



# Caltech Goes to China

## Entries from a Diary

by Rodman W. Paul

*Last summer Marvin L. Goldberger, president of Caltech, received an invitation to bring a ten-man Caltech delegation to visit educational institutions in China, with the primary host being Tsinghua University in Peking. The invitation was extended by Chou Peiyuan, who received his PhD at the Institute in 1928 and who is president of Peking University and acting chairman of the Scientific and Technological Association of the Chinese People's Republic. Such an exciting offer was accepted happily, and these people set out from LAX on September 6:*

Marvin L. Goldberger, *President of Caltech*

R. Stanton Avery, *Chairman of the Board of Trustees*

Arnold O. Beckman, *Chairman Emeritus of the Board of Trustees*

Bruce C. Murray, *Director of the Jet Propulsion Laboratory*

Seymour Benzer, *James G. Boswell Professor of Neuroscience, representing the Division of Biology*

Robert F. Christy, *Vice President and Provost, representing the Division of Chemistry and Chemical Engineering*

Robert H. Cannon, Jr., *Chairman of the Division of Engineering and Applied Science*

Barclay Kamb, *Chairman of the Division of Geological and Planetary Sciences*

Rodman W. Paul, *Acting Chairman of the Division of the Humanities and Social Sciences*

Rochus E. Vogt, *Chairman of the Division of Physics, Mathematics and Astronomy*

**September 6:** Departure day at last. It's only a few weeks since Murph Goldberger startled us by announcing that he was going to invite the Division chairmen

along with trustees Stan Avery and Arnold Beckman to go with him to the People's Republic of China, but it's been a scramble to tidy up the Division's business and my own, read through half a dozen good histories of China, get "shots" at the Health Center, and buy more camera film than I ever owned before. Clothing has been no problem, since Murph, who has led two previous expeditions to China, tells us that for visitors to egalitarian socialist China correct uniform is simply sport shirts and washable slacks. (Mildred Goldberger warns against loud-colored shirts because they would contrast too much with the universal black or gray Mao suits of our hosts.) We're told to bring one business suit apiece to wear at the half-dozen formal banquets that we are likely to be tendered.

As usual, the plane was late in taking off from LAX, but now we're midway on as comfortable a flight as anyone could ask for. Murph turns out to be not only a poker player but a winner.

Now approaching Tokyo, where we change planes for Hong Kong. It's intriguing to realize that, although we took off from LAX after 1:30 p.m. and have flown westward for ten hours and a half, we are only just now seeing a golden red sunset over Mt. Fuji.

**September 8, Hong Kong:** Murph has given us this one day in Hong Kong to rest up before we enter the People's Republic, but it's too exciting here to loll about. This is an intensely alive place. It must be the most crowded city in the world. The streets and stores are filled with lively, cheerful-looking crowds that are constantly in motion. There seem to be vast numbers

filling menial jobs, presumably because the labor market is flooded with both Hong Kong's own local poor and with thousands of refugees from the mainland. The tall buildings that are going up everywhere suggest how scarce, and hence expensive, land has become. Out in the harbor there is still another population that lives afloat. The junks that are home for so many are motorized now, to my regret, for I dearly wanted to see Chinese junks with their great rectangular sails tacking through this mass of international shipping.

For dinner we took a funicular tram part way up Victoria Peak, then hiked the rest of the way to a restaurant from which we had a superb view over the city and harbor. Barclay Kamb climbed further up the hill than anyone else, to prove that he really is a geologist. Robbie Vogt's suitcase never arrived last night; when recovered by the airline many hours later, it had been robbed of an expensive telephoto lens.

*September 9:* Left early by train for Canton, which my Chinese-printed guidebook calls Guangzhou. We traveled up to the Chinese border in a hot, crowded, rather dirty capitalist train; at the border we walked across the bridge into Chinese territory and climbed into an air-conditioned, comfortable, spotlessly clean socialist train where they served us green tea. In this first confrontation, capitalism loses.

