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The Bee

A Natural History



The challenges faced by bees today — from habitat loss to pesticides and deadly diseases — threaten not only the bees themselves but potentially all of human life.

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Before flowering plants evolved, there were no bees. And then, about 100 million years ago, plants began to develop colorful appearances and sweetly scented reproductive organs—while at the same time some wasps abandoned their carnivorous hunting lifestyle and took to a gentler way of life. Bees evolved from these wasp ancestors, feeding on pollen provided by the plants for protein in exchange for their services as pollinators.

Bees are remarkable for their co-evolution with flowers, displaying an astonishing range of adaptations—and they are no less remarkable for their social lives. Some bees are solitary, but honey bees live in large, well-organized family groups, and exhibit social behaviors seen nowhere else in the animal kingdom. Honey bees also make several products that are of direct benefit to us — the honey, the wax, and the resins that humans have valued for millennia.

Today, bees are found across the world, and the twenty thousand or so species display an amazing variety of behaviors. Some species live underground, others high in trees, and some even build their nests within the walls of our homes. And of course humans have taken to beekeeping on a massive scale. Bees are now so intertwined with humanity that our interest in them is no longer a simple fascination, but a vital necessity. Quite simply, apart from the honey and other products they

supply, we need bees to pollinate the majority of fruit and vegetables crops that we rely upon for our own food.

Honey Hunting & Beekeeping

Early humans relied on hunting wild animals and gathering vegetables and fruits, and in the course of their hunter-gatherer lifestyle they would have come across honey in bees' nests high in the trees. Artwork dating back as long ago as thirteen thousand years depicts amazing feats, with men scaling seemingly impossibly tall trees, risking falls and stings, to pass the sweet comb down to helpers below. At first, this bravery was the only way of harvesting honey, and it was several thousand years before the refined practice of beekeeping was developed.

The practice of beekeeping with honey was introduced to the New World by Europeans in the seventeenth century as a means of sustainable food production. Some honey bee colonies escaped from their beekeepers' management, and flew off into the woods in this unexplored new land. Native Americans named these feral honey bees "white man flies," as their arrival announced the advance of settlers, and gave warning of the inevitable conflict over land that lay ahead.

What Makes Bees Different?

Bees are unique in many ways. Bees focus their diet on pollen and nectar, and play a vital role in the pollination of many species of flowering plants. Furthermore, from a human perspective, what really makes bees unique is their significant agricultural, economic, and scientific importance.

Bees are amazingly effective pollinators, in part because of their sheer numbers. Honey bee colonies have tens of thousands of

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Photo by Holly Elmore



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individuals – perhaps up to eighty thousand – per colony. It only takes one visit, for example, one almond flower, and then a second almond flower, to make an almond. And there are over a million honey bee hives in the handful of California counties that produce almonds for the entire United States and regions beyond. Further multiply these numbers by the more than 130 crops that bees pollinate worldwide, and then factor in all the countries around the world growing fruits and vegetables, and you will begin to get a sense of the vital importance of bees to agriculture.

In the U.S. honey bees are estimated to contribute over \$15 billion annually to the economy. However, the honey bee population has been declining drastically since the 1980s due to the onset of new diseases and pests, pesticides, and habitat loss, and this decline has coincided with an increase in agricultural demand. The result has been a rise in the price of certain foods, especially in the case of almonds, which up to now have relied entirely on honey bees for pollination.

Beekkeeping

Beekkeeping is an amazing experience. The connection between humans and honey bees is deeply rooted in our history together, spanning tens of thousands of years. Honey bees are very much like people—they go out during the day, come home at night, store food, and interact with family.

One obvious way of helping honey bees is to become a beekeeper. If you are not keen on becoming a beekeeper yourself, you could consider allowing bee hives to be placed on your land. Other ways you can help is to create a home for bees. Window boxes can be a substitute for lost habitats. Plants with single or open flowers are a good choice. Traditional cottage flowers and native plants are often highly attractive and garden-worthy. Lists of plants beneficial to bees are widely available. Reliable sources include the Royal Horticultural Society in the UK, the Xerces Society in the United States, and most university education extension sites, beekkeeping groups, and local garden centers and nurseries. •