

Rice in the Dragon's shadow: CHINA 1976

by Randy Barker



The political turmoil of the 1970s formed the backdrop to the first visits of International Rice Research Institute staff to China. Agricultural economist Randy Barker, one of the team of scientists who ventured to the world's largest rice producer, recounts the experience.

The first person-to-person contact between the International Rice Research Institute (IRRI) and China occurred in 1974. On that occasion, IRRI Director General Nyle Brady joined a delegation of plant scientists for a 1-month tour during which he provided China with seeds of IRRI-developed rice varieties. In March and April 1976, a team of eight Chinese agricultural scientists visited IRRI twice. With the success of these visits, the Chinese government invited an IRRI team to China in July 1976. However, Chinese Chairman Mao Zedong's illness—which resulted in his death on 9 September—forced the trip's postponement until October.

The seven of us who made the journey (see map, page 26) represented a good mix of nationalities and disciplines: Nyle Brady (director general, United States), Mano D. Pathak (entomologist, India), Shu Huang Ou (plant pathologist, China), Shouichi Yoshida (plant physiologist, Japan), Gurdev Khush (plant breeder, India), Surajit K. De Datta (agronomist, India), and I (economist, United States).

Beijing, 7-12 October

We took the train from Hong Kong to Guangzhou (Canton) on 7 October, changing trains at the Chinese border before flying to Beijing. Unbeknownst to us at the time, the infamous Gang of Four had been arrested in a coup d'état on 6 October. The Gang of Four was a leftist political faction composed of four Chinese Communist

party officials, including Mao's wife, Jiang Qing. The other members were Zhang Chunqiao, Yao Wenyuan, and Wang Hongwen. They were charged with a series of treasonous "counter-revolutionary" crimes. What we witnessed, however, in the meetings, the entertainment, the confessions on the wall, even the drab gray-blue look-alike clothes that people wore, was still a part of the soon-to-end Cultural Revolution (1966-76).

The route that we followed in China was the same as that assigned to professionals and tourists alike—Beijing, Nanjing, Shanghai, and Guangzhou. Our visit was a combination of professional activities, meetings, and sightseeing. We visited research institutions and communes, were briefed by staff at the National Academy of Agriculture and Forestry Science, and held discussions with agricultural scientists.

One of the most surprising visits was to the Institute of Microbiology,



THE AUTHOR (left) around the time of the 1976 China visit and Nyle Brady, IRRI director general 1973-81.

where they collected species of fungi. We were ushered into a room with drawers full of species that had been collected over time. Our interpreter pulled open a drawer randomly to show us what was inside. The fungus in the drawer had been collected and classified by S.H. Ou from 1934 to 1936 while he was working at the Institute of Agricultural Science in Jiangsu Province. You can imagine Ou's excitement. Other drawers were opened up and two or three also contained

species that Ou had collected.

We had our first glimpse of agriculture at the Double-Bridge Commune 25 km east of Beijing. The population of 40,000 was situated on 90 square kilometers, including 3,600 hectares under cultivation. There were six production brigades and 62 production teams—a structure that to me seemed comparable with that of the U.S. army. The main crops were wheat, rice, vegetables, and fruits. Livestock included dairy, pigs, ducks, and fishponds. Vegetable, fruit, and livestock products were shipped to nearby Beijing. At harvest time, the factories were required to provide labor to the commune free of charge.

From Beijing, we took the night train to Nanjing. Except for us, the only other passengers on the train were soldiers. At the time, movement in China was strictly controlled. Most people were assigned to communes and given ration cards for food. Grain was rationed—about 15 kg per month for city folk and double that for a person doing hard work in the commune. There was almost no opportunity for civilians to travel. At 6 a.m., we were woken by loudspeakers blaring words of wisdom from Mao Zedong. Later in the morning, we passed

through Anhui Province, historically one of the poorest areas in China and the setting for Pearl Buck's book *The Good Earth*.

Nanjing, 13-15 October

In Nanjing, we visited the Soils Institute of the Chinese Academy of Sciences, which had been protected from the Cultural Revolution. Staff members there were particularly proud of their library, which contained some foreign publications. This raises an interesting point: it seems that before and during the



FORMER IRRI STAFF who made the 1976 trip to China (left to right): rice breeder Gurdev Khush, entomologist Mano Pathak, and plant pathologist S.H. Ou.



THE IRRI TEAM with some of their Chinese hosts at Tai Lake, Wuxi, on 17 October 1976. Front row: S.K. De Datta (far left), S.H. Ou (third from left), then-IRRI Director General Nyle Brady (center), Randy Barker (fourth from right), and Mano Pathak (third from right). Back row: Gurdev Khush (left) and plant physiologist Shouichi Yoshida (right).

