

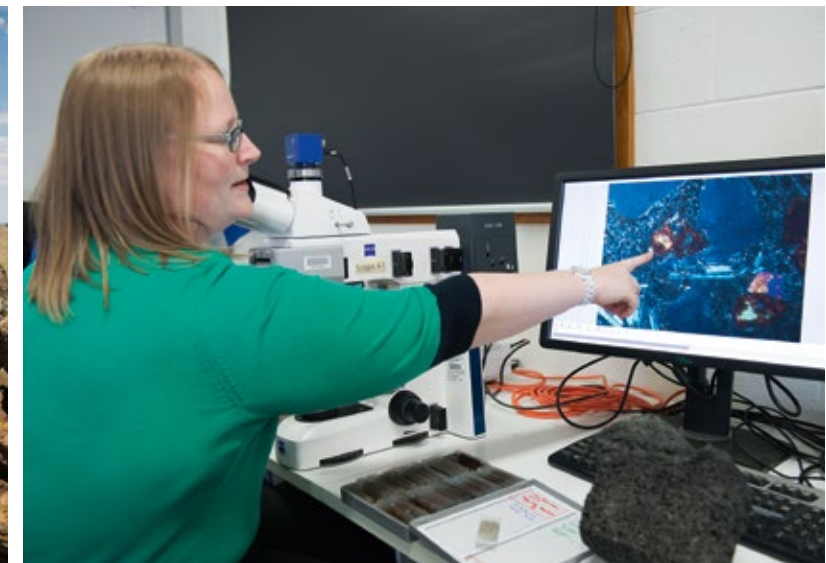
TRACKS

LAND OF THE VOLCANOES

A mountain-dotted route through south-western Victoria reveals more than 400 sleeping volcanoes.

STORY + PHOTOS DON FUCHS

Black rocks north of Port Fairy mark where the 60km long lava flow from Mt Rouse reaches the Southern Ocean.



The view from the top of Victoria's Mt Rouse is breathtaking. To the north, the jagged skyline of the Grampians ends the flat expanse of an enormous plain. To the south, the flats end at the Southern Ocean, about 60 kilometres away. To the west, a solitary mountain focuses the view, and to the east the plains fade into the late evening haze.

For those without a geological background the panorama is simply stunning. For those in the know, however, it is a revelation. What you see is one of world's largest basalt plains. The lone mountain is Mt Napier, the most recently active volcano in Victoria. The distant hills to the east are also born of fire. And so is Mt Rouse itself. The stony rises on the country below were once lava flows.

Mt Rouse lies within what geologists call the Newer Volcanic Province. The area covers more than 19,000

square kilometres, stretching from Melbourne to Mt Burr, north-west of Mount Gambier in South Australia. Within this volcanic field are a staggering 437 known volcanoes. Julie Boyce, a researcher from Monash University's School of Geosciences, recently identified 23 'new' volcanoes in the region. "The more you look at these things, the more you realise that volcanoes have a very distinctive morphology," Julie says. Once you know what to look for, you start seeing volcanoes everywhere.

Leaving Melbourne on the Calder Highway, the first port of call is still within the commuter belt of the Victorian capital: Organ Pipes National Park. In a valley carved by Jacksons Creek, spectacular hexagonal columns of basalt offer a glimpse into the volcanic past of the area. The highway leads deep into the Newer Volcanic Province. Only 70km north-west of Melbourne lies a region dubbed as spa country for its numerous mineral springs.

Daylesford and Hepburn Springs are favourite weekend destinations for those in search of rest and relaxation. Many don't notice the sleeping volcanoes dominating the landscape east of the two picturesque villages.

The Macedon Ranges and the confused stone world of Hanging Rock – immortalised by Peter Weir's movie *Picnic at Hanging Rock* – are of volcanic origin.

CLOCKWISE FROM ABOVE: The youngest crater of the Tower Hill complex is now filled with water; dry-stone walls of volcanic rock at Stockyard Hill; Julie Boyce examines samples of volcanic rock at Monash University; ferns decorate the lava tunnels of the Byaduk Caves near Mt Napier; Mt Rouse offers stunning views towards the Grampians; Deb and David Bain of Stockyard Hill.



CLOCKWISE: The view from Red Rock near Colac reveals some of the 30 eruption points; the Volcano Centre in Penshurst; basalt columns in Organ Pipes National Park; Mt Kooroocheang along the unsealed Ullina-Kooroocheang Road is one of the largest volcanoes in central Victoria; John Southerland, guide at Tower Hill, explains the extensive ash layers left by volcanic eruptions.

