

# FLIGHTS *of* FANCY

*Retired mathematics professor Gerhard Ringel gives his world-class butterfly collection to UCSC*

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**T**HE TREASURES inside each wooden case are dazzling: iridescent green, shimmering turquoise, velvety orange, and sprays of teeny pink speckles compete for the eye.

Case after case is filled with butterflies and moths of every shape and size from all over the world. Each specimen is perfect, mounted with precision by a world-class collector.

Gerhard Ringel has collected butterflies for most of his 86 years. The cases that still fill cabinets of his Santa Cruz home are the leftovers, duplicates of specimens he donated to the UCSC Museum of Natural History Collections. It was the logical home for a museum-quality collection that

could easily have landed in New York or Washington, D.C.

“He prepared his collection with German precision, and because he reared so many of the butterflies from the egg or caterpillar stage, they are perfect—no scales are lost, there are no bird bites,” says Tonya Haff, curator of the UCSC Museum of Natural History Collections, housed in the Environmental Studies Department.

The collection’s value to scientists is enhanced by the data Ringel carefully recorded regarding where and when specimens were gathered. “It’s an amazing collection,” sighs Haff, who still marvels at the treasures inside each case. In fact, the museum had to order handcrafted cabinets to accommodate Ringel’s 5,000-specimen collection.

**E**IGHTY YEARS AGO, as a boy in Czechoslovakia, Ringel loved butterflies and mathematics. Unfortunately, his teachers didn’t share his passions, and World War II interrupted his studies. He was taken prisoner just as the war was ending and spent four-and-a-half years in a Russian POW camp. Upon his release in 1949, he returned to the University of Bonn, where he earned a doctorate in mathematics and joined the faculty. His research was solitary, and he longed for a colleague with whom to exchange ideas.

Twice he received invitations to work in the United States. The first time, he declined. “I spoke Czech, German, and Russian, but not English,” he explains. A year later, when an invitation came from Ted Youngs, a professor of mathematics at UC Santa Cruz, Ringel accepted, eager to learn English to facilitate collaboration.

Ringel is credited with advancing the famous “map

problem,” which vexed the world’s greatest mathematicians for decades: the development of a mathematical theorem to prove that only four colors are needed to create a map with no two adjacent countries the same color. A mathematical brain teaser of monumental proportions, the four-color theorem was the first to be proved using a computer. Ringel brought the same persistence and perfectionism to his passion for butterflies.

Every chance they got, Ringel and his wife, Isolde, traveled the world in pursuit of butterflies—South America, Bali, Jamaica, Africa, New Zealand. Their architect literally designed the Ringel home around built-in butterfly-storage cabinets. And although Ringel caught many specimens in nets, he preferred to hand-raise them from eggs

in his garage, where perfection was guaranteed.

These days, well into his retirement, Ringel has slowed his pace, but he still participates in a weekly chess club. “Timed chess,” interjects Haff. And yes, he concedes humbly, his blue eyes twinkling, he’s better than most of his opponents.

Ringel says butterflies brought joy and balance to his life, a gift of nature that complemented his intellectual interests. Now his gift will benefit students, researchers, and illustrators for generations to come.

