

Headline	Rare finds on outcrops		
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**Lush hills:** Soaring limestone outcrops, such as Gua Panjang, tower over the landscape of Merapoh, Pahang. Botanists say each hill is dominated by different flora.  
— Photo by LAILA BASIR

## Botanists uncover a flora treasure trove in Merapoh hills.

By TAN CHENG LI

**T**HE drive along Federal Route 8, or the Gua Musang Highway, in Pahang, is a rather scenic one. Towering over the expanse of oil palm estates, which are broken up in parts by rural kampung and lush forests, are majestic-looking limestone outcrops.

Some 20 limestone karsts – some people say it is at least 30, as not all are shown on maps – are scattered along the road stretching from Chegar Perah to Merapoh in the district of Lipis before the land inches into Kelantan territory.

The karsts are highly visible as one makes the drive but surprisingly, they are completely unknown from a botanical viewpoint.

“We looked for data and found no record of the plants there. None of the limestone hills have been botanically explored before. For us, it’s a botanical blank on the map of flora,” says Dr Ruth Kiew, a plant taxonomist at the Forest Research Institute of Malaysia (FRIM).

And so, when her team converged on the hills around Merapoh, there were plenty of interesting discoveries – there were rare, endemic plants, and even an undescribed one.

At Gua Gunting, the hill which will be quarried, they recorded over 200 plant species in just two days. This is hardly surprising as limestone hills are known for their rich plant diversity.

Peninsular Malaysia’s limestone hills cover only 0.3% of the land area but are home to 14% of her plant species. Unfortunately, none of the limestone hills in Merapoh are protected, and hence, are at risk from wanton development. The FRIM team made two trips this year, where they surveyed five hills.

“From what we have found so far, it’s a unique place as the flora on each hill is so different. This is unique from my experience of working in Malaysia,” says Dr Kiew, a leading authority on limestone flora. “I expected the flora to be an exten-

sion of limestones from Gua Musang (in Kelantan), so I was surprised that the hills are so different and we’re picking up unexpected things.”

One such instance is the discovery of *Pararuellia sumatrana* var. *ridleyi* which is previously known only from Batu Caves, Selangor.

Another important find is that of a balsam, *Rhynchoglossum obliqua*, previously known only from Gunung Tupus (at Chegar Perah, south of Merapoh) and another undisclosed site. FRIM scientists failed to locate the plant at Gunung Tupus, now surrounded by oil palms, and believe it has become extinct there.

“This is just one indication of what can happen. If limestone hills are surrounded by oil palms and there is burning to clear the land, that will destroy the flora. If the hills are not protected with a buffer, then it is easy for species to become extinct.”

The Merapoh hills also harbour species of fern, begonia and balsam that grow only on limestone. The scientist also found the *Pandanus*



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*irregularis* which is endemic to Peninsular Malaysia and grows only on the summits of limestone hills.

Some other finds:

> *Spelaeanthus chinii* – Endemic to Pahang, it was previously known

only from Taman Negara and another hill in Lipis.

> *Zippelia begoniifolius* – Known from only three collections, the last one in the 1930s.

> *Monophyllaea musangensis* – Previously known only from Gua Musang, Kelantan.

> *Tridynamia megalantha* – Last collected in Perak in the 1880s.

> *Calciophilopteris alleniae* – A rare

endemic fern known only from five limestone hills.

> *Cleisostoma complicatum* – This is the third locale for this orchid which is found in Pahang for the first time.

These are just the preliminary findings; the botanists have bags of specimens awaiting analysis and they intend to make more trips to Merapoh.

“We’re just scratching the surface as we’ve only surveyed five hills. We need to survey all 20 hills to document the plants and see which is critically important for conservation because of rare and endangered species.

“Limestone hills have a lot of micro-habitats. For instance, at

the foothills you get plants suited to damp conditions.

On the rock face, there are other types of flora and at the hilltop, you get plants which are exposed to the sun. So, you must survey all habitats to get a complete list of the flora,” says Dr Kiew.

She adds that surveys of fossils, micro-snails and cave fauna are also needed to determine the importance of the hills for wildlife.

Preservation of the caves is important, she adds, as they can be part of the Sungai Yu wildlife corridor, a stretch of forest that is important for connecting Taman Negara and the Main Range, the country’s two largest forest complexes.