Now we are moving smoothly through miles of hot, steamy tropical country, where the canals and embanked streams are heavy with mud. Every inch of land is in use, most of it in rice, but there are patches of American corn and numerous small fields with other crops. Tree-planting projects everywhere. The long-leaved pine I can understand, but why the eucalyptus? Water buffalo, presumably a prized possession, are being grazed, with one person assigned to watch each buffalo. Robbie Vogt is prepared to retire as chairman of Physics, Mathematics and Astronomy to become a water-buffalo tender. We encouraged him in this idea, assuring him that water buffalo would be much easier to deal with than the Caltech faculty.

The hard-working peasants that we see out the window don't look like newspaper pictures of smiling characters in Mao suits. They are often shirtless, wear big straw hats, miscellaneous pants, and look hot and sweaty like any other humans in this climate. Men and women work side by side in the rice fields, up to their knees in water, and bent over for hours at a time. Other peasants move along the dirt roads carrying on their

shoulders a heavy load that is nicely balanced in two parcels suspended from either end of a bamboo pole—a technique for weight-carrying that the Chinese have practiced for centuries. But modernity is there too, because a few farm trucks and some dark green trucks of the People's Liberation Army go roaring past, kicking dust into the faces of the pedestrians, while bicycles are omnipresent and used for carrying all sorts of loads in addition to the rider.

*September 10, Canton:* When we reached Canton yesterday evening, we were met by a large delegation representing the local and national ministries of education and Sun Yat-sen University, which we are to visit. The Chinese are punctilious hosts. We are learning that they are always on hand to greet you when you arrive; and after everyone has shaken hands with everyone else, starting with the heads of the visiting delegation and the institution about to be visited, then you are always taken into a reception room to have green tea. You sit in overstuffed armchairs that are protected by antimacassars, but no business is done at that time, because your hosts' primary concern is to let the visitors rest after their journey. There is here a charming old-fashioned concern for guests that we rarely display in our bustling society.

We are quartered in a characterless, run-down hotel that is in process of reconstruction. Robbie claims that it reminds him of a German army barracks, but I've told him that it's luxurious compared to the United States Navy's training quarters that I once knew. The night was exceedingly hot and humid, but I slept hard



Murph Goldberger and Madame Wang, a physicist, who was technical host to the group during most of the trip.

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until early morning, when the electric fan ran wild and started to chew up the room. Jerking out the base plug stopped the carnage, but I couldn't get back to sleep, and so sat in the window watching the little run-down cottages behind the hotel where the day's routine was just beginning. Each family brought out a bucket of water and a wash basin and squatted down to wash face and arms and brush their teeth. They spit into an open gutter and dumped their wash water there, while chickens ran around them as if in a barnyard. Apparently life in the city is not all that different from the peasant existence that we saw yesterday from the train windows. Clearly, for most people this is a poor country.

In sharp contrast, in the evening the officials of the ministry of education took us to dinner at a famous restaurant, which served an excellent and exotic meal. Faced by sheer need to survive, I did surprisingly well with the chopsticks. The banquet lasted through two and three-quarters hours of steady eating and featured eight main courses plus numerous special vegetable servings. This is quite aside from small items equivalent to hors d'oeuvres that we had before the meal, and a soup that tasted like Floating Island that ended the feast. (In China soup is served at the end, not the beginning, of dinner.) Besides, two-thirds of the way through we had a specialty, which consisted of a kind of chicken soup filled with much solid matter.

To get ready for this splendid repast I had taken a walk before supper, and had come upon a long, low building from which came such a noise of high-pitched voices that I assumed a political meeting must be taking place. Instead, it was a civilian mess hall where perhaps 200 working men sat in rows on benches, packed solid against each other, hot and sweaty, as they downed bowls of rice and a kind of thin stew. Truly, there are several levels of economic existence in this city.

