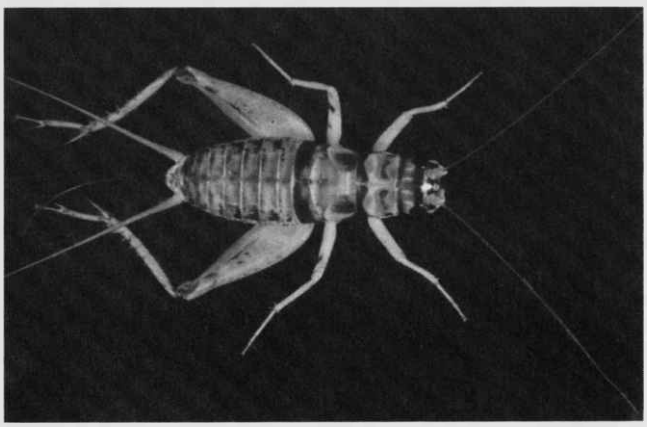
Knowledge in the Making



Indian house cricket, unwelcome lodger in many homes.

Who Are These Crickets And What Do They Want?

Dr. Robert L. Smith gets hundreds of calls every year about crickets in Tucson area homes. He is a specialist in urban entomology for the UA Cooperative Extension Service. Some people find household crickets unsightly, but the crickets' noise, especially nighttime chirping, elicits the most complaints. The human hosts also worry about their guests' eating habits, since crickets elsewhere are known to nibble on paper and fabrics. However, no verified reports of such damage have come from the Tucson area, says Smith. He tells people the best way to control crickets indoors is to seal cracks and crevices, keep the area clean, and put out non-toxic sticky traps of the type marketed for catching roaches.

To help provide more specific answers to questions Smith gets about crickets, entomology graduate student Nathan M. Schiff is offering various textiles and other materials to hungry Tucson crickets to see what they will eat. Another graduate student, Patricia J. Figuli, is finding out what types of crickets invade Tucson homes. Unsystematic reports have suggested that an increasing proportion of them are Indian house crickets rather than common house or field crickets. Figuli distributed sticky traps to 50 homes throughout the area, and will identify what is caught.

Hard Times for Cochise Farmers Lead to Search for Cost Cuts

Forecasters this winter were estimating that up to 30 percent of the irrigated farm acreage in Cochise County in 1981 would go out of production in 1982. About 40 of the county's farmers feeling the pinch of low market prices and high production costs met in March with County Extension Agent Larry Sullivan and representatives of other farm agencies and lending agencies. That meeting in Willcox led to the formation of the Integrated Production Management Program. In this program, a committee of consultants will work closely with eight selected farmers for the next two or three growing seasons looking for ways to lower production costs or to increase the ratio of yields to costs. The consultants are eight UA Extension specialists in agronomy, engineering, economics, soils and pest control, coordinated by agent Sullivan. The selected farms are in four different agricultural areas of the county, range in size from about 200 to 2,000 acres, and grow a total of 14 different crops. The types of information to be considered include tests of soil, water and plant tissue, and measurements of the efficiency of all irrigation pumps. "This will be an intensive, time-consuming effort," says Sullivan. "We expect that it will not only help these eight growers, but that we will be able to use the basic data we get to help all of the farmers in the county."

Dairy Farms' Problem: When It's Hot, Breeding's Not

Heat stress in cows causes trouble for Arizona dairymen. One part of the problem is that cows due for breeding often fail to begin a successful pregnancy during the summer. Pregnancy rates are low, and deaths of embryos in the first weeks after conception are an even bigger factor. The net result: Of cows inseminated in summer, less than 20 percent bear calves. Insemination in other seasons succeeds at two to three times that rate. The lower calving rate nine months later also means fewer cows are beginning to give

milk at that time, making steady production levels difficult for dairies. UA veterinarian and physiologist Dr. D. Ed Monty has begun experiments to identify how heat stress kills young calf embryos. To pinpoint the problem, he is looking at the heat's effect on secretions of the uterus that nourish the embryo. He has found hormonal changes in heat-stressed cows that may be linked with uterine secretions. Monty works with culled cows at the Arizona Dairy in Higley, which milks about 3,600 cows three times a day. The dairy's veterinarian, Dr. Thomas J. Fuhrman, is cooperating in the research. Monty came to the University of Arizona in 1981 after 12 years on the faculty of Arizona State University.

Cotton Update: Short Season from the Front End

The spring 1980 issue of this magazine described testing of a shortened cotton-growing season as a way to cut pest-control and irrigation costs and to ease double-cropping with wheat or barley. Test fields in 1981 indicated for the third year in a row that shortening the season by cutting off irrigation early was not profitable. Cotton growers Paul Prechel of Coolidge, Bob Layton of Gilbert and Bill Wade of Goodyear participated in 1981 testing by halting irrigation in middle to late August in one field each and continuing irrigation until early to middle September in comparable fields. On average, the higher yields of longer-season cotton more than outweighed the cost savings of a shorter season. As in the 1979 and 1980 tests, 1981 weather favored a long growing season. According to UA agricultural engineer Dr. M. Dale Cannon, head of the short-season study project, "If we'd been trying to prove the early cut-off date was practical, we picked the three worst falls in my memory." Such tests will be cut back this year in favor of tests shortening the season from the other end. Cotton is being planted as a double-crop following the harvest of early-maturing barley. Also, the short-season group will be looking at test plantings of an experimental, early maturing cotton developed by UA cotton breeder Dr. Warner D. Fisher.

Squash Blossom Nutrients And Other Navajo Specialties

Menu planners at hospitals and other institutions on the Navajo Reservation have, in the past, lacked adequate nutritional information about many traditional Navajo foods. However, some patients or clients, especially elders, do not eat well when given an unfamiliar diet. For the Navajo Tribe, Dr. Charles W. Weber of the UA Department of Nutrition and Food Science is analyzing about 80 traditional Navajo foods. The tribe's Food and Nutrition Service, headed by Katherine D. Arviso, helped collect and prepare the foods. Weber and co-workers on campus are measuring levels of major nutrients and six minerals.

A few of the ingredients in Navajo foods are unusual, such as ashes from juniper or tumbleweed mixed into the dough for some breads. Besides flavoring the bread, the ashes add extra minerals to the diet. Wolfberries, bitter if eaten plain, are blended with a white clay that makes them taste sweet. The analyzed foods include wild spinach, squash blossoms, and mutton and organ meats from sheep. The degree to which Navajos still use traditional foods varies greatly in their population. Nutrient information on the old foods will help allow diets in institutional settings to reflect the diversity of the reservation as a whole.

Weber has also studied nutritional values of Papago Indian foods. In some cases, the traditional foods such as tepary beans had nutritional advantages over the foods that have replaced them in the diet.

Terri Johnsen runs lab tests on Navajo foods.