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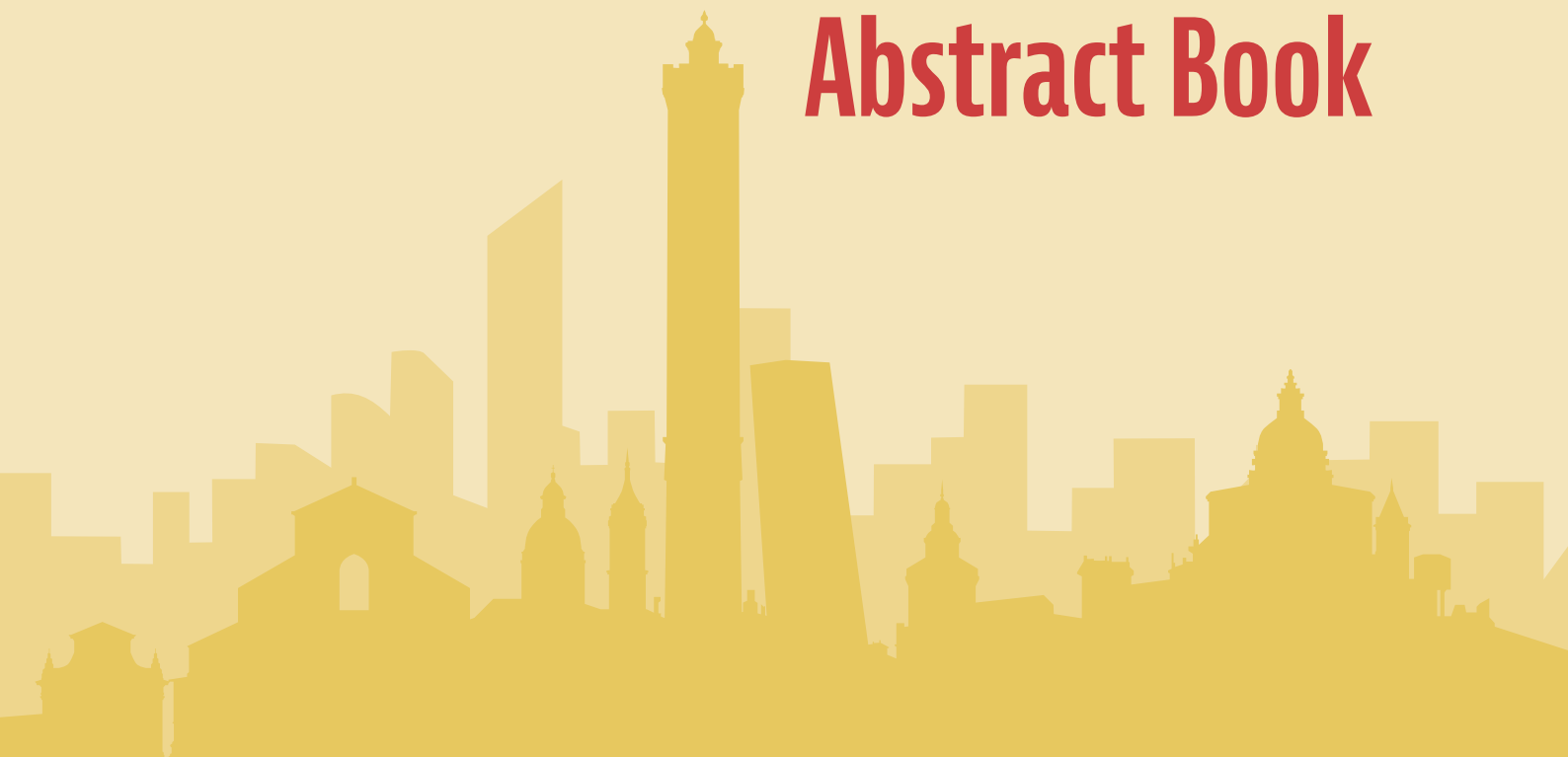
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Like foraging bees

We seek novelty, we need cooperation
and we profit from diversity

Abstract Book



HONEY BEES IN LAVA: A SELF-SUSTAINING POPULATION OF WILD HONEY BEE COLONIES ON THE ISLAND OF PANTELLERIA (SICILY, ITALY)

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Abstract

A growing number of studies is demonstrating the occurrence of wild honey bee (*Apis mellifera*) colonies in Europe. Understanding whether these colonies form self-sustaining populations requires demographic data. Since 2021, wild colonies on the island of Pantelleria have been monitored, commissioned by its National Park. The study began with reports from local beekeepers, who noted an abundance of wild colonies on the island. Over the years, 57 nesting sites have been identified and recorded using the application "BeeWild". Of these, 58% are found within the walls of buildings, 16% in natural cavities within lava deposits, and 9% in olive trees. Wild and managed colonies present on the island were sampled, and genetic analyses (sequencing of the tRNA^{leu}-cox2 mitochondrial DNA region)) clearly show assignment of wild colonies to the African lineage, while results from the managed colonies provide evidence of introduction of different genetic origins from mainland Sicily and Italian peninsula. The monitoring data indicate that the annual colony survival rate of wild colonies is greater than 50%, meaning that surviving colonies would need to produce fewer than one swarm per year on average for the population to be self-sustaining. Both the wild and the managed colonies do not show signs of collapsing due to varroa, and the most important factor for the survival of these colonies appears to be extraordinary high temperatures and drought in the summer, when the highest mortality rates are observed. Another common cause of colony mortality is targeted removal by humans. All over the island, especially in the Northern part, swarms are abundant, and recolonization of suitable sites is frequent. Local beekeepers often capture swarms from wild colonies to enlarge their apiaries. The wild populations thus likely function as a demographic source, the opposite to what is observed in many other European regions.