

“Queen Rearing in Sardinia. A Visual Ethnography.” A Series of Drawings.

The following series of drawings regarding queen rearing in Sardinia was created as a provocative attempt to visually narrate my ethnography, without using written words.¹ It is based on ethnographic fieldwork on beekeeping in Sardinia² and explores the intricate human and non-human entanglements that shape bees, humans, plants, and ultimately, the landscape.

In my interpretation of beekeeping in Sardinia, I contend that humans and bees are companion species³ that mutually constitute each other in “flesh and blood” – or hemolymph. However, the relationship between humans and bees is not a relationship between two species;⁴ rather, it involves several species that play a fundamental role in co-creating the environment and mutually shaping their bodies. The fluid exchange between bees and humans in this practice plays a fundamental role in co-shaping each other’s bodies and the microbiome of the environment.⁵ The drawings presented here are informed in

- 1 Greca N. Meloni: Queen Rearing in Sardinia. A Visual Ethnography of Beekeeping. In: *Antropologia Pubblica*, in publication, 2025.
- 2 Greca N. Meloni: Making honey - Making identity. Policies and Beekeeping in Sardinia. Vienna. University of Vienna, 2023, <https://theses.univie.ac.at/detail/65796> (access: 09.08.2025)
- 3 On the concept of companion species, see: Donna Haraway: *When species meet*. Minneapolis, 2008.
- 4 Siobhan Maderson, Emily Elsner-Adams: *Two Species Ethnography*. In: Annalisa Colombino, Heide K. Bruckner, *Methods in Human-Animal Studies*, London, 2023.
- 5 Recent studies proved a reciprocal relationship between the microbiome of bees’ colonies and the environment. See, for instance: Madhavi L. Kakumanu, Alison M. Reeves, Troy D. Anderson, et al.: Honey Bee Gut Microbiome Is Altered by In-Hive Pesticide Exposures. In: *Frontiers in Microbiology*, 7, 2016.

multispecies theories⁶ and are designed to show the reader this intricate relationship. By focusing on a specific moment in the beekeeper's year, I will illustrate the different responses and interrelationships through which humans and non-humans constantly negotiate their presence and agency.

For the purposes of this format, I have added captions to help the reader visualise the human and non-human entanglements in Sardinian beekeeping.

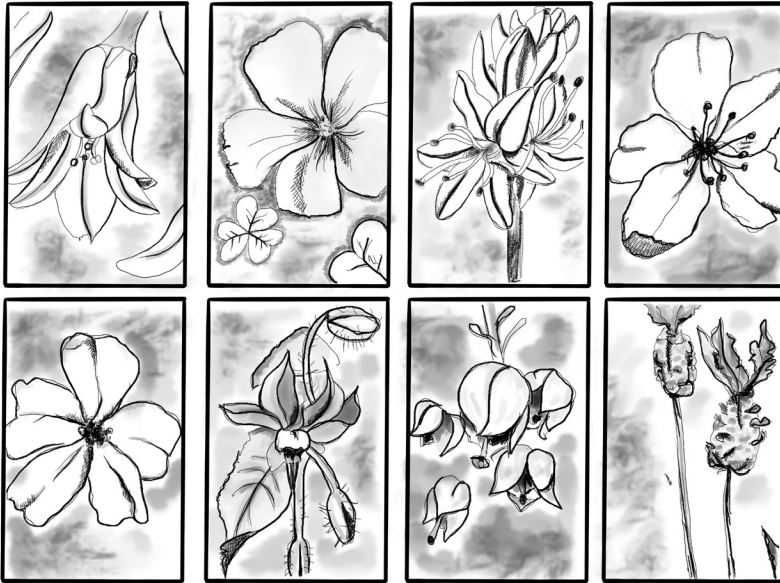
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6 Eben S. Kirksey, Stefan Helmreich: The Emergence of Multispecies Ethnography. In: *Cultural Anthropology*, 25(4), 2010, p. 545–576; see also: Anna Lowenhaupt Tsing, Jennifer Deger, Alder Keleman Saxena, et al.: *Field guide to the patchy Anthropocene: the new nature*. Stanford, California, 2024.



