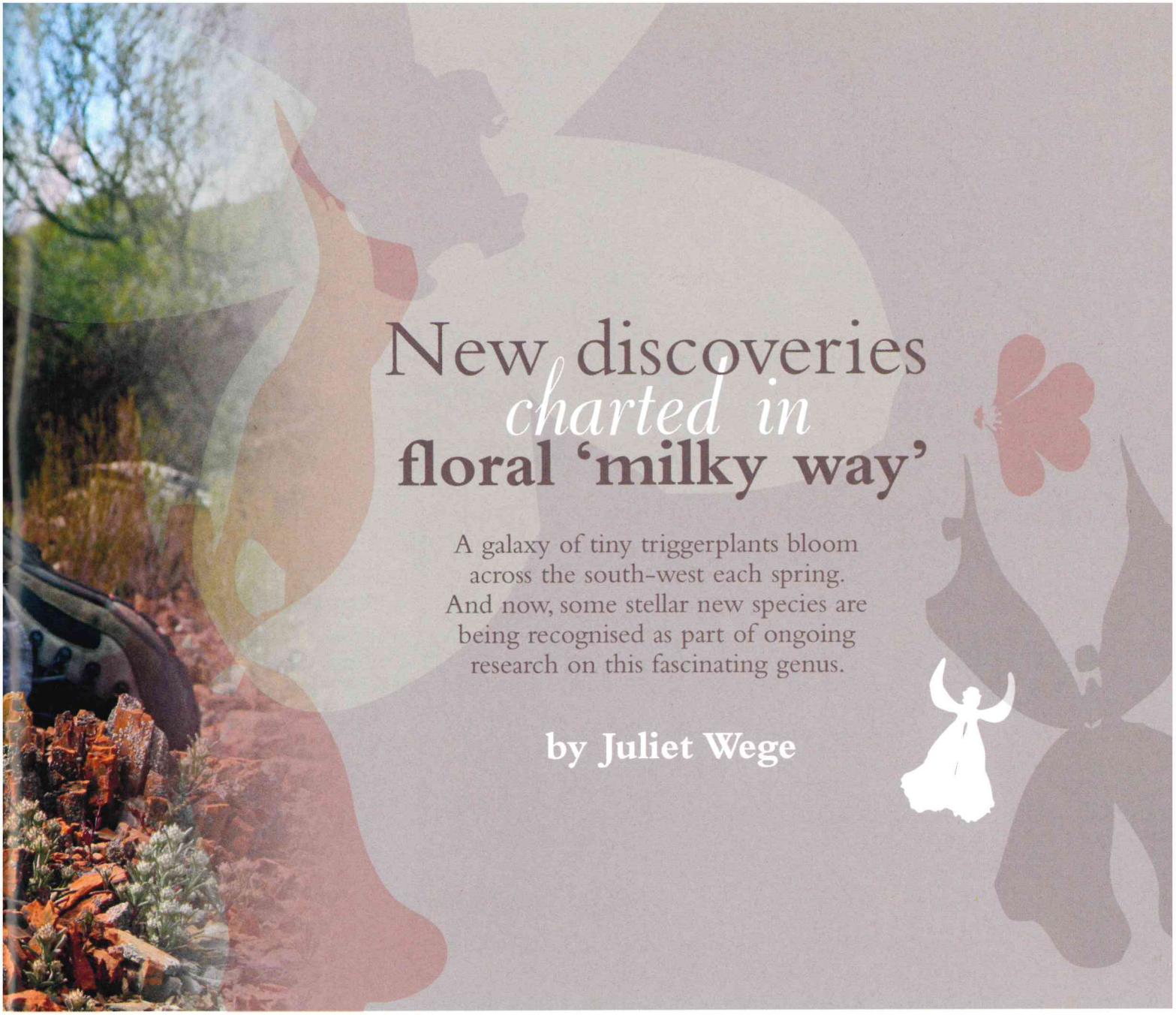
In early spring, the fringes of granite outcrops across south-western Western Australia are transformed into a carpet of colour as thousands of small herbs begin to bloom. Forming an important part of this enchanting floral display are species related to the horn triggerplant (*Stylidium petiolare*)—a group of tiny geophytes that cope with the region's hot, dry summer months by dying back to a small, shallowly buried and nutrient-rich corm. The corms are capable of significant desiccation, becoming almost fully dehydrated by the start of summer, but rapidly rehydrating following autumn rains. These remarkable herbs, which are typically less than 10 centimetres high, are known as microgeophytic triggerplants and they are unique to south-western WA.

