EXPERIENCES WITH *APIS MELLIFERA ADANSONII* IN BRAZIL AND IN POLAND

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The beekeepers are more and more interested in the African bee, *Apis mellifera adansonii* Latr, because of its aggressiveness and the rapid spread from the centre of Brazil to ever larger areas.

I have had the possibility to work with this bee for 7 months in Brazil and for 3 years in Poland. As far as I know nobody has kept this bee for so long a period in the temperate zone with heavy winter. My experiences may be useful for the beekeepers in the South as well as North America. Therefore I answer with pleasure to the inviation of the President of APIMONDIA, to publish some experinces with this bee.

The story of introduction of the African bee into Brazil, and investigation of this bee done there, were already described by me in "American Bee Journal", in 1969.

As I have seen in Ribeirao Preto in Brazil, there was rather difficult to work with the African bee. The beekeepers used veils, special dress and gloves. They used very much smoke. Sometimes also special smoking stoves with smoke were used. But the hives and supers were not covered during inspections. The bees could escape from the hives. They flew out and stung everything around. Several yards around the apiary nobody could pass.

Since I was rearing diploid drones there, the rearing colonies had to be strong. I strengthened the colonies by adding brood from other colonies. So there were three or four chambers full of bood, the workers had not enough place inside the hives, and barbs of bees were hanging on the front of hives and beneath the flight board. The colonies were really strong. Nevertheless, during the whole period I was working in Brazil, I never used the gloves or a special dress. I think this was possible by paying much attention to preventing the bees from flying out of the supers and to preventing the start of robbing. During inspection of hives, I put the supers always on the bottom board, with no entrance existing. The chambers were always covered with a wet towel. During examination of the combs only one frame was uncovered, and then the hive was covered again.

The African bees reared the queens very well. But sometimes much confusion occurred. Practically there was impossible to prove whether there was a virgin queen in the colony or not. In the presence of a virgin in the colony, the nurse bees started to build queens cells, which latter on were destroyed. The European bees do not start building queen cells in the presence of a virgin. Perhaps the virgin *A. mellifera adansonii* queens produce less queen substance ?

The *Apis m. adansonii* swarmed very often and sometimes it was not possible to catch the swarms.

I tried several tiines to strengthen the week nuclei by adding brood combs or young bees, just like in Europe. This never succeeded : The weak colonies were always supressed. The only way to save the queen from a week colony was to put her in a new, strong nucleus.

Comparison of the honey production of the African bee made by K e r r showed a surplus production of the Italian bee.

Concerning the diploid drones, the drone testes found in *A. m. adansonii* bee were the biggest from all the races I have investigated up to now. It seems that the rearing of a triploid bee would be the easiest among the African bee.

I was very afraid of taking the *A. m. adansonii* queens to Poland. But the investigation on diploid drones which started in Brazil was not finished, so I decided to finish it in Poland.

I introduced *A. m. adansonii* queens into the colonies in Poland. The entrances were supplied with queen excluders. Next, the number of pure African colonies was increased to 30. About the same number of crosses with various European reces was also kept. The colonies developed well. They were very aggressive. But not so much as in Brazil. Perhaps vitality in lower temperature is also lower and therefore they do not sting so much. At the same time we bought some bee colonies from the east-northern part of Poland where *A. m. silvarum* existed. The differences in aggressiveness between these two bee races were not very significant. But their aggressiveness was much higher than for instance that of the Italian bee. We use in Poland bars of 1 cm × 1 cm and as long as the upper bar of the frame.

These bars are located between the upper bars of the frames in a hive. So after the lid is taken off, the bees can not fly out. During inspection of a colony only one comb is uncovered. The bees can not fly out and the other can not start to rob. This arrangement was found very useful in the work with the African bees.

The African bees did not swarm in Poland. Perhaps the temperature was too low for them. The honey production did not differ from that of the other colonies. But the honey production conditions were very poor in this area and too many colonies were located in this place (150 colonies). So the results concerning honey production can differ in normal conditions.

The most questionable was the wintering of the African bee colonies. Brood from European races was added to some colonies in the autumn, to change the bee population. The bee colonies were located for winter in a dark room in which the temperature was controlled, ranging between 0° and +4°C. One colony, in which the drones had yellow areas on the sides of the abdomen was left outside during winter. All the colonies were strong enough. They wintered on 8 to 10 frames of the size of 36 cm × 26 cm, or 43.5 cm × 30.0 cm. The colonies wintered well at the beginning. But the bees started to die after about 3 months. Most of the colonies in which pure African workers existed, died. Many workers also died in the colonies with mixed populations. The span of life of *A. m. adansonii* bees during winter was similar to that of summer workers which did not work hard. The cause is likely to be the fact that the *A. m. adansonii* worker bees do not prepare themselves for winter. Therefore, they can not survive a winter which lasts for several months. In order to help the African queens to survive, they were introduced, in autumn, into colonies of pure European bees. In these conditions, the queens overwintered quite well.

Very interesting is what happened with the colony which was left during winter out-of-doors. Many workers died, but the colony survived, and then developed well in the spring and autumn. The same colony with the same queen also survived the next winter. The color of the drones may suggest that this colony was mixed with some Italian bees. But the drones have no yellow rings on the tergites and therefore the share of the Italian blood was not high. Also, the workers of this colony were not so aggressive as those in the other African colonies. Other hybrids with native bees were also not so aggressive as pure African bees and they survived the winter in variable degree. The most important question for the beekeepers in the temperate zone countries is whether the *A. m. adansonii* bees can survive the winter and spread in those countries.

There should be pointed out that the experiences with the *A. m. adansonii* bee were made in Poland on a relatively small population. But on the basis of the experiences made here, one can state that pure *A. m. adansonii* bees can not survive heavy and long winters. They can survive short and mild winters. Hybrids with native bees can survive heavier and longer winters but they are not so aggressive as pure African bees.

LITERATURE CITED

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APIACTA

AN INTERNATIONAL TECHNICAL MAGAZINE OF APICULTURAL AND ECONOMIC INFORMATION

VIII 3 1973