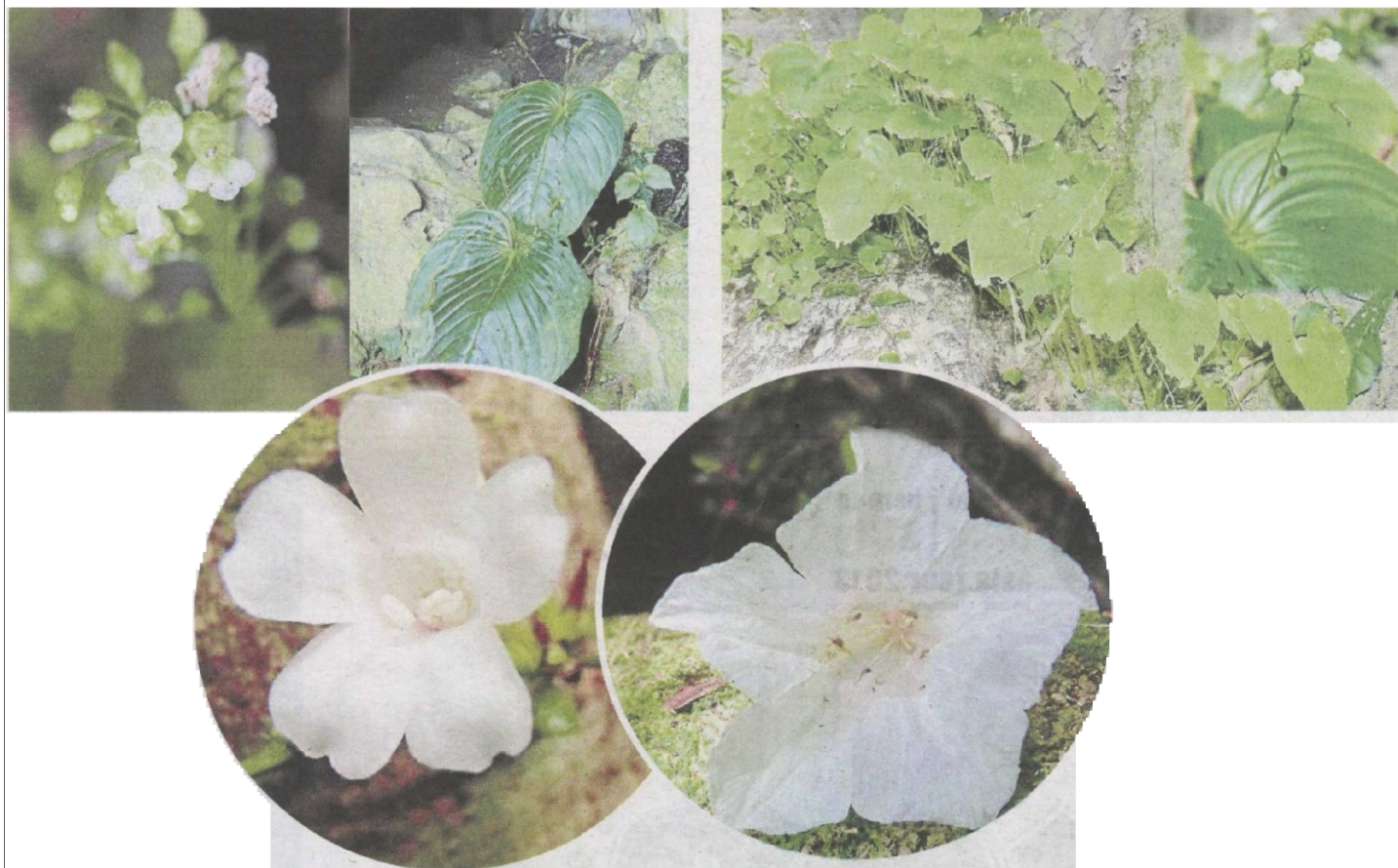


*Zippelia begoniifolius* was last collected in the 1930s, and has so far been found only at three sites. – Photos from FRIM



Previously known only from Taman Negara and another hill in Lipis, *Spelaeanthus chinii* has been found in a limestone hill in Merapoh.

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*Monophyllaea horsfieldii* is a one-leaf plant. (Inset) *Pararuellia sumatrana* var. *ridleyi* was thought to grow only in Batu Caves, Selangor, but was recently found in Merapoh.

*Monophyllaea musangensis*, previously only recorded in Gua Musang, Kelantan, has been found in a Merapoh limestone hill. (Inset) *Tridynamia megalantha* was last collected in Perak in the 1880s.