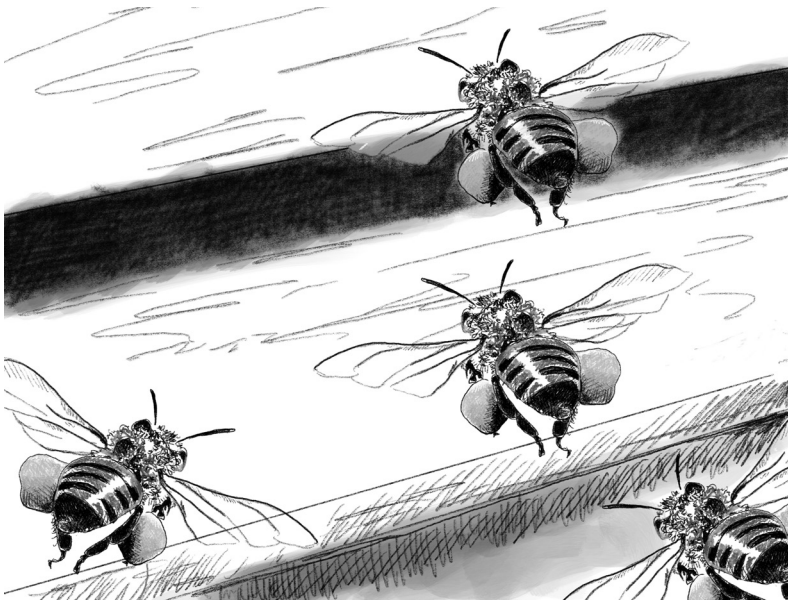
Starting in January, beekeepers in Sardinia begin to carefully observe the development of spring, trying to estimate whether the soil has received enough water to support the upcoming blooming season.



Beekeepers stop by specific plant species to observe the presence of bees on the flowers. The earliest flowers – *allu de carroga* (*Allium triquetrum* L.), *ollu de axedu* (*Oxalis cernua* Thunb.), *succiameli* (*Borago officinalis* L.), and *mendua aresti* (*Prunus amygdalus*) – provide vital nourishment for bee colonies after winter. Other species – *cardilioni* (*Asphodelus microcarpus*), *murdegu* (mostly *Cistus monspeliensis*), *tuvara* (*Erica arborea* L.), and *alchimissa* (*Lavandula stoechas*) – may yield distinctive Sardinian honey.



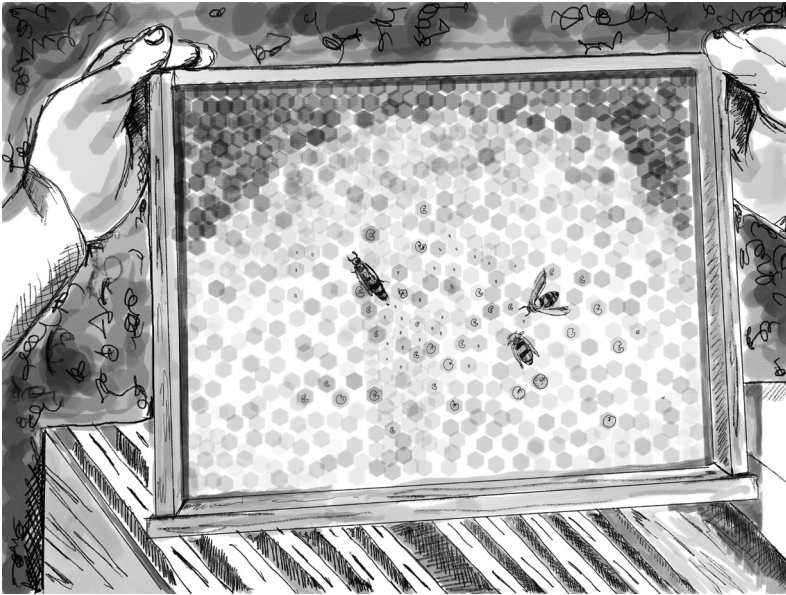
Effective foraging activity by bees in the field must be consistent with the flight activity beekeepers observe at the hive entrance.