Cultural Revolution, agricultural research in general was protected. For example, semidwarf rice varieties (which resisted lodging, or falling over, just like the first Green Revolution semi-dwarf variety IR8, bred by IRRI) were first bred in China (including Taiwan) in the late 1950s and early 1960s using different parents. We now know that the Chinese and IRRI semidwarfs all have the same dwarfing gene. The Chinese also developed and released hybrid rice in the 1970s, using IRRI varieties IR24 and IR26 as fertility restorer parents. Hybrid rice varieties would soon cover around half of the country's rice area.

Basic research was conducted at the provincial and county level with extension of research findings carrying down to the commune, brigade, and production team level. We visited Jiangsu Academy of Agricultural Sciences (JAAS), which had a staff of 600 and 67 hectares of experimental fields. This was the same institute where S.H. Ou had worked before leaving mainland China for Taiwan. I photographed Ou sitting in his old office chair (see photo on page 24).

Also at JAAS, we met a "model farmer," Mr. Chen, who was carrying

out research. He was selected as a "national hero" in 1954 when he achieved a record rice yield. He used a system of nutrient management called "three yellows and three blacks," which referred to the green and yellow coloring of the various stages of growth. In a technique similar to that employed with IRRI's leaf color chart today, farmers made crop management decisions according to the colors of the plant.

Wuxi, 16-18 October

We took the train from Nanjing to Wuxi on the morning of the 16th. I had brought along a copy of John Lossing Buck's seminal work *Land Utilization in China*. I read the pages where he described the area we were traveling through, the lower Yangtze River Basin. As I looked out the window, the cropping patterns seemed much as Buck had described them. Buck was the husband of Pearl Buck and together they taught at the University of Nanking from 1920 to 1933. From 1929 to 1933, Buck organized a survey of 38,256 farm families in 22 provinces, which provided the materials for the book. The three-volume book was first published by the University of Nanking in 1937. His demarcation

of the agricultural regions of China remains basically the same today.

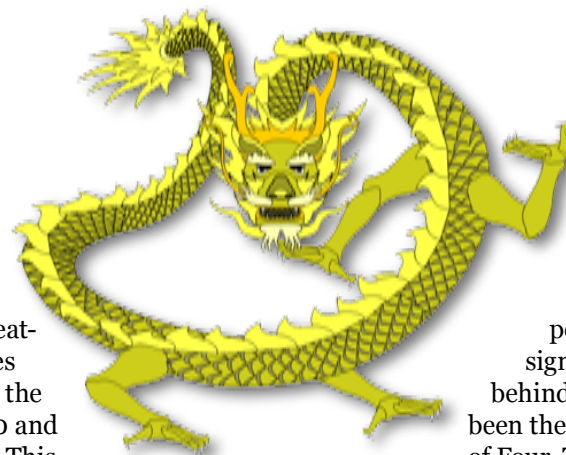
We visited two communes near Wuxi, where the main annual cropping pattern was wheat-rice. These two communes had a plan for developing the land, which began in 1970 and was to extend up to 1985. This involved an enormous amount of human labor to move soil, dig and straighten irrigation and drainage canals, and level land. The land was originally divided into about 15 fields per hectare, but, when we were there, each hectare was just a single field. The irrigation water was piped underground.

One evening, we attended a Chinese movie. It was much like an American melodrama. At one point, a Chinese and a Vietnamese naval ship were approaching each other. It was easy to make out the villains by their sinister looks. A peasant on the Chinese ship was about to fire at the Vietnamese ship when the party secretary put a hand on his arm and said, "We don't shoot until they shoot first."

My most vivid memories were of two events, one peaceful and one not so peaceful. First, we took a boat trip on the famous Tai Lake (see photo on page 25), and I can remember sitting on the lake's edge watching the sun set. Second, and even more memorable, on the day we arrived in Wuxi, S.H. Ou and Shouichi Yoshida read signs on the wall and told us that something big was afoot. This was the beginning of the mass movement against the Gang of Four. On the morning of the 18th, on the way to the railroad station, we passed demonstrators parading in the streets carrying signs condemning the Gang of Four. Our interpreters said very little. But I was sitting next to one of our interpreters, Mr. Huang, who was obviously pleased. As he put it, "The masses know what is best."

