

Can We Guide Honey Bees?

*Attract them for pollination?
Repel them from insecticides?*

Developing methods to protect beneficial insects and help them help man is an important part of the research entomologist's job. A search for materials that attract or repel honey bees is a case in point.

As part of continuing studies of insect repellents and attractants, ARS and Arizona scientists have tested 195 formulations for the effect their vapors have on honey bees. They found four formulations that rate weak to moderate as attractants and 18 that rate moderate to strong as repellents.

Although the screening program is providing fundamental information about honey bee behavior, the researchers are looking toward the day when formulas might be used to at-

tract honey bees for pollination purposes. They also say that a repellent added to an insecticide might someday keep bees away from areas in which toxic materials have been used. Repellent materials might even be used to keep bees away from the family picnic.

The experiments were conducted by ARS entomologist A. W. Woodrow and chemist Nathan Green, both of ARS, statistician Henry Tucker of The University of Arizona, and agronomists M. H. Schonhorst and K. C. Hamilton of the Arizona Agricultural Experiment Station.

The researchers noted the reactions of bees when vapors of various natural and synthetic compounds were wafted over them. The tests were conducted in a specially constructed modified olfactometer, an instrument used to determine whether insects are affected by an odor.

If bees moved toward the vapors, the material was rated as an attractant; if they moved away from the vapors, it was rated as a repellent.

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gain, egg laying or milk production. Computer arithmetic is helping to make many of the decisions of the "big operators" in American agriculture.

Even the farm watering pond now has a chemical spread onto its surface to inhibit evaporation. On Southwestern cattle ranches, where water is scarce and evaporation can total as much as 12 feet of water depth annually, that is important.

More and more, too, are products devised, selected and produced for specific market needs. The cantaloup's planting date in the Yuma Valley of Arizona is carefully calculated to get fresh fruit on the eastern market early, when prices are best. The same with bell peppers, lettuce, tomatoes, cucumbers and other produce. New cottons are grown to meet specific fabric needs.

The beef cow's figure is being remoulded, not with an eye for beauty or sturdiness, but to get the carcass size most desired by the supermarket butcher and his customer. Hens are selected to lay eggs of a size and color the customer prefers. The market support for whole milk products, and away from butter, has made the Holstein the nation's dominant breed of dairy cattle.

A marvellous new world of ingenious machines and chemicals, vast new

knowledge about electronics, chemistry, cytogenetics, physiology and pathology of both plants and animals, and about packaging, shipping and marketing, have changed the face of U. S. agriculture.

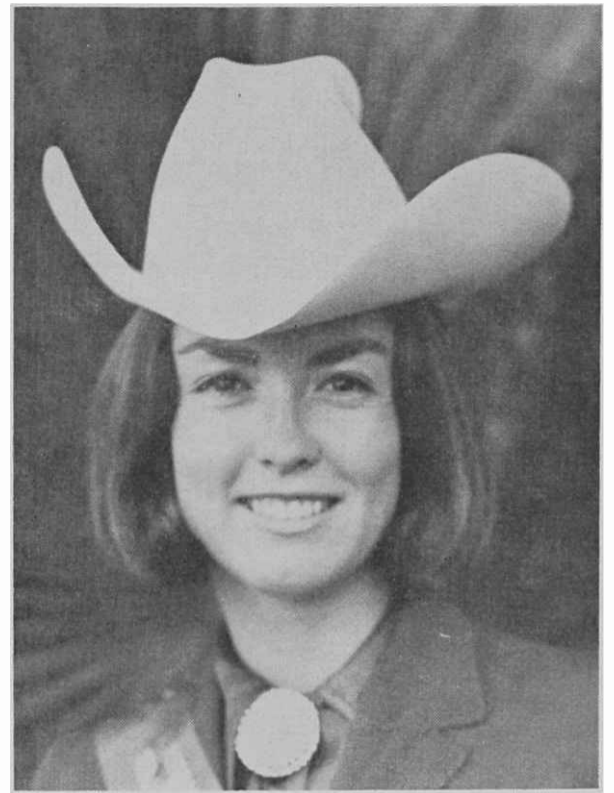
Grandpa Wouldn't Know It

The farmer of the 1920's would scarcely recognize the machinery on a farm today. The horse-drawn implements and hand tools are mostly gone. The planting, tilling and harvesting of crops, and the feeding and care of livestock, are machine operations, some of them automatic. In fact, the American farmer today uses more petroleum products than does any other industry, and his use of electric power has made private utilities and the Rural Electric Cooperatives scramble to meet his needs.

America's commercial farm today is no longer a small operation, a family operation with small investment, heavy on sentiment and weak on income. Today it is a business, though often a family business, but a business with a six-figure investment and thousands of dollars expended each year for seeds, fertilizers, fuel and machinery upkeep.

Whether America can convey this new learning and efficiency to other nations — through the Peace Corps, through the Agency for International Development (AID), through the teams of agricultural extension workers and research scientists from American colleges now working in scores of lands on four or five continents — this may be more important to the future peace, welfare and political

U of A RODEO QUEEN



sanity of the world than any military or diplomatic effort.

The 1965 University of Arizona rodeo queen is Kathleen Patricia Keogh, as pretty and authentic a rodeo queen as ever was. Kathy's grandfather homesteaded in western North Dakota at the turn of the century, and was a neighbor and associate of Teddy Roosevelt when the former president had the Elkhorn and Maltese Cross ranches out near Medora, in western North Dakota.

Kathy's father, Brooks J. Keogh, is president of the American National Cattlemen's Association, and past president of the North Dakota Stockmen's Association, oldest incorporated association in North Dakota — Roosevelt was one of the 10 incorporators, as was his ranch foreman, John Goodall, sheriff in that area. Also one of the 10 was Frank Keogh, Kathy's grandfather.

The Keogh ranch includes 20,000 deeded acres at Keene, on the edge of the Badlands. The ranch runs a thousand Herefords and also raises quarter horses. Like most ranch-raised girls, Kathy brought her saddle horse to college with her.

Kathy has been North Dakota Quarter Horse Queen, North Dakota Rodeo Princess, and was all-around cowgirl at the North Dakota High School rodeo in 1963. She attended North Dakota University at Fargo as a freshman, transferred to College of St. Catherine at St. Paul for her sophomore year, then came to the University of Arizona last fall.

The photo above was taken by Mike Prime, agricultural journalism student.