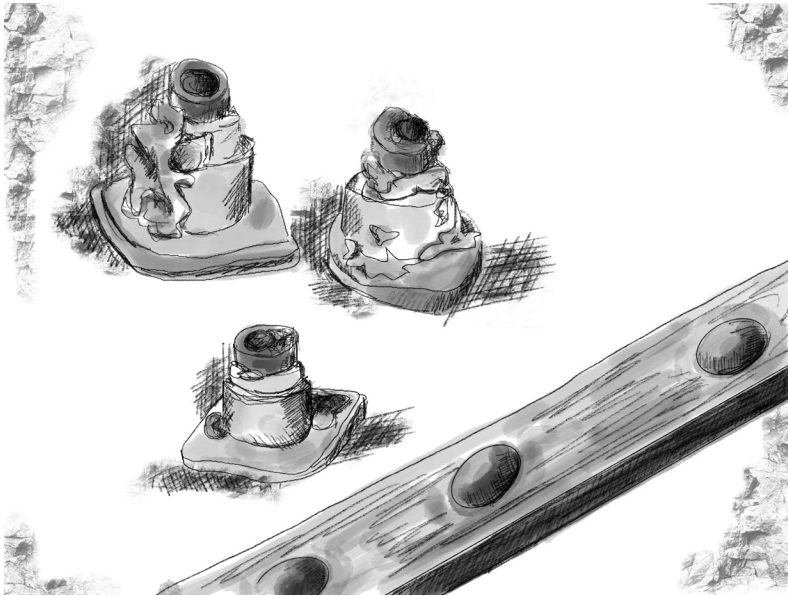
Foragers with pollen baskets filled with pollen indicate the presence of a healthy family inside the colony and a queen that is laying eggs – the future new members of the colony.



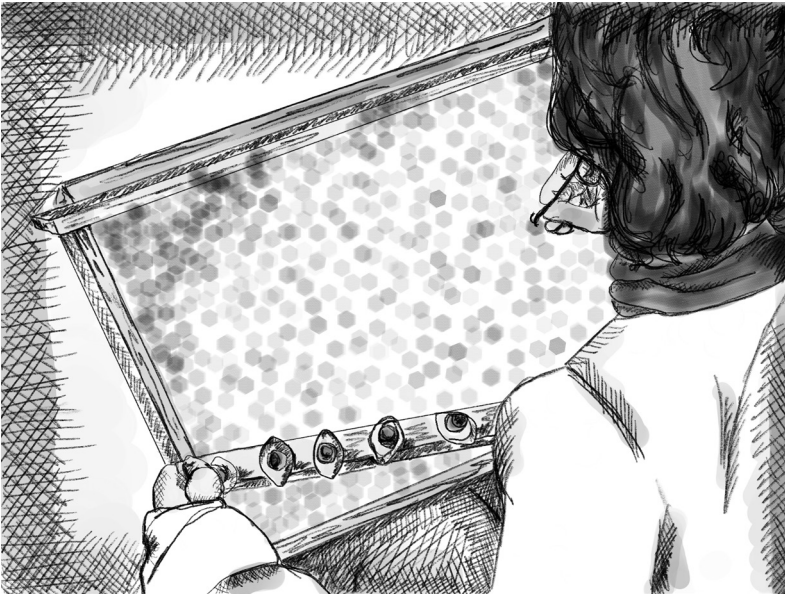
From the back of the hives, beekeepers lift them to estimate their weight. The heavier a hive is, the larger the family, which is likely stockpiling nectar and pollen. A lighter hive may indicate problems within the family or slow development for various reasons.