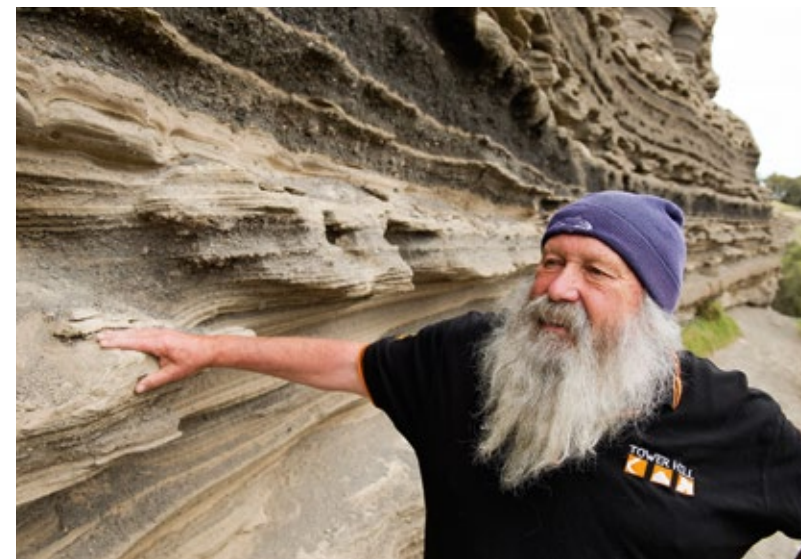
More than six million years ago viscous, sticky lava oozed out from vents here, congealing in places and forming large domes. Hanging Rock, at 718 metres, and Camels Hump, at just over 1000m and the highest point of the ranges, are the eroded remnants. "I'm amazed that lots of Victorians don't even know that they have volcanoes here," Julie says. "It's one of the best volcanic areas in the world. We have lava shields, we've got scoria cones, we've got tubes that you can walk through. There is a vent at Mount Eccles and you can actually abseil down into it."

Just a few kilometres to the north of Hepburn Springs is Mt Franklin, another extinct volcano, darkly coated with pine trees. The crater provides an idyllic picnic and camping spot. Beyond this point, narrow, sometimes dirt roads traverse pretty farmland and head in a westerly direction. A detailed map and a good sense of direction are required. At one stage the unsealed road passes Yandoit Hill, an inconspicuous, heavily eroded scoria cone – one of the most common, small volcano types. Further along, on the way to the gold-mining town of Clunes, the volcanic past becomes more obvious. Along the unsealed Ullina-Kooroocheang Road stand two impressive hills, Mt Kooroocheang and Mt Moorookyle. Their dome shapes identify both as volcanoes.

In Clunes, the focus briefly changes from vulcanism to precious metal. Victoria's first gold discoveries were made here and many of the historic buildings and facades are still intact. But heading west towards Lexton, volcanoes again

come to the fore. Wind turbines adorn Mt Mitchell and it also features a handful of small volcanic cones, caused by gas-rich magma pushing to the surface. Today these smooth hills with their rich soils create a benign picture that defies their fiery birth.

Stockyard Hill, less than 50km to the south of Lexton, is a maar volcano, formed by groundwater coming into contact with hot lava or magma. It lies on Deb and David Bain's farm a few kilometres south of Beaufort, where the couple run 9000 sheep. Long, dry-stone walls made from basalt announce the homestead and give clues to the geology of the place. "Our farm is dominated by the



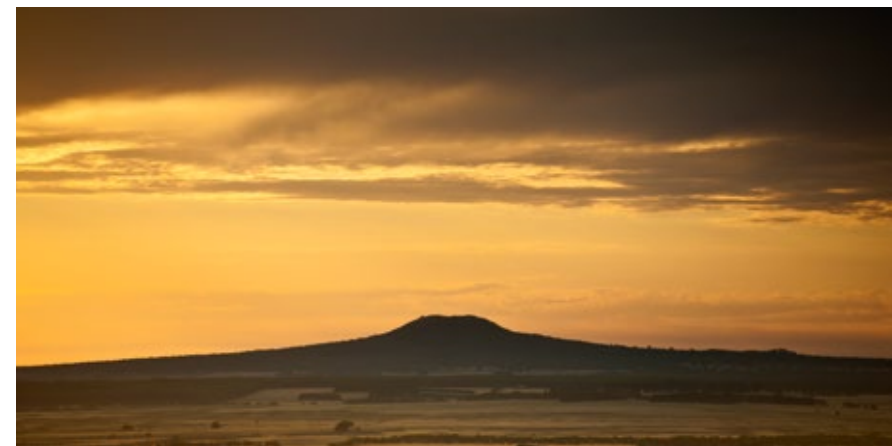
volcanics,” David says. “Our limitations are due to the volcanics and all our advantages are due to it, too. Being a maar, when it exploded, it shattered whatever the surface was, and it fell down around the top. So it is all quite fertile and friable soil there. It’s probably the best cropping soil in the area, but there’s just not much of it.” Even the rocky terrain originally caused by the lava flow is useful. “It’s good grazing land because it doesn’t get wet in winter,” David says. “It’s very good sheep country.”

