

No Bees, No Hawaii

Back when I was in early grade school, I remember honeybees were plentiful. What was also plentiful were the delicious lychee fruit from the tree at my grandfather's house. Now, several years later, I climbed the same tree during summer to find no lychee. I asked myself why is there no fruit? What I found out was that the honeybee numbers were rapidly decreasing. With very few bees, the flowers of the lychee tree were not pollinated and did not bear fruit. According to the group, Nutritional Hawaii, "By 2010 the bee population in Hawaii had dropped to approximately 50% of its 2007 number. Today it's roughly 20% of that." It is this decrease in honeybee population that will create negative impacts on Hawaii's precious ecosystems in the future.

There are four main reasons responsible for this rapid decline in the honeybee population. They are the Varroa mite, the Nosema parasite, the Small Hive Beetle and Colony Collapse Disorder (CCD). The Varroa mite found in Hawaii in 2007, weakens the bees' immune system by sucking its blood on the back of its neck. This greatly affects its ability to do work for the hive. Secondly, the Nosema parasite interferes with the digestive tract of the bees causing it to starve. Third, the Small Hive Beetle destroys the hive of the honeybee by feeding on its stored honey and beeswax. Finally, CCD is mainly caused by global warming and habitat destruction. An example of global warming would be the melting of the beeswax in the hive due to the rising temperatures.

Habitat destruction has many forms. Land clearing and pesticides are the biggest factors. Of course, all of this is the work of man.

In 50 years, if we still do not do anything to help the honeybee population, the vital insect may become extinct. If this happens, it will create a domino effect throughout Hawaii. Our amazing landscape that we have been proud to call our home, will slowly fade away, due to further losses of native plants and animals. Other consequences will be our economy. A report by the Ecology Center says that, "In the US, bees pollinate over \$15 billion worth of crops. This includes our favorites like apples, berries, cantaloupes, cucumbers, alfalfa, and almonds." Also, based on thinkprocess.org, "Yellow-faced bees are important pollinators of Hawaiian plants, according to the Xerces Society, a group involved in petitions calling for bee protection. The group says the decline of these bees might lead to the loss of native plants, too." Without honeybees, Hawaii will be completely relying on the importation of all of our food. In addition, the 150 million dollar honeybee industry will also disappear. Hawaii laws prohibit people from bringing in more bees from outside of the state which further hinders the population of honeybees. Fortunately, I believe we have some time to change this from happening if we act now.

The survival of the honeybee is heavily dependent on the species that threatened it in the first place: humans. It is up to mankind to start helping the insect that helped us for so long. The first step in any action plan is public education. Many people are not even aware that the honeybee is in danger and what impact it has on Hawaii's ecosystems. Some examples of education are: television commercials, radio, brochures

by mail, and of course, contests like this one. By educating the public, a person might think twice about using that pesticide on their rose garden or calling people to take care of a hive too close to their house, and so on. At the very least, it should spark some concern for the honeybee.

All of this education will cost money, which leads to the second step. Writing to our state representatives and senators for help with funding is essential. Funding may also allow the state to hire an entomologist, as well as, beekeepers. Having experts on honeybees can greatly increase the chances of its survival.

Secondly, these officials can help modify the law that prohibits people from importing honeybees. This law hoped to prevent new diseases and/or parasites from coming into Hawaii. However, as we have seen with the Varroa mite and others, this law is ineffective. As long as the Department of Agriculture inspects imported bees for diseases, adding to the depleted population can only help.

The final step would be to carry out what we have learned from our education. This will probably lead to more research and, of course, more funding. However, at the same time, efforts to help the honeybees should be encouraging. As time goes on, it is with hope that the number of supporters will grow, as well as, the population of the honeybees. It will take a huge effort from all of us to save the honeybees.

Clarence T.C. Ching was an ambitious person. He liked to pursue his dreams and cared deeply about Hawaii. He would want us to save an important species like the honeybee which are always hard at work pollinating our native flowers and plants.

Mr.Ching wanted Hawaii to be a beautiful place, and I believe that his legacy is being protected by the small and mighty honeybee.

Hawaii is a very special place. When people think of Hawaii, they envision islands with lush greenery, filled with beautiful flowers, and delicious tropical fruits and vegetables. Many of our precious, endemic species, such as the i'iwi bird, rely on these plants for its survival. Without the help of the honeybee, many of the plants and animals which make Hawaii unique will be gone forever. The decline in honeybees is not only a Hawaii problem, but also a worldwide one. However, Hawaii is isolated, making our home all the more fragile. I hope that this paper will encourage its readers to do their part to keep our Hawaii extraordinary. It is with this hope and effort that will someday allow all of our keiki to enjoy some ono lychee!