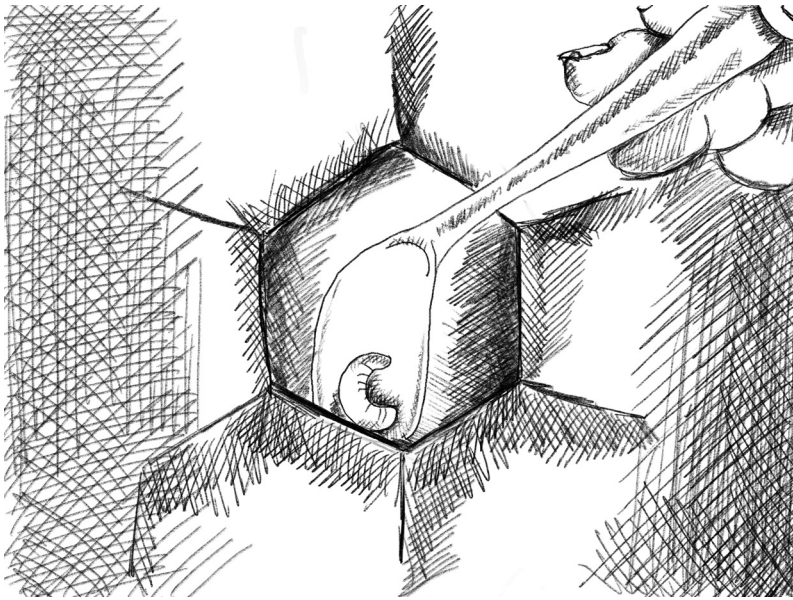
Finally, the beekeeper opens the hive and lifts the brood frames to observe how the queen is laying eggs, how old the larvae are and if there is enough pollen around the brood. All these signs are positive indicators that the environment is providing what the colonies need for their development and that the bees inside the hive are healthy and ready for the new season.



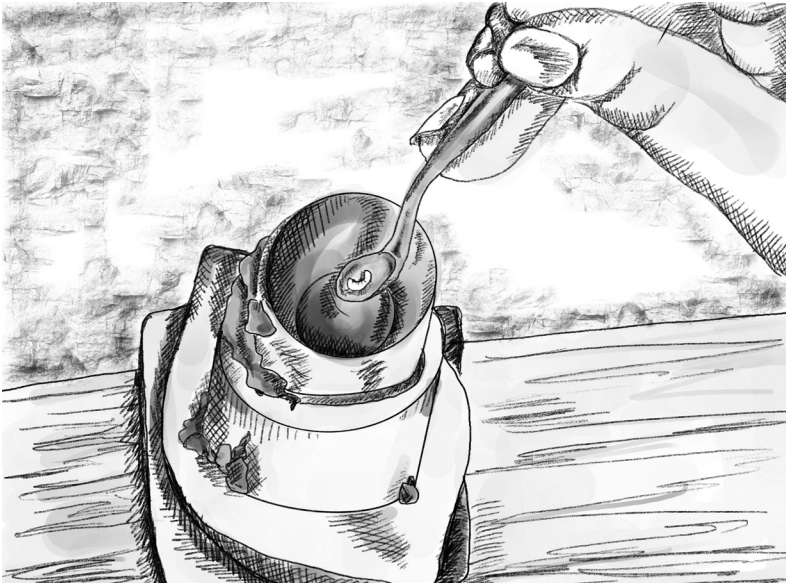
The beekeeper prepares the artificial queen cells, which are elongated cells that mirror natural queen cells in the hive. This task is usually reserved for a woman. Wives and female family members are believed to be better at this job.



