



IN MEMORIAM

Charles M. Rick Jr.
Professor of Vegetable Crops, Emeritus
Davis
1915 — 2002

Charles M. Rick Jr., professor emeritus and the world's foremost authority on the genetics and evolution of the tomato, passed away peacefully in the morning hours of May 5, 2002, thus ending a remarkable six decade association with the Davis campus. Born in Reading, Pennsylvania, Rick grew up working in orchards and enjoying nature study in the Boy Scouts. He took his B.S. degree at Penn State University where he met and married the late Martha Overholts, daughter of a well-known faculty expert on mushrooms. Together they moved to Harvard University. He began his doctoral research under the eminent plant geneticist E.M. East. East's untimely death forced him to switch advisors to the equally eminent plant geneticist Karl Sax. Under Sax's direction, he completed a dissertation on the cytogenetic effects of x-rays in the spiderwort, *Tradescantia*, and was awarded the Ph.D. in 1940. He had earlier established California connections by working with the Burpee seed company in Lompoc and as soon as he finished at Harvard, he joined the faculty of the vegetable crops department where he remained for his entire academic career.

Charley's research centered on two areas: the formal genetics of the domestic tomato and the evolutionary biology of the wild tomato species. Each area contributed to the theory and practice of tomato crop improvement and enhanced yield. He was a hands-on researcher and personally participated in the planting, watering and harvesting of the year's tomato crop.

As a first step in the formal genetics of the many gene mutations he discovered or obtained, he determined their chromosome linkage (association). This was expedited by synthesizing trisomics (one extra chromosome) for each of the twelve chromosome pairs of the tomato genome. By personally marching up and down the tomato fields in the Davis area he identified the occasional spontaneous sterile triploid plants from which by further crossing he isolated the trisomics. Each trisomic was characterized cytologically as well as phenotypically. These trisomics were employed in the initial genetic characterization of numerous of the near 1000 monogenetic stocks ultimately giving rise to the detailed classical genetic map of the domestic tomato. This work provided the foundation for the molecular maps which presently make the tomato one of the best mapped plant genomes.

As co-founder of the Tomato Genetics Cooperative in 1949, Charley helped motivate researchers to communicate their results and exchange materials via publication of the "Report of the Tomato Genetics Cooperative." He also established the Tomato Genetic Stocks Center to preserve and distribute seed of mutants and of wild species collections. In recognition of Charley's pivotal role, the University of California in 1990 renamed this unique and extensive gene bank the "Charles M. Rick Tomato Genetic Resource Center."

Recognizing the potential value of wild germ plasm as a genetic reservoir for the improvement of the domestic crop, Charley undertook 15 expeditions to South America, between 1948 and 1995. In the Andean regions of Peru, Ecuador and Chile and the Galapagos Islands, he collected 700 specimens among the native populations of all the *Lycopersicon* species and the related *Solanum* species. (Many populations are now extinct in their native habitats.) These collections resulted in several taxonomic revisions of the genus *Lycopersicon*, stemming from the revealed genetic diversity, variation in mating systems and crossing

relations among the species. Based upon the genetic variability extant in the wild germplasm, Rick demonstrated the feasibility improving the domestic tomato by transferring genes for fruit quality and nutritional value from green- fruited wild species into the domestic tomato. From the Galapagos species, *L. cheesmanii*, which he was the first to successfully grow, he was able to introgress a gene for jointless pedice into the domestic tomato, thereby facilitating mechanical harvesting.

Combining a wry sense of humor with an encyclopedic knowledge of the systematics, genetics and evolutionary biology of the tomato, Charley was a much sought after lecturer to lay and scientific audiences. His lectures were both entertaining and informative. In one story, which titillated all audiences, he described the discovery of the germination of the native Galapagos tomato seeds, via passage through the endemic tortoise's digestive tract. Later more conventional chemical treatments were devised for seed germination. He lectured widely in the U.S. and Latin America in English or Spanish, being fluent in the latter.

From his extensive, pioneering research, he authored over 160 publications in refereed journals. Charley received numerous, much deserved honors and awards including election to the National Academy of Sciences, the Alexander von Humboldt Foundation award and the Filippo Maseri Florio World Prize for Distinguished Research in Agriculture. He guided the research of more than forty- five predoctoral and postdoctoral students, among whom two subsequently were elected to the National Academy of Sciences.

He is survived by his daughter and son, three grandchildren and one great grandchild.

The University and California agriculture has lost the world's preeminent tomato geneticist and plant biologist par excellence whose scholarship enhanced its international renown. Additionally, the Davis campus has lost a recognizable campus personality: bearded Charley Rick riding his bicycle to the office or the field, often shirtless in the heat of summer, but invariably crowned with his ever- present army fatigue hat. He will be sorely missed.

M. M. Green
Roger Chetelat
John Yoder