

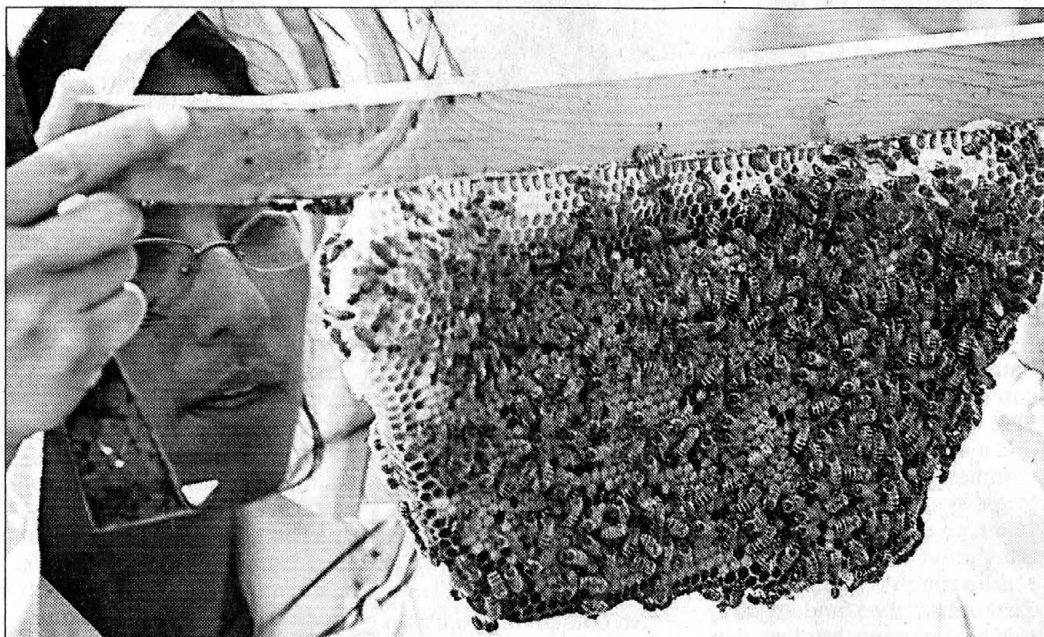
Bees gone wild! Disorder puts industry at risk

URBAN BEEKEEPER Julia Roll beckons me forward as she grabs a frame of honey with her bare hands. She is wearing screened headgear, but my face is bare and bees fly around me in a swarm as I approach the open hive. "Look," she points; "There's the queen!"

Roll has a quick smile when talking about her bees, but becomes serious when discussing the larger issues. Over the past years, bees have suffered a serious decline. In 2007, the USDA calculated that 25 percent of the beehives across the United States lost up to 45 percent of their bees. This year, the losses appear to be worse. Scientists are calling this phenomenon Colony Collapse Disorder, and blame a combination of mites, beetles, viruses, chemicals and stress as major causes.

Roll is among a new breed of beekeepers who are experimenting with radical ideas to confront these issues. Tending her hives at the Sol center for sustainable living, she gives me a short lesson in modern beekeeping. Most visibly, Roll's lack of gloves is a conscious effort not to upset the hive. "I'd rather not kill any bees by accident," she explains. She also avoids the pesticides that protect bees from parasites, but which also leave potentially toxic residue in the wax and honey.

Additionally, her hives have no artificial foundation — the stamped honeycomb template beekeepers use to regulate size. Larger combs equal more honey and more money, but Roll believes this can stress the bees and make them susceptible to disease. Finally, her hives are shaped in a half-hexagon, the natural shape bees use to make their combs. "They are called top bar hives," she explained. First developed for the third world as a low-cost alternative, they have become a symbol among a growing group of independent thinkers who are challenging traditional beekeeping methods. Using such techniques, small-scale



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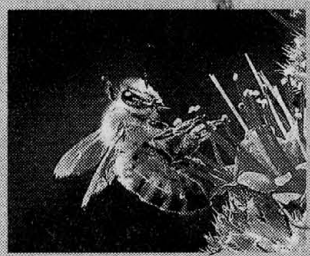
URBAN BEEKEEPER Julia Roll inspects one of her Oakland hives of European honeybees.



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beekeepers are less apt to experience Colony Collapse.

Looking for a wider perspective, I talked to Scott Hoffman Black, executive director of the Xerces Society, whose mission is to protect pollinating insects. Black explained that European honeybees — the species used by large- and small-scale beekeepers alike — were first brought to this continent by settlers at Jamestown for honey production. It wasn't until the dawn of the 20th century, however, as field sizes grew with mechanized farming, that honeybees were recognized as important pollinators. Today, commercial beekeepers commonly keep tens of thousands of hives together, trucking them around the country to pollinate crops such as apples, oranges, peaches, berries, almonds and melons (the biggest crops — wheat, corn, and rice — are pollinated by wind,



TASTING

To properly taste honey, focus on the first several flavors to reach the tongue before the sugar masks them with its sweetness, rolling the honey around your mouth. I find that milk does a better job of cleaning the palate than water between tastes.

and thus not directly affected by bees).

Many of these specialty crops are grown in vast monocultures of hundreds of acres, and are entirely dependant on honeybees for pollination. Without those bees, the fruit will be small and misshapen, or no fruit will grow at all. Bees pollinate more than 150 crop species, totaling some 30 percent of our diet, and supporting a \$200 billion industry.

But the wild bees can help, if given the chance. "The key to effective pollination by wild bees," Black says, "is to keep patches of native habitat between the crop fields." Blueberries, for example,

have been thought to be entirely dependant on honeybee pollination. But when farmers experiment with smaller blueberry fields of 20-40 acres mixed with native patches, they are finding that the native bees do an excellent pollination job on their own. These facts lead beekeeper Roll to pose the question, "Is there really a shortage of honeybees, or simply an abundance of monocultures?"

Roll's bees, who collect pollen and nectar from a variety of flowers, produce superior honey. I'll never forget the wild honey I watched being collected from the trunk of a tree in the Cameroon rain forest. I recall its complexity being unlike anything I have ever tasted; each cell of the honeycomb a different hue from the numerous kinds of nectar and pollen the bees had collected.

And it was the taste of Roll's Oakland honey that was the most surprising. A group of us sat in a circle, dipping spoons into a small bowl of honey harvested from Roll's hives. I looked up and saw wide smiles all around, as we tasted the complex layers of flavor reminiscent of that honey of my memory from Cameroon.

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