A frame with enough fresh larvae (up to 5 days old) from a family with certain desirable behavioural traits that the beekeeper wishes to replicate is selected for making new queens.



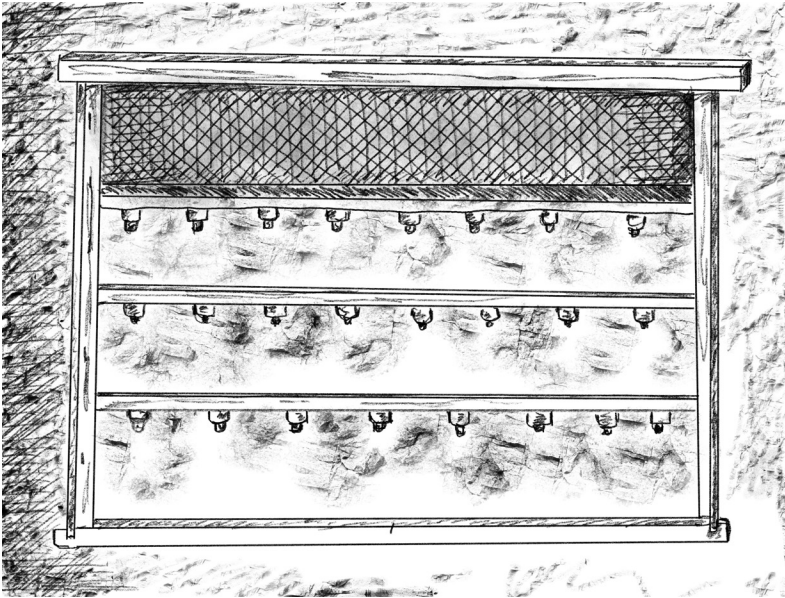
With a grafting tool, the beekeeper carefully lifts a tiny, fresh larva from the frame.



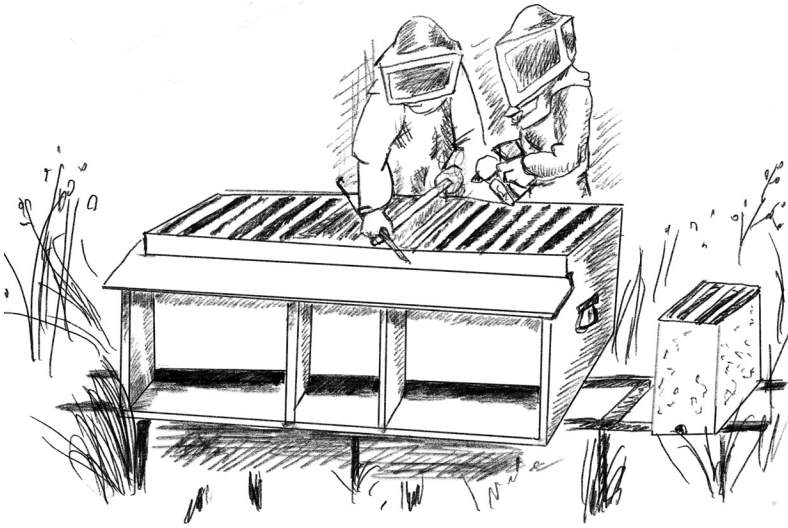
They then place it inside an artificial queen cell, which contains a drop of royal jelly to facilitate development and acceptance by the nurse bees.



