

A NEW DISEASE OF THE INDIAN HONEY BEE, *APIS CERANA INDICA* F., IN KERALA

Kerala contributes 70 per cent of the annual honey production in India. Around one lakh bee keepers and their families depend on this industry. *Apis cerana indica* F., the only domesticated species of honey bees in Kerala had been free from any disease problems till recently. A new disease appeared in some parts of Kerala in early 1992 and it had spread all over the state rapidly destroying over 90 per cent of the colonies.

The disease affected the larvae in their early stages and the symptoms developed slowly causing death in the late larval phase of sometimes even after pupation. Infected larvae became slightly plumpy and yellowish in colour. In the later phase the internal contents got liquefied through histolysis and the larvae appeared as fluid filled sacs. They could be seen lying on the floor of the cells with the heads directed outwards and turned upwards. The cadavers dried out as thin scales lying at the floor of the cells which could be easily removed from the cell. Both worker and drone broods were seen affected by the disease.

The occurrence of the disease affected the behaviour of the bees in the colony. In the earlier phase of the disease, the workers ejected the diseased larvae from their cells and many diseased and dead larvae could be seen strewn on the floor board as well as on the ground below the hives. Dead pupae in sealed cells were ejected after biting open the cell cappings. When the

disease became severe the workers failed to remove all the affected larvae and pupae. In course of time the foraging activity of the worker bees showed a decrease and they remained idle in the colony. Eggs became sparse and irregularly placed in the cells. The emerging larvae died due to the disease. Consequently the population of bees in the affected colonies dwindled down and the remaining bees might desert the colony at this stage.

No pathogenic bacteria, fungi or protozoa could be isolated from the diseased larvae. Electron microscopic studies on diseased larval tissue extract at the College of Veterinary Sciences, Mannuthy, Trichur revealed the presence of oval to round bodies resembling the virus associated with sac brood disease of European honey bees. The specimens were sent to Dr. Brenda V. Ball, Rothamsted Experimental Station, U.K., for confirmation of the identity. Immunodiffusion studies there against antisera to different viruses infecting honey bees showed that specific line of reaction was obtained only against Thai Sac Brood Virus antiserum (Personal communication from Dr. Brenda V. Ball). The disease observed in Kerala was thus established as Thai Sac Brood disease caused by a non-inclusion virus.

The first incidence of Thai Sac Brood Virus disease in India was recorded in 1978 from Meghalaya (Kshirsagar *et al.*, 1981) and later it was found spreading to Punjab, U.P. and other north Indian states (Kshirsagar, 1983).

REFERENCES

Kshirsagar, K.K. 1983. Disorders of bees in India. *Indian Bee J.* 45 : 39-43

Kshirsagar, K.K., Diwon, V.V. and Chauhan, R.M. 1981. Occurrence of sac brood disease in *Apis cerana indica* Fab. *Indian Bee J.* 43 : 64

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