

wonderful magnet that Wilson Powell very kindly let us use. Wilson had two nearly identical magnets for the beautiful cloud chambers he built and used, and he simply let us have one on an indefinite loan. The 10-inch chamber was the first of ours to be "designed;" the previous ones had been fashioned on a lathe by Pete, who would say to himself, "The flange should be about this wide, and it should have a groove about here, to take a solder wire gasket that I'll make to fit it."

We spent a lot of time becoming familiar with Gell-Mann's strangeness rules, and I decided (after all, a group leader has to do something) that we would do our first experiment with stopping  $K^-$  mesons in hydrogen. From the theoretical and experimental standpoints, it appeared to be a potential gold mine, and from the sociological standpoint it was also a real winner.

Everyone else waited in line for high energy negative pions, kaons, or anti-protons, that came out of the one useful straight section of the Bevatron. But we were able to use a "private" target that could be flipped up in a curved section of the Bevatron, and that sent its sharply curved low-momentum pions and kaons between the outside iron return yokes, and into a very crude "mass spectrometer."

This separator consisted of a thin absorber that subtracted away almost all the momentum of the kaons, and much less of that of the pions. The cloud chamber magnet then bent the negative kaons into the active volume of hydrogen, where a reasonable fraction of them came to rest. No one had ever before seen  $K^-$  particles stopping in hydrogen, so we had the pleasure of seeing the copious production of all the hyperons with strangeness equal to -1:  $\Lambda$ ,  $\Sigma^+$ ,  $\Sigma^0$ ,  $\Sigma^-$ . We very accurately measured the masses and the lifetimes of all these particles. We saw  $\Sigma^-$  hyperons interact in the hydrogen. (Anyone who wants to experience the impact of this experiment on the particle physics community should read the enthusiastic summary in the *Supplement to Nuovo Cimento*, 2, 1957, pp. 773-5, with 3 photographs.)