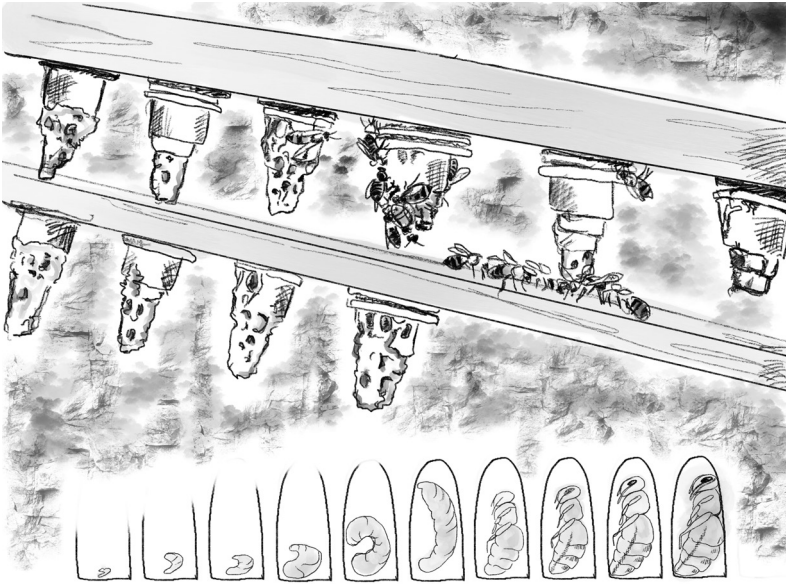
Before repeating the procedure, the beekeeper puts the grafting tool into their mouth to moisten it, which helps to avoid killing the larvae. In this moment, the human microbiome begins to interact with that of the bees' family. In turn, the bees' microbiome affects the environment's microbiome, supporting the development of mycorrhizal connections. This shows just a modicum of the intertwined co-dependences between bees, humans and the environment.



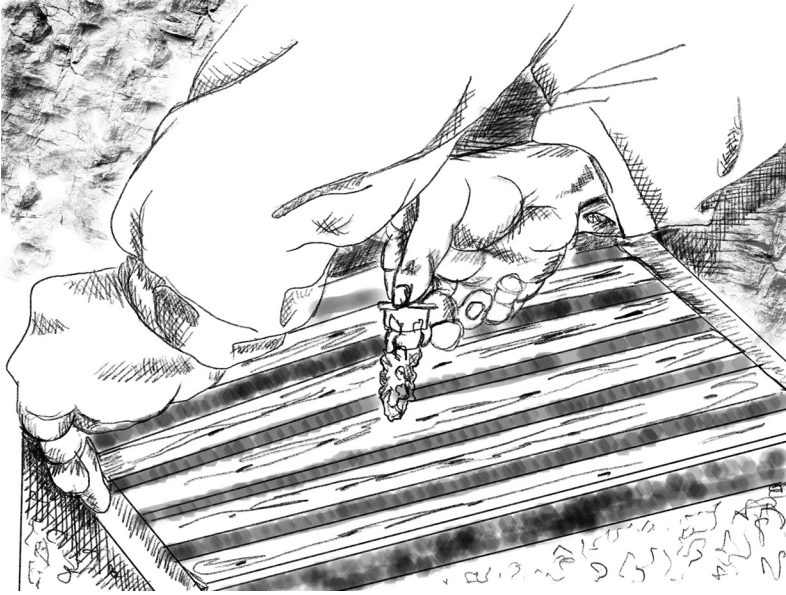
Beekeepers repeat the process until they have completed all the artificial queen frames needed to create new queens.



They position the frame in a special hive designed for this purpose. On the two sides, two queenless families are kept. Once the frame is positioned at the centre, the nurse bees in the two families are stimulated to feed the new queens. This is a very delicate moment, and the outcome depends entirely on the bees.



The bees may choose to feed only a small number of larvae, leaving the rest to die, or they can “accept” all of them. Slowly, the nurse bees begin to build up wax around the larvae, and in a few days, they cap the cells to allow the larvae to complete metamorphosis.



