The Scientist

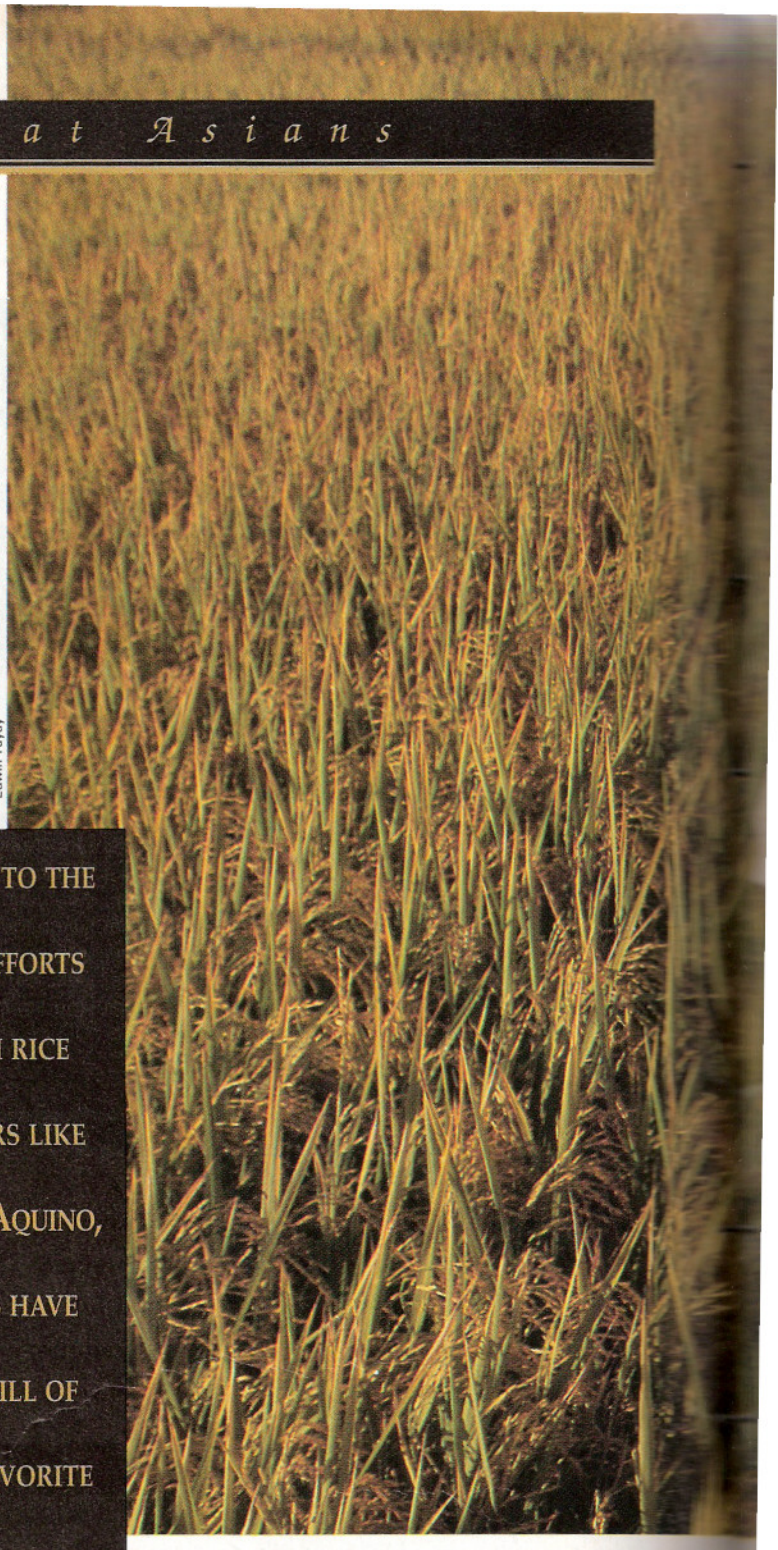
The 100, a book ranking the most influential people in history, places the 19th-century French chemist and biologist Louis Pasteur 11th for his discovery that germs cause disease. That scientific milestone led to a host of advances in medicine and hygiene that, in effect, gave a second lifetime to later generations who would otherwise have succumbed to microbes before 40. Rodolfo Aquino and other equally anonymous grain-breeders at the International Rice Research Institute in Los Baños, southeast of Manila, have wrought a similar victory against another global scourge: famine. "What happened in agriculture in the 1970s is unparallelled in history," declares IRRI director general Klaus Lampe, who leads a staff of 1,400 drawn mostly from Asia. "The modernization of rice production provides food for an additional 700 million people." Put another way, a nation half the size of China would not have rice to eat today were it not for the high-yield, pest-resistant — and tasty — strains developed through the decades by IRRI.