The same contrast characterizes transportation. Most people travel on foot, or on the thousands of bicycles that are constantly whizzing down each main street, or on the overcrowded shiny new buses. At times it's impossible to cross the street because the bicycle traffic is so heavy. But we, as allegedly distinguished visitors, are taken everywhere in a fleet of state-owned cars that crash through the foot and bicycle traffic with a furious blowing of horns. Protocol dictates that Murph must ride in the lead car, and he was fated to ride alone until he labored through an explanation of Stan Avery's distinguished status as chairman of the



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Board of Trustees. No more than two of us are ever permitted to ride in a single car, apparently for fear that we might be crowded or uncomfortable. Or perhaps it's just protocol again.

We have been placed under the care of Wu Kuo Hua, a member of the Foreign Language Teaching Group at Tsinghua University. Tsinghua is to be our principal institutional host in China, responsible for our living and travel arrangements and for paying our bills. By a somewhat unfortunate phrase, Tsinghua was described to us as "the MIT of China." It is located in Peking and is the scientific sister to Peking University, which has a much more general curriculum that spans the arts as well as the sciences. Mr. Wu, as we have learned to call him, is our interpreter, but he is also responsible for our daily plans. He is a good-natured and patient young man who seems destined to have a nervous breakdown if we don't quit making special requests to visit places not on our itinerary. We are learning that, in a highly organized, centrally administered government like socialist China's, any deviation from a formally prepared schedule causes administrative consternation and an almost audible sound of gears grinding as officials try to redirect what seems to be massive machinery.

A visit to what is now called Sun Yat-sen University was a nostalgic experience for Stan Avery, who studied there during a year that he spent as a student in China during 1929-30. The place is run down, but in a poor country, perhaps it's a question of regarding other things as more immediately important than paint and gardening.

*September 11, Peking:* We arrived last night after a flight of more than 1,100 miles from Canton. Geographically as well as in population this is a huge country, about the size of the United States. Our flight took us from the humid tropics of southern China up to the much drier plains that surround Peking, which used to be called "the northern capital." Expressed differently, we went from rice country to wheat country. En route we swept over the two great rivers that drain eastern China, the Yangtze and the Yellow, and over many more miles of mountains than of fertile plains or valleys. I can well understand why my handbook says only 11 percent of China is under cultivation.

Robbie Vogt is destined to be our hard-luck traveler. In addition to having the airline lose his suitcase, his pajamas have failed to come back from the hotel laundry, and now he, an insomniac, has been assigned to room with me, a snorer. He says it's a conspiracy. He points out that he was the last one to be served at dinner and that he can't get any more of the only brand of Chinese beer that he likes.

If you thought Canton was crowded, you ought to see Peking. Even though the main streets have been widened into broad boulevards, they are jammed during rush hours with more people than I ever saw before. The handbook says that 95 percent of China's 900,000,000 people live in the cities and villages of eastern China, while the arid and mountainous western regions go almost empty. There is an almost oppressive sense of being always engulfed in masses of people. In transportation, as in so many aspects of this revolutionary society, the new competes with the old: Big, modern double-length buses (hinged in the middle) carry overloads the way San Francisco cable cars do; but they are surrounded by thousands of bicyclists and pedestrians, while off in the gutter ancient horse-drawn wagons, handcarts, and pedicarts struggle stolidly along. At intervals the moving crowd scatters precipitately to make way for horn-blowing official cars like ours or the omnipresent military trucks of the P.L.A.

The newer public buildings that we passed en route to our first day at Tsinghua University were all done in the massive rectangular style that Stalin imposed on Soviet Russia. It's a pity that the Chinese have given up their traditional architecture so easily.

At Tsinghua we went through the usual procedure of being taken into a reception room for tea, but very soon we were at work. The host institution led off with careful presentations that described the nature of their

university, its uncomfortable recent history, and its pressing needs during the immediate future. Our delegation then responded, with Murph giving a clear and succinct introductory statement, while Bob Christy and others took up selected aspects of Caltech.

