

BEETLES – or BUGS – to the rescue at SIBUDU

A stem-wilter beetle - or bug - has been released to control the invasive alien plants, *pereskia aculeata*, at the Sibudu Cave.



Dr Iain Paterson releasing the bio-control agent

Why all this fuss about a plant?



Pereskia at the entrance to Sibudu Cave

PERESKIA IS AN ALIEN MONSTER OF A PLANT!

Pereskia smothers indigenous plants and even kills large forest trees which collapse under the weight of the weed. Infested forests become degraded ecosystems with very low levels of biodiversity – and the thorny weed also restricts access!

VIRTUALLY IMPOSSIBLE TO ERADICATE BY HAND

It is a “leafy cactus” and when you pull it up, any little bit of broken-off root will grow a new plant; if you chop it down, any little piece of stem or leaf will grow a new plant. And it also spreads by seed dispersal. “It is one of the worst weeds in South Africa” says Dr Iain Paterson who did the research on bio-control of *pereskia* at the Department of Zoology and Entomology of Rhodes University. These beetles were introduced to the local *pereskia* plants in various locations in South Africa last year - for the first time. They are in great demand! See: <https://www.ru.ac.za/zoologyandentomology/research/biologicalcontrolresearchgroup>



FRIENDS OF SIBUDU

We have been deeply concerned about this invasive plant and on the 20th March contacted Dr Paterson on the off-chance that he could help. When we explained that the Sibudu Cave is a world-renowned archaeological site – and also badly infested with *pereskia* - Dr Paterson decided to make it a priority and arranged to release the beetles/bugs on the 13th April onto *pereskia* plants in a sheltered spot near the Cave. The beetles were donated by the SA Sugar Research Institute, and were brought to the Site by Kanyi Buthelezi (who had reared them), transported in plastic

boxes with *pereskia* off-shoots. Dr Paterson hopes they will be established before the winter.

The little ceremony was attended among others by Karen Hope (DEA), Barbara Dunn, archaeologist from the (Sibudu Trust), Kim Weaver, Community Engagement Officer of the Biological Control Research Group, a member of Working for Water (who funded the 7-8 year research before the insects were proved to be safe), and members of your Committee.

MANY THANKS TO ALL CONCERNED - to Dr Paterson and the rest of his team, to SASRI who provided the insects, to Kanyi who reared them and brought them to Sibudu, to Karen Hope from the DEA who authorised the release of the beetles, and to Mr John Dasa of the local community who welcomed us and allowed us to cross his property to get to the Site.

The Daily News covered the event. www.iol.co.za/dailynews/news/alien-wars-in-durban-cave-2010003

This is the link to the video taken of the occasion, on site. <http://iol.co.za/bass>

THE HERO BEETLE - OR BUG



Adults

The pereskia stem-wilter is one of the insects that feeds on pereskia in Brazil. It is a sucking bug that destroys the growing tips of the pereskia, stunting the plant's growth and reducing its' ability to compete with other plants.



Nymph

The insect was imported into quarantine at Rhodes University in Grahamstown about seven years ago and was subjected to rigorous host specificity testing that confirmed that the stem-wilter can only survive on Pereskia.

It does therefore not pose a threat to any of our indigenous plants

"The Working for Water" Programme (WfW) of the Department of Environmental Affairs: Natural Resource Management programme (DEA:NRM) has funded research into biological control of pereskia. The Department of Agriculture, Forestry and Fisheries (DAFF) granted permission to release the pereskia stem-wilter. Mass rearing efforts to produce large numbers of the new agent have been underway at Rhodes University and the South African Sugar Research Institute (SASRI)."

Eggs are black-brown and laid in batches of up to 30 on any rough surface. The tiny nymphs (less than 2mm in length) are first red but turn black after a few hours. The nymphs cannot fly but are very active and seek out Pereskia shoot tips to feed on. The nymphs go through four moults over a period of about 22 days before they reach the adult stage. Adults can fly, are about 13mm in length and are yellow and brown in colour.

The insect was released for the first time in September 2014 and is expected to reduce pereskia densities resulting in a return in indigenous biodiversity at previously infested sites. The biological control agent will therefore protect South Africa's natural resources and the indigenous biodiversity of ecologically important areas.

<http://www.arc.agric.za/arc-ppri/Pages/Pereskia-Barbados-gooseberry.aspx>



Khanyi brings out the beetles

PERESKIA - more facts

It is also known as Spanish or Barbados Gooseberry, also as Lemon Vine (its flowers have a lemon scent) and as *uqwaningi* in Zulu. It was brought to South Africa as a botanical curiosity in 1858. It slowly naturalised, starting to grow in indigenous forests and coastal vegetation. It is a spiny, with long slender branches, somewhat like a bougainvillea. The young stems and leaves are semi-succulent with pairs of short, hooked spines. The older stems are woody with clusters of hard, straight spines 30-40mm long. It has been often used as an excellent barrier against intruders.

PERESKIA IS NOW LISTED AS A CATEGORY 1 INVASIVE PLANT, AND UNDER SOUTH AFRICA'S ALIEN AND INVASIVE SPECIES REGULATIONS, IT MUST BE REMOVED & DESTROYED IMMEDIATELY.

Bug or Beetle?

While it is commonly referred to as a beetle, the stem-wilter does not chew but sucks, and so it is more correctly named a 'bug'. Why does this sound so unfriendly?

Is it the American use of the word 'bug' for all insects – like we use the words 'nunu' or 'gogga'? Or is it the negative connotation as in 'Stop bugging me'?

Dr Paterson usually refers to it as an 'agent' – real hero stuff like 007!