Shanghai, 18-21 October

After visiting a doll factory, we boarded the train for Shanghai at



about 10:15 a.m., arriving two hours later. The whole city was buzzing with demonstrators. Signs on every wall denounced the Gang of Four. Crowds of people were either reading the signs or forming ranks to march behind red banners. Shanghai had been the headquarters for the Gang of Four. The demonstration was very well organized and a great victory for the people (meaning Deng Xiaoping, about whom I will say more later).

We were asked to stay in our hotel except when escorted by our hosts, and to take no photos. However, we were able to hold discussions with scientists and make visits to two communes. We learned quite a bit more about the accounting system and taxation procedures—commune, brigade, production team—much of which carried over into today's farm and village structure with the dismantling of the commune system.

One evening, members of S.H. Ou's family came to visit him. He met them in the lobby, which he felt was safer than meeting in his room. When I asked him later what the family thought of the demonstrations, he said: "We didn't discuss this, only family matters."

Guangzhou, 21-26 October

On the 21st, we flew from Shanghai to Guangzhou, where authorities were preparing a celebration of the people's victory over the Gang of Four. To avoid the crowds, we were taken to a hotel at the Zhonghua hot springs.

We were briefed at the Guangdong Provincial Academy of Agricultural Sciences by a rice specialist, Lao Yanhai, who had been to IRRI. A main focus of plant breeding was on the three-crop system of rice, which they claimed would yield 16 tons or more per hectare per year over three crops. They were even trying to introduce a fourth annual crop, rice followed by wheat, soybeans, or rapeseed. The breeding stressed early maturity, resistance to insects and disease, and high yield.

At this point, I want to digress

and point out that each briefing was preceded by a short political speech. One of the Chinese scientists began his talk as follows:

"Since the liberation, under the guidance of Mao Zedong, following the movement to deepen the criticism of Deng Xiaoping, the rightist revolutionary, following the principle of learning from Dazhai, and carrying on our work in a self-reliant way, we reformed the cropping system to grow three crops of rice."

It was quite a mouthful. Later, I asked our Mr. Huang if Deng Xiaoping was wrong in his agricultural policy. He answered that Deng had the wrong attitude about Dazhai. Dazhai was a brigade in Shanxi Province that had, as the saying goes, "pulled itself up by its bootstraps," although some said they received a lot of help from the government. Everywhere we went, there were big red banners proclaiming: "In agriculture learn from Dazhai." Apparently, Deng Xiaoping felt there should be more emphasis on economic development rather than taking the concept of self-reliance, as expressed in Dazhai, to the extreme.

Deng Xiaoping, of course, having outmaneuvered the Gang of Four, would soon become de facto leader of China, replacing his long-time friend, Zhou Enlai, who died of cancer in January 1976. Although he never held office as the head of state or the head of government, Deng served as de facto leader from 1978 to the early 1990s. Under his leadership, China established an open market economy and abolished the communes in favor of small family farms. The increase in productivity was dramatic and, a decade later in the late 1980s, Vietnam would follow the Chinese policy, also boosting productivity remarkably.

One evening, we were taken to see an "opera." This was not the kind of Chinese opera that we were familiar with. Instead, it was a play in which the Communists were fighting the Nationalists. At one point, it seemed that the Nationalists had the Communists

pinned down. "Go over to the next hill and get the Party Secretary! He will tell us what to do."

At all of the major stops, we handed out publications and rice varieties and received publications in return. We also brought hand-operated fertilizer placement machines. In 1976, as in 2008, there was a worldwide energy and fertilizer shortage. IRRI was experimenting with methods of placement to improve fertilizer-use efficiency.

On the next to last day of our tour, we visited the Syn Hwa People's Commune about 40 km northwest of Guangzhou. S.K. De Datta and I were at a brigade research station. I said to S.K., "You see that implement over in the corner? That looks just like our fertilizer placement machine." We began asking questions, and learned in our discussions that deep placement had been widely practiced in southern China since the late 1960s. Shouichi Yoshida told us that a Japanese team discussed this method with the Chinese in the mid-1960s. His uncle had helped to popularize the method in Japan during World War II.

Homeward bound

On the 25th, Nyle Brady left for Hong Kong and then Washington, D.C. On the morning of the 27th, the rest of us boarded the train for Hong Kong and left as we had come. The trip marked the beginning of dramatic changes in China and of a close relationship between China and IRRI. Back at IRRI, we met the staff at the guesthouse to report on our trip and later published a report in English and Chinese (with a red cover), *Rice research and production in China: an IRRI team's view*, which detailed our observations. 🍚

Dr. Barker headed the Department of Agricultural Economics at IRRI from 1966 to 1978. In 2007-08, he returned to IRRI as acting head of the Social Sciences Division. He extends his thanks to those who made the trip with him and others for their useful comments.

