons both in Britain and America. The correspondence of 1940–1943 gives us an inside view of the fumbling efforts to get these projects organized in both countries, before they were finally and efficiently combined in 1943 at Los Alamos.

I had the good fortune to be a boarder in the Peierls home in Birmingham for the academic year 1949–1950 while I was working as a research student in Rudi's department. Thanks to Rudi's skills as a teacher and administrator, his department of theoretical physics was the best in Britain, having left Oxford and Cambridge far behind. Unmarried research students were welcome to stay in the Peierls home, where we were well fed and entertained by Genia. The home was a warm and wonderful chaos of teenagers and babies. The four Peierls children were Gaby aged 16, Ronnie 14, Kitty 2 and Joanna six months, no two of them alike, each having individual needs and schedules. Genia managed

SIR RUDOLF PEIERLS - Selected Private and Scientific Correspondence - Volume 1

them all with her unique combination of loving heart and loud voice. Food was then still rationed in England, and gas-fires were regulated by shilling-in-the-slot meters which required an infinite supply of shillings. House-keeping for a big family was complicated. But Genia made light of all difficulties. She always had time left over from her family to take care of personal problems for me and other student boarders. When any of us complained about anything, she would say, “What you have to complain, compared with Jew under Hitler or prisoner in Russia?” When I expressed surprise that she had another baby so soon after Kitty, she said, “There’s never convenient time for having baby”. When one of the students made an unsuitable marriage or bought an unsuitable motorcycle, she said, “Worst thing for health is to be an idiot”. Since the definite article does not exist in Russian, she considered that it was also superfluous in English. Having myself been raised in a proper well-ordered British home without much noise or excitement, I fell in love with the uninhibited Russian-Jewish way of life that Genia brought to Birmingham.

From time to time, Rudi and Genia would throw a big party at the house for their numerous friends and students. Massive quantities of food and drink would appear and the boarders would be put to work peeling potatoes and apples. A frequent visitor on such occasions was Klaus Fuchs, who had been a close friend and collaborator of Rudi in the bomb project. Klaus was fond of the Peierls children, and Genia said he had been their favorite baby-sitter when they were together at Los Alamos. He sat quietly at the parties and spoke only when spoken to. I talked with him mostly about Harwell, the British Atomic Energy Research Establishment, where he was head of the Theoretical Division. He was enthusiastic about Harwell and the prospects for peaceful development of nuclear energy. In February 1950 we were flabbergasted to learn that Klaus had been arrested and had confessed to being a Soviet spy. At first Genia did not believe it, but Rudi went to visit Klaus in jail and confirmed that it was true. For Genia, with her long experience of living in fear of the Soviet police, the key to survival was to have friends that one could trust, and the unforgivable sin was the betrayal of that trust. For once, she was speechless with anger. After Klaus was convicted, she too visited him in jail and gave him a piece of her mind.

SIR RUDOLF PEIERLS - Selected Private and Scientific Correspondence - Volume 1
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While Genia was welding the families of students and staff into a tight community of friends, Rudi was building his Department of Theoretical Physics into a first-class international center of research. He attracted bright young people from all over the world. During my time in Birmingham I shared ideas with Gerald Brown from America, Frank Nabarro from South Africa, Jens Lindhard from Denmark, Stuart Butler from Australia, Wladek Swiatecki from Poland and Tony Skyrme from England, besides many others whose names I have forgotten. The atmosphere of youthful exuberance was similar to the atmosphere at the Institute for Advanced Study at Princeton where I had spent the previous year. But in many ways Rudi was a better leader than Oppenheimer for a group of young people. Rudi was a platoon-leader while Oppenheimer was a general. Rudi was friendlier and more personally involved with the troops. He was actively engaged in research as well as teaching. During my two years in Rudi's group, the most important discovery was made by Rudi himself, who found a new and elegant method of deriving quantization rules for any classical field theory. Rudi's method gave for the first time a clear and intuitive meaning to the uncertainty principle in quantum field theory.

In summer 1951 I said good-bye to Rudi and Genia and went to start a new life at Cornell. Richard Feynman had moved from Cornell to Caltech and I was invited to take Feynman's place, an offer I could not refuse. But I left Birmingham with a heavy heart. Having once been a member of Rudi's team and Genia's incomparable household, I knew that I had reached childhood's end. For the rest of my life I would be making my own way in the world, without Rudi's wisdom and Genia's warmth to fall back on. Many years later, when my own children were growing up, we spent a summer in Seattle together with the Peierls family, and my children got to know Rudi and Genia. By that time, Rudi had become Sir Rudolf and Genia was Lady Peierls. But they had not changed. Genia still gave us good advice in her uniquely Russian version of English, and my children called her "The Loud Lady." In these letters I can still hear her voice.

Freeman Dyson
Institute for Advanced Study, Princeton

SIR RUDOLF PEIERLS - Selected Private and Scientific Correspondence - Volume 1