It is becoming very clear why Caltech was asked to bring a delegation to China. The Chinese universities have just emerged from a disastrous period of ten years of neglect and persecution. First, during the 1960's, they suffered the Cultural Revolution, during which the universities were closed and the professors were sent off to rural areas to learn farming. (Reflection: This must have been almost as hard on the farmers as on the professors.) Then in the 1970's they were hit by the prejudices of the Gang of Four, headed by Chairman Mao's wife. Being profoundly anti-elitist, the Gang of Four were also anti-intellectual. When the universities were permitted to reopen on a limited scale, with only a small percentage of their former enrollments, they were sent students and new junior faculty who had been chosen on the basis of political worthiness rather than on tested or demonstrated intellectual ability. This autumn, for the first time in a decade, the universities are going to receive students who have been required to take entrance examinations.

The new "pragmatic" government that has gotten rid of the Gang of Four is sharply aware that their country has lost at least ten years of teaching and research, and in practice the loss must amount to a full generation, because before the Cultural Revolution, China suffered years of imposed Russification, during which the universities tried unhappily to copy the



A typical reception—with a choice of beer or orange soda.

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The Imperial Palace at Peking

Russian system that separates teaching from research. Before that the country was torn up by the civil war and the war with Japan.

As part of the turn to pragmatism, older scholars who took higher degrees years ago at American, European, and Japanese universities have been “rehabilitated” and are now in positions of authority. The key person in opening negotiations with Caltech, for example, was Chou Pei-yuan, who took his PhD at Caltech in 1928 (same year as Arnold Beckman). Chou is president of Peking University and vice chairman of the Chinese Academy of Sciences. These older scholars are eager to send both students and faculty to well-known places like Caltech, so that China’s obsolete science can be brought up to date.

*September 12, Peking:* We had a good visit to an agricultural commune outside Peking, except that we had no chance to visit homes or talk casually with individuals. Being sensible people, the Chinese have doubtless seen to it that our experience should be at a notably successful commune, which this certainly is. It houses 18,000 families, for a total of about 80,000 people. The commune is so nearly self-sustaining that it provides practically all services for humans, animals, and machines. It feeds itself and exports its surplus to Peking. The commune raises cows, pigs, ducks, grain, rice, and vegetables. Really, it is a kind of well-organized agricultural factory run by the workers in accordance with a basic ideological scheme that has been altered to adjust to realities. Their most attractive crop was to be seen at the combination kindergarten

and day care center. There the children looked healthy, happy, chubby, and altogether charming. They did a Tibetan folk dance for the “American friends,” as we are termed. (Paying tribute to the culture of ethnic minorities is a big thing in China just now, hence the Tibetan touch.) Since both parents work, these little children get three meals a day at the school and can stay overnight if necessary.

*September 13, Peking:* A very good working session at Peking University today. Here, too, the lag caused by the Cultural Revolution and the Gang of Four has been very serious. It is an attractive old campus that incorporates the former Yenching Institute, which was designed by the American architect Henry Killam Murphy, who must have felt a well-deserved respect for traditional Chinese architecture. But the library, which claims 3,000,000 volumes, got stuck with the Dewey Decimal system years ago, just as we did at Caltech. I have a mental picture of some determined missionary shoving that disastrous cataloging system down their throats 50 years ago along with Western medicine, Christianity, and firearms. The intricate, almost arcane, nature of the Chinese language and the fact that it has no alphabet must give librarians some unusual problems.

By now the varying individual personalities of our delegation are beginning to reveal themselves. Barclay Kamb is our wanderer. He believes firmly that “a geologist can’t get lost,” and never hesitates to go roving off, despite the obvious fact that none of us can either read the street signs or ask directions. His Polaroid camera is a sensation, especially with children.



