

# Early Days in Statistics at Michigan

Cecil C. Craig

For me this period began in 1922 when I arrived in Ann Arbor with an M.S. degree intending to take courses in Actuarial Science. Professor J. W. Glover, who set up the actuarial program in Michigan, which still flourishes, conceived the idea in about 1910, that such a curriculum should include courses in mathematical statistics. In 1916 he brought back to Michigan a recent graduate, Harry C. Carver, to develop courses in that subject. In 1922 there were only two schools in the country, the State University of Iowa and the University of Michigan, where courses in mathematical statistics were offered. Carver's first course, Mathematics 49 and 50, each for 2 hours credit, ran throughout the year at a precalculus level. A second more mathematical course was given by Professor R. W. Barnard, who later taught pure mathematics at the University of Chicago. I took this course and learned some mathematics but not much statistics. I began teaching an advanced course after I got my doctor's degree which was a result of a year in Lund, Sweden, working under Professor S. D. Wicksell.

In those days the *Journal of the American Statistical Association* was well established, but manuscripts with any mathematical content had little chance of being published by the *Journal*. I heard Professor Carver say on more than one occasion that there ought to be a place in this country where a paper in mathematical statistics could appear. I have always thought that the trigger for the founding of the *Annals of Mathematical Statistics* was a paper of mine that was rejected by the *Journal* because it was too mathematical. Carver reacted rather strongly to this and shortly afterward he joined with a friend, J. W. Edwards, who was trying out a new lithoprinting process, in putting out the first issue of the *Annals of Mathematical Statistics* in 1930. Carver assumed the financial responsibility for the new journal and with the aid of two assistants and his friend's support he served as its editor until 1935 when he turned the *Annals* over to the newly formed Institute of Mathematical Statistics. There was a sufficient supply of scholarly papers offered for

publication but the supply of funds to meet the bills was not enough to avoid severe strains. At times toward the end of World War II the *Annals* came close to going broke. I don't know if Carver ever told anybody the cost in dollars of his devotion to statistics but I doubt if he knew closely. Fortunately, the publishers of the *Annals* and the officers of the Institute allowed a really large inventory of back numbers to accumulate during the second World War. Once the war was over, it turned out that there was a healthy market for those back numbers. The faithful industry of Paul Dwyer and Carl Fischer handled the sale of this merchandise. Only their friends knew how hard they worked, but enough money came in to put the *Annals* on a sound financial footing.

The remainder of the 1920s and the first of the 1930s were marked by a steady growth in this country in the number of people whose principal interest lay in mathematical statistics. By living and working in the city where the new *Annals* were edited and by regular attendance at the national meetings, it was easy for me to become widely acquainted with the members of the new group. I spent the year 1930-31 in Stanford University where Harold Hotelling was beginning a career in statistics. When I left Stanford to return to Ann Arbor, Hotelling also left to accept an appointment at Columbia University. On my way back across the country I stopped for a few days in Iowa City where Egon Pearson was lecturing. There a rather remarkable group of students was working with H. L. Rietz, who deserved to be known as the dean of American mathematical statisticians. These students were S. S. Wilks, A. T. Craig, Selby Robinson, and Carl Fischer. They all earned doctorates under Rietz, and I made friends with all of them. Only Fischer, who recently retired from Michigan, is still alive. When I left Iowa City, I went to Minneapolis where I spent five weeks listening to my first series of lectures by R. A. Fisher. Sometime in the next few years I became well acquainted with B. H. Camp of Wesleyan.

In 1935, the summer meetings of the mathematics societies were held in Ann Arbor. The attendees included enough people interested in mathematical statistics to fill the reception room in the Betsy Barbour dormitory on this campus. They were convened to discuss a proposed organization of a new society devoted to mathematical statistics. I do not recall all of the thirty to forty people who were present, but I do remember Rietz, Wilks, A. T. Craig, Carl Fischer, Selby Robinson, and Paul Rider from Iowa

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and H. C. Carver, C. C. Craig, T. E. Raiford, and A. L. O'Toole from Michigan. Others whom I do not recall from there were Hotelling, Camp, Gertrude Cox, and W. A. Shewhart.

I know that previously Carver's idea of the proper form to be assumed by an organization of mathematical statisticians was that of the actuaries, with qualifying examinations for different grades of membership. But at the actual organization meeting this form of a society was not seriously proposed and a form very close to what we have today was adopted with only brief discussion. The Institute of Mathematical Statistics was created on September 12, 1935 in Ann Arbor, Michigan, with the following elected officers: President, H. L. Rietz; Vice President, W. A. Shewhart; Secretary-Treasurer, A. T. Craig. The five-year-old *Annals of Mathematical Statistics* was adopted as the official journal of the new society.

From his joining of the faculty of the University of Michigan until his retirement in 1960 the dominant figure in statistics in Michigan was Harry Carver. He was a native of Waterbury, Connecticut, and he took a B.S. degree from Michigan in 1915. He had a spare well-muscled figure more than 6 feet tall, a sandy complexion, and the coordination of a natural athlete. He won an "M" in track and worked out for years with the cross country team. He was good enough at pocket billiards to have made his living at that game. He could beat ordinary golfers using only a five iron. He greatly enjoyed bridge and belonged to a group which regularly met for poker. I do not know that he was exceptionally good at card games.

As a high school student, he was known for repairing and riding motorcycles. Later, as a student, he enjoyed rebuilding second-hand automobiles, making them better than new. He became known for his fast driving. He made a practice of leaving Ann Arbor at the same time as the train carrying the track team and arriving

first into Chicago. Sometime later he discovered California and with his second wife he more than once drove there nonstop; one driving while the other slept in the back seat.

But soon he became interested in airplanes and became a qualified pilot. He and a friend acquired a small plane and he enjoyed taking acquaintances for rides. He quickly became aware of the problems in navigation encountered by the pilots of the long-range, high-speed planes being supplied to the Air Force. He cultivated friends among officers in the Air Force. He enrolled in and completed the training course being given to United States Air Force cadets. He applied his quick mind and mathematical ability to improving navigational methods then in use. He showed how to use small calculating machines to get numerical results in navigation problems more quickly and accurately. As he neared retirement age he spent much time in Air Force bases in Texas and California.

After retirement he made a study of climatic data for the United States and selected Santa Barbara, California, as the best place to live. He rented an apartment and moved there for several years. At age 80 he quit driving an automobile "while he was ahead" as he put it. His health deteriorated and he moved back to Ann Arbor and ended his days at age 87 in the Michigan Union.

Carver had a very quick mind and he had a warm and sympathetic manner. Taking a course with him was an experience his students did not forget. He directed the work of ten doctoral students. He bordered on the eccentric; his diet seemed to consist largely of crackers and milk. He made a practice of offering to buy a class a dinner if it could beat him at one of five indoor sports—card games or billiards or pool—or at one of five outdoor sports such as running or putting the shot. He never lost.