New discoveries

Microgeophytic triggerplants grow in winter-wet swamps as well as on granite outcrops. Different species can grow intermixed at any given site and although each species can be separated using floral features, such as the shape and colour of the corolla lobes and the structure of the throat appendages, it takes a keen eye to distinguish one species from another. Following good winter rains, the microgeophytic triggerplants can form colourful swards that have been likened to a floral 'milky way'. Navigating through the taxonomy of this group has been a recent mission at the WA Herbarium—one that has doubled the number of known species from seven to 14, and has included some exciting new discoveries.

The glistening triggerplant (*Stylidium scintillans*) was unearthed in 2007 during botanical surveys of mining tenements in the Yalgoo region, east of Perenjori, and has since been listed as 'threatened'. Its recognition and scientific description is an important step towards ensuring its



New discoveries *charted in* floral 'milky way'

A galaxy of tiny triggerplants bloom across the south-west each spring. And now, some stellar new species are being recognised as part of ongoing research on this fascinating genus.

by Juliet Wege

conservation in a region that is under significant pressure from exploration and mining for iron ore. Named for its unusual shimmering appendages in the centre of the flower, it is the only microgeophytic triggerplant that occurs in this region and grows in highly localised populations.

A second new find is the little wildebeest (*S. cornuatum*), discovered in 2008 during a search for a different triggerplant in swampy bushland near Eneabba. Its scientific name means 'horn-shaped' and was chosen because its upper corolla lobes resemble the horns of wildebeest. Its common name follows in the footsteps of Rica Erickson, who created imaginative names while researching these species in the 1950s, including the pantaloon triggerplant (*S. periscelianthum*) and thumbelina triggerplant (*S. pulchellum*). The little wildebeest is known from just a few sites, but it is hoped that an increased awareness of this species will lead to the discovery of additional populations.

Although ongoing botanical surveys are vital to documenting WA's biodiversity, there are also new species awaiting discovery in the collections at the WA Herbarium. One example is the little yellow triggerplant (*S. xanthellum*) which has, until recently, been overlooked as a distinct species, despite being collected on a number of occasions, including by colonial botanist James Drummond more than 170 years ago. As part of the taxonomic review of the microgeophytic triggerplants, hundreds of herbarium collections were painstakingly examined and sorted—a process vital to understanding what species we have, where they grow, when they flower and how common they are. Some species were found to be more common than previously thought, such as the deceptive triggerplant (*S. decipiens*, formerly known as *S. emarginatum* subsp. *decipiens*). This species was previously only known from the Cranbrook area but examination of herbarium collections, combined with field research, uncovered 20 populations

Above Department of Environment and Conservation senior research scientist Juliet Wege photographing the glistening triggerplant.
Photo – Ryonen Butcher

Opposite page
Left Glistening triggerplant.
Photo – Juliet Wege/DEC

Left Deceptive triggerplant.

Below left A floral 'milky way'.

Below Little wildebeest.
Photos – Juliet Wege/DEC

distributed over a north–south range of more than 800 kilometres. In contrast, some species were found to be of conservation concern, including the star triggerplant (*S. asteroideum*) and the apron triggerplant (*S. rubricalyx*)—two valid species named by Rica Erickson but, until now, disregarded as distinct species.

Managing for the future

Several microgeophytic triggerplants require further survey in order to determine appropriate conservation actions. Although populations can consist of thousands of plants, they tend to grow over a very small area, making them vulnerable to threats such as digging by feral pigs, inappropriate off-road vehicle use and mining. It is hoped that the updated taxonomic framework will help people identify these tiny triggerplants, and lead to a renewed appreciation of their diversity. So why not take part in some star-gazing of a different kind this spring—plot a course to a granite outcrop and marvel at the miniature galaxy growing at your feet.

Dr Juliet Wege is a senior research scientist at the WA Herbarium.
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*For more information about microgeophytic triggerplants, contact Juliet to obtain a copy of her article 'Navigating the floral milky way: the taxonomy of the microgeophytic triggerplants (*Stylidium petiolare *and allies:* Stylidiaceae*)', published in* Australian Systematic Botany *25.*

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