

## Dalitz memories

I first met Dick Dalitz at Heathrow airport in late 1978, when a driver from Rutherford Lab or Harwell (AERA) picked him up along with me and my wife, Diane. Dick advised the RL driver about how to stuff all of our suitcases into the car. Dick introduced himself (as if a particle physicist might not know who he was!). He apologized when shaking hands, his hands being dirtied by the newsprint that rubbed off of the newspaper (the Guardian, I think) he had been reading. He commented on the quality of the British papers. When we were on our way he asked about the purpose of my visit, which I stated quite succinctly, and then he was quiet. This was the start of my first sabbatical, to be spent at RL (not RAL then) hopefully working with Hong Mo Chan and his group on duality and exotics. I was quite in awe of Dick, of course. I knew about his work and had attended a talk he gave in Chicago at my first APS meeting when I was a beginning graduate student in the middle '60's. At that time I did not understand most of what he was saying and writing on the blackboard, but I knew it was something important. So in the car I couldn't let the time pass without making conversation in this golden opportunity. I was jet-lagged and so was he, having come from a distant point of departure, perhaps in Australia. He always complained about jet lag, saying it worsened with age for him. I asked him about quark models, resonance spectra, QCD, recent work on DIS and whatever I could think of in my dazed state. His answers were slow in coming, tentative, terse, thoughtful and made detailed reference to a lot of recent experimental data of which I was mostly unaware. This was characteristic of many conversations that we had over the years, although not as befogged from lack of sleep. It was a long ride. It was not easy to keep the conversation going. Finally when the car approached his house on Jack Straw Lane he wished me a good visit and said he would probably see me at RL or seminars in Oxford. That did happen, but we only exchanged greetings.

It was quite a while later that we began working together. I had another sabbatical coming up in 1986-87 and wanted to spend part of that time working on issues related to political and military uses of science, particularly the US's financially burgeoning ABM system. So I spent half the year focused on that issue at MIT, but kept my particle physics going as well. I had enquired about possible collaborations with several people in Europe. Dick responded that he was interested in a problem involving how the information about a quark's charge or helicity could be carried by its jet of hadrons. He had been talking with Robin Marshall, an experimentalist at RAL and DESY, who had some ideas about the charge question. Dick knew that I worked with Mike Moravcsik on spin and helicity using a density matrix approach and Dick thought that could be a promising way to proceed. He also assured me that Rudy Peierls would be interested in talking with me about nuclear arms issues. So my family and I moved to Oxford for 8 months. That began a collaboration with Dick that lasted for the next dozen years.

Before I knew him as a colleague and friend, Dick seemed brusque in his presentations and questions about details of physics. Yet, once I got to know him better, I felt he could be cautious and timid in other ways. He told me about having been too cautious about his suspicion that parity was not conserved in neutral K decays – clearly regretting that he did not pursue his hunch further. On the other hand, his deep and sincere, overarching appreciation of physics as a pursuit of knowledge and understanding, without cant or

boasting, was genuine and rare. There was no doubt expressed that this pursuit was of unquestionable value and importance.

Dick was a storehouse of information about particle physics. He certainly knew the history of 20<sup>th</sup> century physics, partially as a participant, but also as a scientific historian. He knew most of the measured parameters that appeared in the PDG wallet cards. He had a phenomenal memory for relevant details. His small notepads contained tiny script notes from each lecture he attended. He sometimes commented to me about a measurement or reanalysis of some data that bore on theoretical points - some that were quite obscure to me. Occasionally, to answer some question that would come up, he would shuffle through those notebooks, looking for just the right reference. But he also kept up with the big picture of where particle physics was at and where it was going. In my last visit with him last summer he was still hopeful about the future of particle physics and the LHC, while a bit impatient with the rate of progress on some issues like CP violation, and quite skeptical, but not dismissive about superstrings. I miss those talks in the Nuclear Physics coffee room – earnest, puzzled, bemused, sometimes skeptical, sometimes excited. Talks in the department coffee room, the various pubs where we had occasional lunches, his favorite little tearoom in the rectory of St. Giles, and his tiny, overstuffed office. And, probably like all of you, I wish I had asked him about much more of the history that he witnessed and to which he contributed enormously. His life in particle physics coincided with the most exciting period of discovery in our field. He was pleased to have a place in it. We are all grateful for what he taught us - about physics and about the value of a life devoted to advancing its search for understanding.