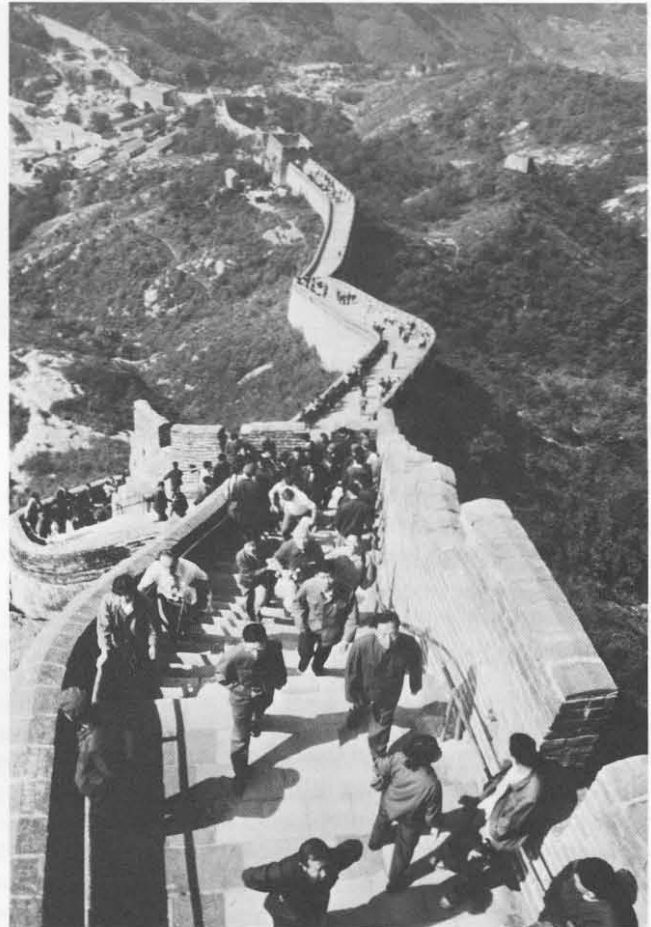
Barclay's Polaroid camera is a sensation wherever he goes.

Barclay's technique is to indicate by gestures that he wants to take someone's picture, then he develops the photograph while the intrigued subject waits and a crowd gathers. Then, with a flourish, Barclay presents the picture to his delighted victim. By that time everyone else wants to have his picture taken, and Barclay has done more good than 12 ambassadors.

Seymour Benzer is a wanderer of a different kind. He is eager to find restaurants that serve such delicacies as sautéed cobra, braised salamander, three-snake soup, and dog meat. Stan Avery had an apparently limitless supply of red self-adhesive stickers that say "smile" in Chinese and show a beaming face drawn with a few pen strokes. By now there are people all over eastern China who have red stickers on their coat lapel or shirt front. Bob Cannon keeps eagerly practicing the list of questions and salutations that a Taiwanese graduate student prepared for him back at Caltech (key question: "Where is the bathroom?"). Murph Goldberger is learning some valuable lessons that a new president should know. For example, after we had discovered the blessed fact that at any hotel we could order a "Western" breakfast of omelet, toast, and sometimes sausage, Murph, who is enthusiastic about Chinese food, proposed that we eat Chinese breakfasts. He was unanimously voted down. You can't press a faculty too far.

*September 14, Peking:* This was a great day. We have all been clamoring to see the Great Wall, and early this morning we were driven two hours northwest from Peking to climb and hike along a section of the wall that has been rebuilt for miles as an attraction for the tourist trade of both Chinese and foreigners. To me, as a historian, one of the encouraging signs has been to note that the modern Chinese, children of the most drastic revolution any nation has experienced, queue up in long lines to gain admittance to historic buildings and sites. Crowds of them were on the wall today, or having picnics at the base of this particular section. Despite a lifetime of seeing pictures of the Great Wall, nothing adequately prepares you for the sight of this immense structure snaking its impressive way into the distance, up mountain slopes and down again, as far as the eye can see—for 1,400 miles, we were told.

On the way home we visited the Ming Dynasty tombs at Dingling. Here, again, the Chinese government, although run by apostles of revolution, is carefully preserving this great historical treasure for its own



Nothing adequately prepares you for the sight of the Great Wall.

people even more than for the lucrative foreign trade. I couldn't discover whether these monuments to harsh and unequal rule had been vandalized during the past 30 years, like Cromwell's Puritans scarring the great cathedrals, or whether the visible damage and graffiti were simply the normal work of ancient grave robbers and modern teen-agers.

In the evening we were taken to see the Peking Ballet stage a trilogy of highly stylized traditional Chinese fairy tales, quite free of political propaganda. I judge that one would not have been able to see this three or four years ago, for the Gang of Four demanded politically "relevant" drama. Another sign of China's return to sanity.

