

The Beckmans and Caltech— Sixty Years of Friendship

TOGETHER ARNOLD AND MABEL BECKMAN have been part of the Caltech story for 60 years. They arrived in Pasadena in 1926, having driven from New York in a Model T Ford with a portable phonograph tied on top. Now their names grace three Caltech buildings, the most recent dedicated this month. The 1926 arrival was actually a return trip for Arnold Beckman, who had begun graduate school in chemistry in 1923. His interest in chemistry had been awakened early, when he came across a copy of Steele's *Fourteen Weeks in Chemistry* at the age of nine and then turned to simple experiments in a shed in the backyard of his family's Cullom, Illinois, home. By the time he graduated from high school in Normal, he had already taken two and a half years of college chemistry. Later at the University of Illinois he switched from organic chemistry, because of a bad case of mercury poisoning, to physical chemistry and came in contact with Richard Chace Tolman. Tolman left Illinois to become professor of physical chemistry and mathematical physics at Caltech in 1921. After Beckman finished his master's degree, he was offered scholarships from a number of schools, including MIT and Chicago. "I decided to come out to Caltech because of Tolman primarily. Also, I think the lure of the West played a big part."

During Beckman's first year as a PhD student he did research in photochemistry with Roscoe Dickinson. He was impressed with "the freedom of discussion with professors and the relaxed atmosphere" at Caltech. And he liked the climate. But there was also a lure in the East — in Brooklyn, to be exact, where Mabel Meinzer lived.



The Beckmans in 1972 at the groundbreaking of the Mabel and Arnold Beckman Laboratories of Behavioral Biology.



Left: Arnold Beckman repairs a tire on his Model T during the Beckmans' cross-country trip from New York to Pasadena in 1926.

Right: Mabel Meinzer married Arnold Beckman in 1925, the year this photo was taken.



When he finished high school in 1918, Beckman had joined the Marine Corps. After basic training he was slated for battleship duty. "We were put on the train to go to the Brooklyn Navy Yard. Well, the train was late getting there, and they'd filled the ship's needs with marines from the barracks in the Brooklyn Navy Yard. We were put into the barracks to take the bunks of those who had been transferred to the battleship. In fact, there was a big element of luck there. I've often thought about how little matters often determine the course of a person's life. In this case, I got the last bunk on the second deck. If I'd been one bunk later, and gone to the third deck, my life would have been completely different, because the people who were assigned to the third deck were shipped over to Vladivostock not long after that. As it was, I stayed there in the Brooklyn Navy Yard. I was there on Thanksgiving Day in 1918. Well, we had our Thanksgiving dinner in the barracks, and then we were ordered to eat another dinner. It turned out that a Red Cross chapter located in the Brooklyn YMCA was having a dinner for wounded marines coming over from Chateau-Thierry and Belleau Wood [in France], and there weren't enough marines to fill the places. So we were ordered to go there and eat another dinner right on top of our own dinner! Fortunately, I was only 18 years old, and I had the appetite

of a teenager, so I could do that. Well, the important thing about the dinner is that one of the girls helping out at the tables is now Mrs. Beckman. If it hadn't been for this unusual double dinner experience, I wouldn't have met her."

And in 1924, after finishing the University of Illinois and a year at Caltech, "I thought it would be a good idea to take a trip back there and see her. So I sailed on a boat, through the canal, back to New York, and I thought I'd spend a short time with her and then come back. By sheer chance, there was another Caltech student — Todd Nies — who went to work for the Bell Telephone Laboratories. It was called the Western Electric Engineering Company, down on West Street, in those days. He said, 'Why don't you stay and get a job back here?'"

So he did. At Bell he acquired some knowledge of electronics and in Brooklyn he acquired a wife. He and Mabel were married in 1925. When A. A. Noyes came to New York in 1926, he offered Beckman a job at Caltech to come back and finish his PhD. "It didn't take much persuasion for me to accept."

They spent four weeks driving across the country. For the new Mrs. Beckman, the trip was a "rather harrowing experience. She'd never been camping or driving out in the open country." Crossing the Badlands in



Left: Beckman, then assistant professor of chemistry at Caltech, cooks flapjacks on a desert camping trip with some of his students.

Right: Mabel Beckman strikes a western pose at Death Valley on an excursion with her husband and a group of students.

South Dakota, they had 19 flat tires in one day. After he had used up all his patching material, "I'd pump up the tire as hard as I could, get in the car real fast, drive along until I'd feel it getting soft, then get out and do it again."

"But Mabel was a good sport; she never complained at all. She didn't drive; I had to do the driving. Finally when we were out in the middle of Wyoming, not a car in sight, she said, 'Maybe I could drive here.' So I let her drive, and I dozed off. After a while I woke up and said, 'Hey, we're going in the wrong direction.' She'd gone through a little town and got the direction mixed up, and was heading right back home. So to this day, I kid her about that."