At 57, Aquino (no relation to Ninoy) is the Philippines' foremost rice breeder, who has crouched at the front lines of Asia's war on famine all his life. Now one of IRRI's most senior scientists, he still spends half of every day in the field. As a child in his barrio of San Jose, south of Manila, Aquino learned to plant, nurture and harvest the crop, the start of a lifelong passion. For 7,000 years Asians too have held the swamp grass *Oryza sativa* as dear as the very life it sustains, savoring it in cuisine, celebrating it in poetry and art, and cultivating it as the center and foundation of civilizations. Aquino also paid the grain homage, devoting his youth to the study of agriculture and plant breeding at the University of the Philippines at Los Baños, Asia's leading institute for the art and science of cultivation.

For a rice scientist then as now, the place to be was the International Rice Research Institute, an overseas-funded organization established in 1960 by America's Ford and Rockefeller foundations. Its goal: to develop and disseminate to farmers at low cost improved varieties that would boost harvests in the world's most populous region. In 1962, the 25-year-old "Rudy" Aquino joined IRRI as part of a 10-member team headed by American Peter Jennings. Among the Filipino's unsung tasks was a historic one: pollinating IR8, the 1966 strain that was the first of several "miracle rice" varieties that were the seeds of Asia's Green Revolution. IRRI combined an improved Taiwan short-stem plant with a vigorous, fast-growing Philippine variety, which had in turn originated from an Indonesian strain. "It took some skill," recalls the understated Aquino. The result was a hardy plant with a short stem that held the heavier ears of grain that new fertilizers could produce.

In IRRI's view, "IR8 was to tropical rice what the Model T Ford was to automobiles — a rugged variety that could go almost anywhere." With fertilizer and the new strain, farmers in most of the world doubled or tripled their yields; national breeding programs further enhanced it to conform to local palates and farming conditions. The institute itself developed even better seeds — IR8 was followed by IR36, IR64 and RC20 — improving taste and making crops less dependent

THANKS TO THE QUIET EFFORTS OF IRRI RICE BREEDERS LIKE "RUDY" AQUINO, ASIANS HAVE THEIR FILL OF THEIR FAVORITE GRAIN



Edwin Tuyay

RODOLFO AQUINO

on fertilizers and other chemicals. And through the 1970s and 1980s, one Asian nation after another banished the decades-old fear of running out of rice. In 1974 India became self-sufficient. In 1984 Indonesia could at last feed itself after years of being the world's biggest rice importer. Meanwhile, Thailand has become the globe's top exporter.

Nowadays, 1960s doomsday bestsellers like *Famine '75* seem quaint, and the early '70s rock concert for the starving in Bangladesh remote. Improved varieties now grow on more than 70% of Asia's riceland. In the past three decades, average yields have risen 72% and total production has doubled, easily outstripping the 66% population growth in major rice-consuming countries. Nearly half of the world's modern rice strains contain genetic material developed at IRRI.

Still, the struggle to feed the planet is never truly won. With world population forecast to jump from today's 5.3 billion to 8.3 billion by 2025, Aquino says farmers need to produce 70% more rice — and with less water, labor, pollution, waste and land. With a $39.7 million annual budget and over a hundred experts from Japan to Lebanon, IRRI is working on "Super Rice." By the next millennium, predicts Aquino, the short, plump breed will raise yields by as much as 25% and resist insects with little pesticide. And with little fanfare for its creators in Los Baños. ■