MEMORIES OF SAUNDERS MAC LANE

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With the passing of Saunders Mac Lane, as well as the passing a few years of Samuel Eilenberg, an era has ended. It was one of the most fruitful colaborations of the twentieth century. Although the pair is probably best known for having invented category theory, this was almost incidental to what they no doubt saw as their main work—a remarkable series of papers on the $K(\pi, n)$ and related questions. The case of $n = 1$, that any two $K(\pi, 1)$ spaces have the same cohomology, was the original origin of their collaboration and eventually led to cohomology of groups and was one of the main sources of homological algebra.

I met Saunders very briefly when I was a graduate student at the University of Pennsylvania and he visited briefly in connection with an offer they made to him (that he eventually turned down). The next time I met him was in 1965 when he invited five people (Jon Beck, John Gray, Alex Heller, Max Kelly, and me) from the University of Illinois to come to Chicago for a weekend of talks on category theory. Fred Linton and the late John Isbell were also there as well as several people from the University of Chicago of whom the only one I recall was Dick Swan. This was the very first "Midwest Category Meeting". Saunders arranged to pay our expenses as well as stay at the very pleasant university faculty club.

Later these Midwest Category Meetings became regular features of the academic year. The first several were held at Chicago, arranged by Saunders. The later ones grew larger and Saunders was no longer able to pay expenses, but by that time people were sufficiently eager to go to them that it no longer mattered. Eventually, similar meetings were organized in places like Zürich, New York, and Montreal. They were very important for the growth of category theory and have helped keep us as a more-or-less unified community. There was one held at the University of Ottawa just a couple weeks ago, as I write this (early November, 2005). Until age and infirmity overtook them, both Saunders and Sammy were regular participants at these meetings, long after they left the friendly confines of Chicago.

At the first meeting, Jon and I presented out work on acyclic models. At first Saunders misunderstood what we were doing, but he quickly caught on and got very excited by it. I have always felt that after that he was very supportive of my work and always supported me behind the scenes. Certainly, I always used him as a referee for grants.

In 1979, he invited me to spend a month visiting Chicago. His seminar was still active and I gave, as I recall, several talks there. The month ended with all of us going to Aspen, Colorado where a fest in honor of Saunders's seventieth birthday was held. While I was in Chicago, I got to spend a very pleasant weekend at the cottage in the Indiana duneland at the south end of Lake Michigan with Saunders and his first wife Dorothy.

According to the Mathematical Genealogy database, Saunders directed forty doctoral students and has 1044 mathematical descendants. It takes nothing away from him that 588 of these descendants are through the line of his very first student, Irving Kaplansky. Saunders once told me the story of the first time he met Kap. He had recently returned to Harvard from Germany where he completed his PhD under the direction of Hermann Weyl and Paul Bernays (although later in life my recollections is that mentioned only Bernays). Someone lectured on topology and Saunders went. In those days the axioms for a topological

space had only recently stabilized to the axioms we know today (which, if you think about them, appear to have little, if any, connection to the geometry from which they emerged) and Saunders carefully recorded them as the lecturer presented them. He happened to glance over to the person in the next seat, who turned out to Kaplansky, who had written, "Usual axioms" and quickly concluded that here was a man to watch. Indeed and Kap turned out to be his very first student.

But if you examine the list of his students, you find an impressive number of very distinguished mathematicians, among whom are John Thompson, Robert Soloway, Anil Nerode, ... Included are two heads of the Mathematical Sciences Research Institute, Kaplansky the founding head and David Eisenbud the current head.

I cannot close this without saying a few words about his first wife, Dorothy. Let me hasten to add that I never met his second wife, so I cannot say anything about her. Saunders was from a line of Congregationalist ministers and had a tendency to be rather conservative (although I suspect the neo-conservatives running the US today must have horrifed him by their utter incompetence). Dorothy was anything but and over the years gradually won him over to her point of view. When the three of us drove in 1979 to their cottage on the Indiana dunes, Saunders made some comment about something, I cannot recall what, that was based on a conservative outlook. Dorothy started out by saying very gently something like, "Now Saunders, have you considered this from a different point of view?" which she explicated. Without an explicit argument, she gradually brought Saunders around to her way of thinking. Considering how stubborn Saunders could be, I found it a remarkable performance. And this was at a time that she was very weak from the palsy eventually killed her. She also had a will of iron that she demonstrated on the same visit when she insisted on climbing to the top of a dune at a time she could barely walk. Not the least of the reasons I admired Saunders was that he chose such a strong-willed wife.

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