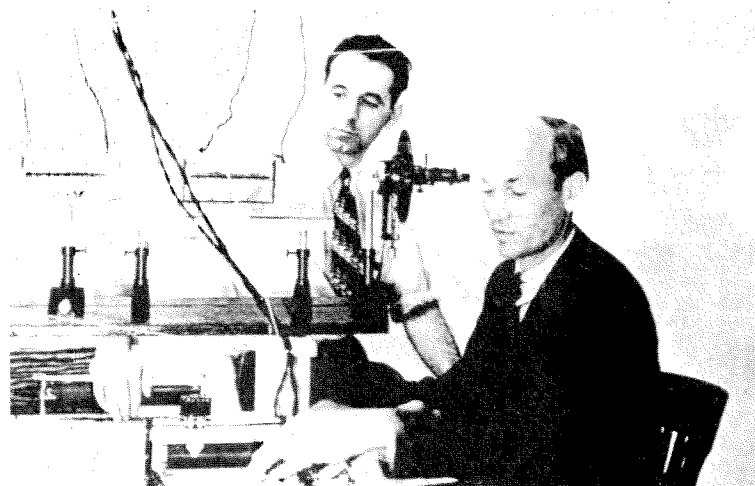
They didn't head home then, nor did they ever, as it turned out. When Beckman finished his degree in 1928, he was offered a job as an instructor. "I liked the idea of staying here. I liked it out here, and Mrs. Beckman did, too. I've forgotten whether I had other offers. I don't think I ever applied for any other job, because I was asked to stay on, and I decided to stay."

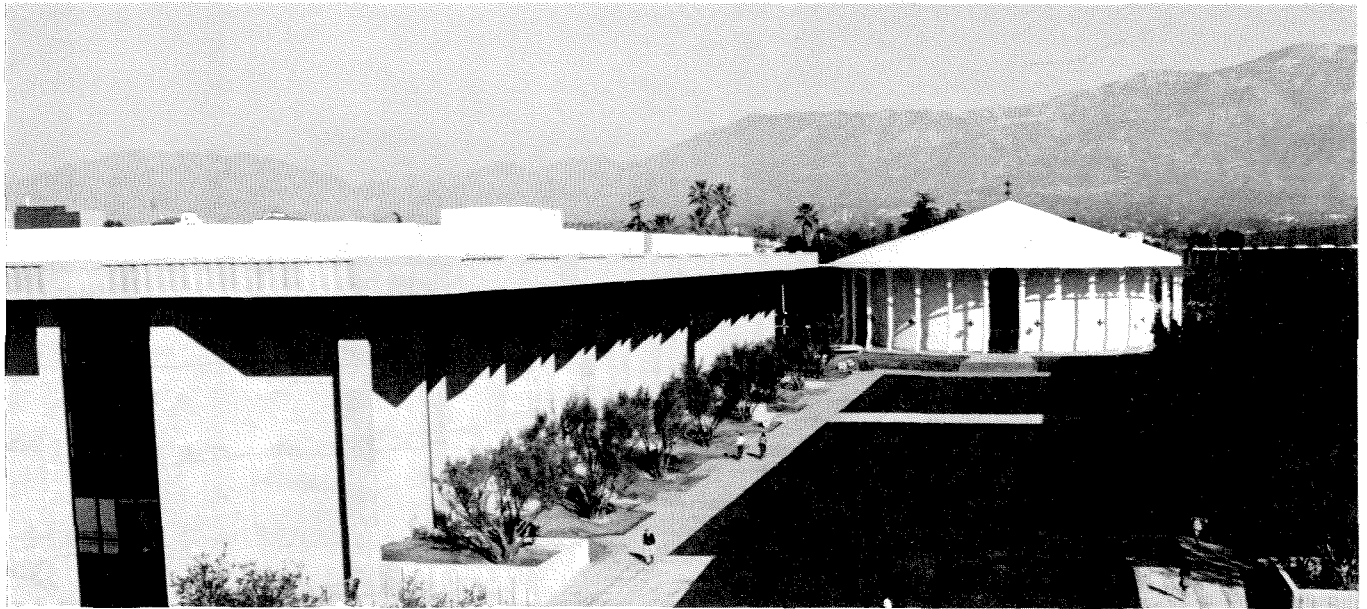
Beckman taught the introductory chemistry course, as well as a chemistry course for engineers. The Beckmans enjoyed having small parties for students in their home and often took students on camping trips to the desert. Beckman also taught a course in

glassblowing — a skill he had learned at the University of Illinois. "I always loved to work with my hands, so glassblowing is just like machine tool work in that respect." But when colleagues kept coming around to ask him to make things for them, he decided to teach a course.