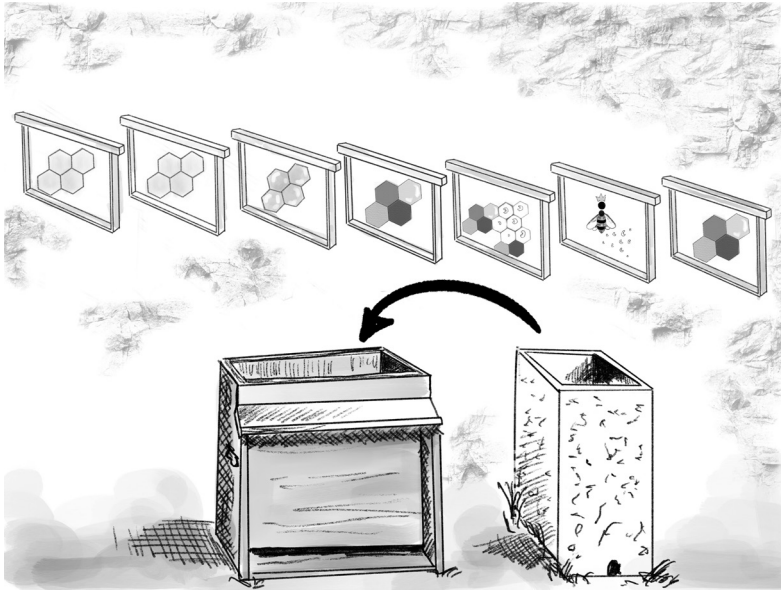
After approximately ten days, beekeepers take all the elongated cells and insert them into nucs – new small families that they have created with frames of nectar and pollen from other colonies. This step is important because the first queen to emerge from her cell will start singing to call for the others to be killed.



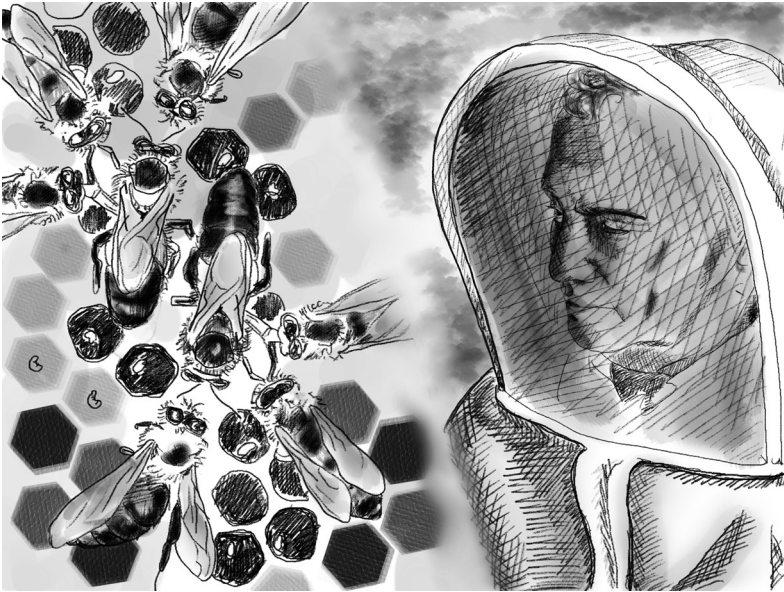
The new nucs are placed in a special field, where there is a minimal risk of interference from humans and other animals.



During this time, the virgin queens that emerge will take their nuptial flight to mate with multiple drones (male bees). This process is very delicate; any interference may result in the loss of the queen. But it is also violent, as all the males die in the mating process, eviscerated by the final “dance”.



After approximately forty days, the beekeeper evaluates the nucs' progress: whether the new queens are performing well and if the family is growing. Then, they move the family into a proper hive, carefully arranging the frames in a precise order: two frames of wax foundation, one frame with nectar, one frame with nectar and pollen, one frame with food and brood, one frame with the queen and new eggs, and one final frame of pollen and nectar.



After another month, the beekeeper opens the hive to assess the health of the new family. When a queen is performing well, the process is finally completed.

The new family will start producing honey the following year. Beekeepers' care and climate conditions will determine the survival of the family into the winter season.

