UPDATE ON KILLER BEES

A Parade Magazine article (Nov. 12) reminds us that the Africanized honeybee continues to expand into the United States. The bees initially were called the killer bee because this variety of honeybee swarms its enemies, resulting in multiple stings and occasional death of its victims.

All honeybees are exotic insects in the Americas. English settlers brought the European honeybee to North and South America as early as 1620 to provide honey and to pollinate plants. This relatively docile, hard-working bee has been crucial to successful American farm and orchard production.

The native honeybee in Africa is a wild cousin of the European honeybee. In the African savannas and rain forests, the Africanized honeybee lives in the wild. In fact, African honey-gatherers periodically rob bees’ nests using fire and smoke. So brutal is this robbing process that the African bee has become more and more aggressive.

At the insistence of Brazil’s Agriculture Administration, beekeeper Warrick Kerr brought Africanized honeybees to Sao Paulo to determine whether the variety might offer some improvements over the European honeybee. A helper, who could not read warning signs in Portuguese attached to each hive, allowed the queens to escape in 1957.

Quickly dubbed killer bees, colonies began to spread in all directions, moving 200 to 300 miles (322 to 483 km.) per year. By 1980, they had nearly reached the Isthmus of Panama. In 1988, scientists devised a line of traps along the Gulf and Pacific lowlands in southern New Mexico. These traps were baited with a chemical attractant called pheromone, which resembles the natural sexual attractant of bees.

Such artificial barriers to exotic species’ expansion are universally unsuccessful in the long run. This one failed to even slow the advance of Africanized honeybee colonies, as the expansion front moved toward the U.S.-Mexican border.

Twelve years later, the Africanized bees have infested all of Mexico, except the high mountains, and are found in all four U.S. border states, plus Nevada. According to the U.S. Department of Agriculture’s latest data, the bees have been found in the Rio Grande valley of Texas, southern New Mexico and Arizona, the Imperial Valley of California, and near Las Vegas, Nevada.

A Texas A&M University website (agnews.tamu.edu/bees) indicates that 128 Texas counties are presently quarantined. This means that local domestic European bees, usually transported to southern Texas to pollinate fruit and vegetable crops, cannot be moved this year.

The Africanized honeybee is a very efficient nectar gatherer, but a very poor pollinator. This bee will even steal honey from the domesticated European bee colonies and take over the hive. Occasionally, the more aggressive and energetic Africanized bee will mate with European honeybee queens, thus bringing its aggressive gene into the European hives.

Potential agricultural losses attributed to the Africanized honeybees’ ineffective pollination of farm and orchard crops may be astronomical for U.S. farmers. Honey production will also likely decline because the Africanized bee does not store honey for the winter. This is because its traits evolved in the tropics where there is no need to store honey for the winter. Additionally, multiple stings and occasional death of its victims.

Although a quickly fleeing individual may outdistance a swarm, confined animals and young children may not be so lucky. Field workers are particularly susceptible to contact with bees. Although only seven people have died in the United States from stings by Africanized honeybees since 1990, the situation will worsen as the bees further diffuse across the U.S. South in coming years.

Scientists expect the Africanized honeybee to be limited in its northern expansion by cold temperatures. But any limit is conjecture at this point, based on the fact that this bee has neither advanced up the Andes much above 3,000 feet (914 m.) nor deeply into the southern Argentine Pampas and Patagonia.

The Africanized honeybee joins the many other unwanted and troublesome exotic plants, animals and viruses that have entered the United States. A short list of other offensive and costly exotics includes kudzu, the Zebra mussel, carp, West Nile virus, Mediterranean fruit fly and European starling.

The wonderful little European honeybee is a fine example of a beneficial exotic insect. But the final story of its untamed cousin, the Africanized honeybee, is yet to be written.

And that is Geography in the News. December 1, 2000. #548.

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