



BEES vs ELEPHANTS

John Home says biology can find solutions to the biggest problems – like stopping a six-tonne African elephant in its tracks

Elephants can be destructive. They have been known to kill people and are considered a serious threat to farmers and landowners in Africa. It is therefore urgent to find ways of dealing with the issue without killing elephants.

In Kenya, as in other developing African and Asian countries, the main problem is a growing population and the pressing need for land to grow crops and manage livestock to provide a livelihood. Unfortunately, the spread of Shambas (small farms) is often onto land located on the traditional migratory routes of elephants, routes which are implanted in their memory.

On a recent trip to Kenya to carry out project work for the charity Bees Abroad, I visited Mafield Gichuki, a farmer and beekeeper. Bees Abroad promotes beekeeping as a farming enterprise that can help to relieve poverty through honey production and improve crop quality and yield through pollination.

Mafield's thick prickly hedges, and I mean thick, do not stop elephants. Recently, an elephant entering the farm quickly devoured crops that would have supplied the family with food for many months.



Kenyan top-bar hives are hung on wires underneath thatch to protect them from the strong sun.

John Home is chairman and project leader of the UK charity Bees Abroad.



An elephant never forgets

For the last five years, British biologist Dr Lucy King has been working on ways bees can be used to protect farms in Kenya from

elephants. She found that elephants did not feed on trees with hives of African honeybees and will run from digital playback of recordings of the insects. The elephants are afraid of being attacked and, once stung, remember it forever.

Dr King developed a solution: to place hives of bees, at intervals of approximately 10 metres, along the thick hedges. Any gaps in the 'bee fence' are vulnerable to letting through elephants, so on the boundary of the farm with no hedge a row of Kenyan top-bar hives were suspended independently on wires (see photo above) so they could swing under thatch, keeping them cool in the strong African sun.

There was also a wire strung between each of the hives about one metre off the ground. When the elephants hit the wire the disturbance causes the bees to come out to defend the hives. The elephants flee when they hear the sound made by the angry attacking bees and as they do so they emit a distinctive communicating noise to warn other elephants of the danger. Elephants apparently are vulnerable to being stung on the delicate end of the trunk and possibly inside their big ears.

Spiteful bees

The bees need a few days to settle down after elephant disturbance before normal beekeeping activities can be resumed. From my experience over the last six years visiting projects as a volunteer with Bees Abroad, I know just how spiteful the indigenous bees can be when handled badly and how determined they are to follow the offender until they have inflicted their sting.

The local language is Swahili, which I have not mastered, so I found it hard, even with an interpreter, to find out how dangerous it is for local people and tethered farm animals when the bees are upset. Yet the outcome seems to be that the elephants eventually choose a new route, avoiding farms that have bees to guard them.

The United Nations Environment Programme¹ recently gave Dr King an award for her research that led to the bee fence, which could be used in many other countries with large elephant populations and expanding agricultural land.

Dr King has helped prove once again that where there is a problem, biology is a great place to look for the answer.

For more information on Bees Abroad and their work visit www.beesabroad.org.uk

REFERENCE 1. UNEP (2011). United Nations Environment Programme Press Release, Bergen 21 November 2011. UNEP Awards Elephant Researcher for Bee Solution to Human-Animal Conflict. www.unep.org/Documents.Multilingual/Default.asp?DocumentID=2659&ArticleID=8953&l=en&t=long. Accessed 19/08/2012.