Less than 40km south of Stockyard Hill, near Skipton, farmer Geoff Notman is also quite proud of the volcanic nature of his property. He owns Mt Widderin Station, named after the volcano that dominates his 810-hectare property. He runs Hereford cattle, Merino and crossbred sheep and does some cropping for fodder. About half of the property is dominated by lava caves, the remnants of a lava flow that once went all the way to the town of Derrinallum, approximately 20km south. “Lava was flowing down the hill and then was cooling, and the crust formed over the top. The lava kept flowing out underneath and left those hollow caverns,” Geoff says. Parts of the caves have collapsed at what used to be the entrance and now a small hole gives access to two large caverns. “My father bought the property and he was always very interested in protecting the caves as they were,” Geoff says.

“His idea was, and I guess I carried on the same thing, ‘They’ve been there for millions of years and who are we to change the whole structure of the caves by lighting them up or putting platforms in there or walking tracks?’ We just left it, but allow tourists to come.”

The caves are known as volcanic chamber caves. “We get quite a lot of geologists and speleologists from around the world because the caves are quite unique,” Geoff says. “There are four rare minerals found in the caves. One of the minerals is so rare that it’s only found here and on an island off Peru.”

Heading strictly west to Hamilton, near the southern end of the Grampians, the focus is on Mt Pierrepont and Mt Baimbridge. Both are old volcanoes that have been worn down to become an integral part of the landscape. It is difficult to imagine them as the fire-spewing mountains they once were. It is their legacy, however, that is of interest. Their volcanic soils, a product of millions of years of erosion, are great for growing grapes. Retired geomorphologist Peter Dixon established Henty Estate in 1991. He grows riesling, shiraz, chardonnay and cabernet sauvignon grapes. “There is a large belt of country that is undulating and it goes from a little bit to the east of Tarrington and through to the north of Hamilton,” Peter says. “It’s primarily soils formed from those volcanoes.



CLOCKWISE FROM TOP: Clunes, Vic; winemaker Peter Dixon from Henty Estate; Mt Napier, one of Victoria’s youngest volcanoes.



A confusing maze of volcanic rock pillars crown the top of Hanging Rock.

They are reddish-brown soils, which tell you that they've got certain iron compounds. That red iron oxide generally indicates that soils are very well drained. And that's a fundamental thing you require for grapes."

Driving south-east, Mt Rouse soon comes into view, shadowing the small town of Peshurst, which has become a place of pilgrimage for volcano enthusiasts. Opened in 2003, the Volcanoes Discovery Centre was established with the help of two government grants, and is run entirely by volunteers such as former teacher Val Rentsch. "We have 26 volunteers and I just recruited another two," Val says. "If we could get up to 35 we could open perhaps another couple of days a week." The centre's main audience, besides random visitors, is school groups, some from as far afield as Melbourne. "I believe in education," Val says. "It's paramount that this centre stays open. It's in the school curriculum now."

Nearby, Mt Napier includes a group of about 50 basalt mounds that rise like solidified bubbles up to 11m, and the Byaduk Caves, a large system of lava caves. And then there is Mt Eccles with its crater lake, lava canal and natural bridge.

The lava flow from Mt Rouse originally covered 511sq km all the way to Port Fairy. There, the shores of the Southern Ocean consist not of sandy beaches, but black volcanic rock, broken into boulders. Here, the route through the Newer Volcanic Province turns east to Tower Hill Wildlife Reserve, where visitors flock to watch

kangaroos, koalas, wallabies, echidnas, emus and a large array of birds. Although it is now peaceful and idyllic, this setting is the result of unimaginable violence. John Sutherland, a guide at Tower Hill, explains: "This volcano started about 35,000 years ago and erupted with a crater of about 3km in diameter. When the magma pushed up, it went into the groundwater." The collision of super hot magma with water had dramatic consequences. "Magma is over 1000 degrees Celsius," John says. "Water boils at 100°C and steam takes up 2000 times the space of water." The result was colossal explosions that created enormous ash clouds. At the rim of the crater, these ash layers are exposed for everyone to see.

On the way back to Melbourne, a short excursion leads to Noorat, the birthplace of writer and humanist Allan Marshall. For volcano enthusiasts, however, Mt Noorat, just behind the quiet town, is the destination. A short walk brings visitors to the rim of a perfect crater. From the top, with Mt Elephant to the north-east and Mt Warrnambool to the west, two other prominent volcanoes can be seen. Nearby is Lake Keilambete, a maar or crater lake. Maar volcanoes are concentrated around Camperdown, about 20km to the east. The largest of them is Lake Purrumbete. Further to the west, close to the shores of Lake Corangamite, lies the 8000-year-old Red Rock Volcanic Complex, which includes 20 bowl-shaped depressions, providing the final highlight before Melbourne on this geological journey. 