

## Explore the world of beekeeping <Part 5>

### Visiting Ishizuka Bee Farm (2)

Continuing from the previous issue, we report on the activities of Ishizuka Bee farm in the Koya district of Marumori Town, Miyagi Prefecture.

In modern beekeeping, a hive called "the Langstroth hive" is used. About 9 wooden frames can be fitted in the hive, and the bees build a comb according to the frame, where they store collected nectar and lay eggs. Since this frame is of the sliding type and can be taken in and out easily, it is possible to inspect the inside of the hive and monitor egg laying, growth of the larva, honey storage status, etc. of each frame. With these observations you can keep the hive in an appropriate state. In addition, the work of splitting the hive of a "strong swarm" in which the hive is in good condition and the number of bees is increasing into another hive to increase the number of swarms can be easily performed by relocating some frames to new hives. Furthermore, honey can be extracted efficiently and hygienically by using a centrifuge that can be set with the frame as it is, and since the comb remains within the frame even after the honey is extracted, the frame can be returned to the hive again. In traditional hives, laying egg and honey storage cannot be observed and a hive must be destroyed when honey is collected. In comparison to such traditional structures, the Langstroth hive technique is practically much more efficient.

At the time of this visit, one Zambian was receiving on the job training on these modern Japanese beekeeping techniques. From the appearance of the trainee performing the "hive inspection" and "splitting a hive" work together with the Japanese staff in a well-arranged and accurate manner, it seemed that the trainees had mastered not only the skills but also the style of Japanese teamwork. Koya district of Marumori Town has hosted many Zambian trainees since accepting the counterpart training of the JICA project in Zambia in 2010, and from 2016 to 2019, a grassroots project in Zambia was



Inspection of a Langstroth hive

being carried out by the farmers of Koya district. Ishizuka bee farm has also accepted 17 trainees from Zambia. After accepting trainees in the district, Mr. Ishizuka was dispatched to Zambia as a short-term expert for the JICA project and provided beekeeping guidance there. Based on his experience in Zambia, Mr. Ishizuka thinks that the development of apiculture in Zambia requires the development of beekeepers with modern techniques, but improvements in traditional or intermediate beekeeping techniques are also important to improve the livelihood of small farmers in Zambia. Therefore, in his bee farm he tries to improve and test the intermediate type of hive that is popular in Africa called the Kenyan top bar hive, and improve the centrifuge suitable for the fragile comb taken from top bar type hives. Mr. Ishizuka also thinks that not only technical improvement of colony management or nectar collection but also observation of the behavior of honeybees and the phenology of nectar source plants throughout the year is important to improve Zambia's apiculture. He believes that it will help Zambian beekeepers to reconsider the year-round schedule of honey collection, which is traditionally fixed.

Beekeeping is an interesting technical system that requires understanding and consideration of the small environment inside the hive and the environment of the entire area, such as the forests, grasslands, and fields surrounding the hive. Since the style of selling products developed by himself is also a concrete example of diversification of agriculture, the activities of Ishizuka Bee Farm were intriguing as a "livelihood" that comprehensively tackles nature and society. I felt the potential of beekeeping when I saw Mr. Ishizuka, the staff, and the Zambian trainee working vigorously and happily.



The Zambian trainee inspecting a top bar type hive