Even then Beckman was making major contributions of one kind or another to expand Caltech facilities. When Crellin Laboratory was built in 1937, he worked with the architect "to make sure that the laboratories were properly located and designed, that they had the proper services coming to them." He also helped design all of Crellin's laboratory furniture, making it adaptable to

Beckman (right) works with a magneto-optic apparatus at Caltech in 1934.





Above: The Court of Man with the Mabel and Arnold Beckman Laboratories of Behavioral Biology on the left and the Donald E. Baxter, M.D., Hall of the Humanities and Social Sciences on the right, flanking Beckman Auditorium.



Beckman receives a brain (in plastic reproduction) at the 1972 groundbreaking of the behavioral biology lab.

Mrs. Beckman shakes hands with a robot strolling around campus in 1979.



future needs. "I think it worked out pretty well. We designed interchangeable lockers, for example — things like that. On the whole, I was quite pleased with the way it came out."

In a somewhat more indirect manner, Beckman was also responsible for the Norman W. Church Laboratory for Chemical Biology. Church owned a racehorse (named Proclivity), accused by the Santa Anita racetrack of being doped. When Church turned to Caltech for help, Millikan sent Beckman out to look into the situation. Although no actual samples remained by then, Beckman criticized the track chemist's technique and results. Church was exonerated in court and in appreciation gave Caltech a building.

In another horse-doping case, Beckman used his ultraviolet spectrophotometer to prove that what was suspected to be caffeine was just another purine body — a metabolic decomposition product. That horse was owned by Louis B. Mayer. "Mr. Mayer didn't give a dollar to Caltech so far as I know."

Beckman was an assistant professor in 1935 when he built a pH meter for a friend. When it began to look as though there might be some demand for the instrument, he and Mabel set out by train to call on chemical supply houses all over the country to market it. That begins another story. Beckman left Caltech in 1939 to devote full time to the development of scientific instruments.

But the Beckmans never really lost contact. In 1933 they had built a home at the

mouth of Eaton Canyon overlooking Pasadena and lived there for the next 27 years. "We had so many friends here, and Mrs. Beckman and I would often come down to Caltech affairs." In 1953 he joined the board of trustees, the first alumnus to be elected. He was also its chairman from 1964 to 1974.

That decade was also bracketed by two extraordinary gifts from the Beckmans, which changed the face of the Caltech campus, the scope of its research, and its involvement with the community. Caltech dedicated the Arnold O. Beckman Auditorium in 1964. Designed by noted architect Edward Durrell Stone, it was originally intended as a place to seat the entire student body, but it has come to mean much more than that. As home to the Earnest C. Watson Lecture Series, the Coleman Chamber Concerts, and numerous other public events, the name "Beckman" has come to stand for a large slice of the cultural life of Pasadena.

Beckman Auditorium was the keystone of what became the Court of Man concept, with Baxter Hall of the Humanities and Social Sciences flanking one side and a new biology building on the other. That was to become the Mabel and Arnold Beckman Laboratories of Behavioral Biology. Beckman remarked later in his oral history: "Over the years my interest in biology and biochemistry gradually increased. But at that time, I was very much concerned about human behavior. . . . If we can get a scientific understanding of human behavior — and at that time without knowing anything at all about it, I said, 'Human behavior must ultimately be chemically related.' . . . After all, the body is nothing but a bunch of chemicals held together. It follows the laws of physics like everything else, but essentially it is a chemical mass. . . . At the time, we had a strong behavioral biology group, so I said, well, we'll build a laboratory for them."

Beckman knew that the behavioral biology building had been foreseen in the Court of Man program long before he indicated he would provide the funding for it. But then, "Mrs. Beckman and I talked it over and said, 'Well, why not?' So that was that."

In 1980 Beckman's many friends established the Arnold O. Beckman Professorship of Chemistry in his honor. When Harry Gray, who considers Beckman "a great teacher and a tremendous intellect," was named to the professorship in 1981, President

Goldberger called the choice of Gray "a signal honor to two great scientists."

The Beckmans now live in Corona del Mar but are still close to Caltech in spirit. Their most recent gift has created the Arnold and Mabel Beckman Laboratory of Chemical Synthesis, which is being dedicated April 25. This brings full circle the work Beckman began back in 1936 in Crellin (which forms the east wing of the new Beckman laboratory), to make it adaptable to future needs. It has indeed "worked out pretty well." □



Arnold Beckman and Linus Pauling at Pauling's 85th birthday in February 1986.

Two great scientists shake hands at the announcement in 1981 of Harry Gray as the Arnold O. Beckman Professor of Chemistry.