*September 15, Peking:* This was a fun day, however academic. I was sent out to Peking University to explain why Caltech teaches the humanities and social

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sciences. Despite the handicap of working through an interpreter (one learns to feed him only a few sentences at a time), this became a very lively session that filled the three hours before lunch, and the historians in this mixed audience of faculty and administrators asked me to return after lunch "to teach a sample class just as you would at Caltech." Any of my students at Caltech during the past 30 years would have recognized the performance that resulted, because I became absorbed in what I was doing, talked with my hands as I always do, worked from a map, and moved restlessly about while fielding questions that seemed to come from all over the crowded room. Many of the listeners understood a lot of English, and every time the poor interpreter stumbled, because he was an English teacher who knew no history, four or five of them would jump on him in furious bursts of Chinese. The pathetic part of this very active day was the discovery of how severely these members of my profession felt their isolation from the great international world of historical thinking. We kept at it for over three hours.

*September 16, Peking:* An extraordinary event. Mysteriously we were told that after dinner we should all go to our rooms, change into a dark suit, clean shirt, and tie, and wait for a possible call. When the call came, it was for us to enter a convoy of automobiles and be driven to the Great Hall of the People. This is an honor comparable to being summoned to an audience at the Kremlin or the Vatican. Through the darkness we swept down to Tian'anmen Square, swung past the front of this huge building that can seat 10,000 members of the Communist Party, and were admitted from the rear into a very high-ceilinged reception room. There, it developed, our host was to be one of the vice premiers of China. Wang Chen, one of the survivors of the Long March, a man greatly honored in the Party and in governmental circles. He seemed to be in his late seventies. His present post is Vice Premier for Industry and Technology.

We sat in the now familiar stuffed armchairs with antimacassars and were served green tea (of a special blend, we were told). The president and vice president of Tsinghua University and the other higher officials with whom we had been dealing all week were present. We felt a sense of tension. This meeting meant that the week had indeed gone as well as we had guessed, and now Caltech was about to be propositioned. The vice premier returned to the theme we have heard so often:

The Cultural Revolution and the Gang of Four have left China far behind in science, technology, and related industry; the men trained at Caltech have done well and are now restored to authority. Would Caltech form a partnership with Tsinghua University to train faculty, postdocs, doctoral candidates, and eventually undergraduates?

Murph replied clearly, warmly, but carefully, lest he overcommit us. He is very good at this delicate business of diplomatic negotiations for scholarly objectives. He, Bob Christy, and Stan Avery have spent hours beating out a basic policy with the Chinese, while the rest of us have had specialized assignments or have gone walking about this intriguing city. Now Murph firmly stated Caltech's reservations, based on what we have learned from this "on-site" inspection. First, Caltech is a small place and is determined to remain so; hence we could not handle a flood of Chinese scholars. Second, it would be pointless to send to Caltech any save the very brightest. Third, a working knowledge of English is essential and must be acquired before arrival.

Our host, this aging survivor of the original group that has created modern China, replied with a speech that must have been outlined to him by his staff on the basis of the week's negotiations. It was an acceptance, point for point, of what has been tentatively proposed, including Bob Christy's suggestion that since it takes six years to train a doctoral candidate and the Chinese are in a hurry, the process could be speeded up by first sending present faculty and postdocs for relatively brief periods of intensive study (one to two years). They could then return to China at once to begin educating younger men and women who could form the next wave of scholars to be sent for study in the West.

So there was agreement on both sides, and suddenly this solemn, fascinating experience was over, amidst a veritable downpour of expressions of mutual esteem and hopes for everlasting friendship. The main purpose of our visit to China has been successfully completed.

Murph and Bruce Murray are to fly back to California tomorrow morning, after we make a visit at 8 a.m. to view the late Chairman Mao's body as it lies in state (in a glass case) in the huge new mausoleum that the Chinese erected in record time. So ends the first half of our visit. □

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*Part II will appear in our next issue.*