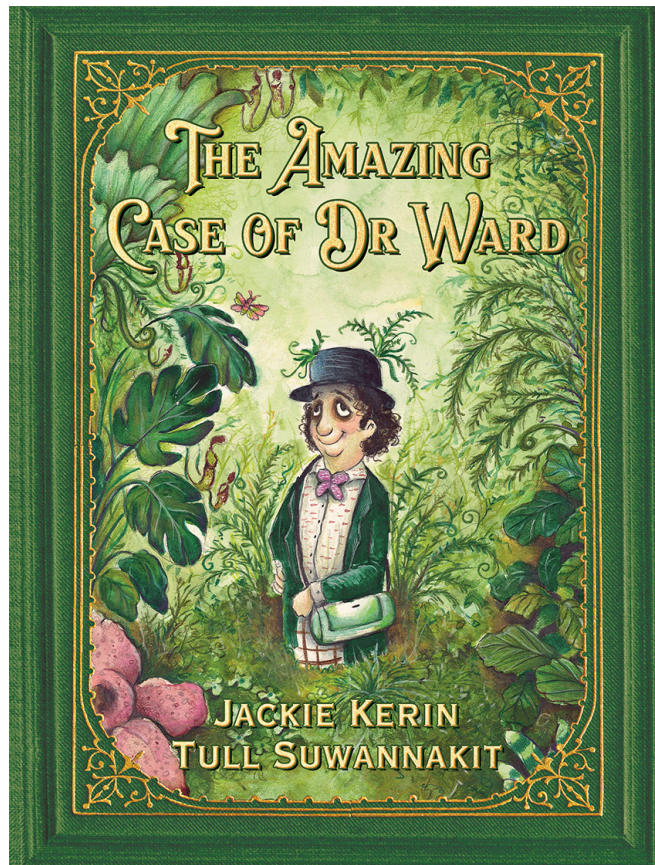


Teacher's Notes

The Amazing Case of Dr Ward

By Jackie Kerin and Tull Suwannakit



Target audience: 5 – 11-year-olds

Synopsis

When you peel a banana, or bite into a pear, when you smell a rose or scrape your knee climbing an old pine tree, do you ever wonder how these plants came to be in Australia?

In the days before aeroplanes, plants were moved around the world on board ships. However, salt spray, rats, even goats and monkeys usually destroyed them.

In 1833, a curious London doctor thought he had a solution to the problem but to be sure, he needed to conduct an experiment. His idea was to seal plants safely inside special glass and wooden cases and send them off on a ship to the Sydney

Botanic Gardens. Six months later the plants were delivered in good health. Dr Ward's experiment was a triumph. Within months, Wardian cases (named after the doctor) filled with thriving plants were being delivered around the globe; gardens, farms and the Australian landscape, for good or ill, was transformed forever.

It may be that the grapes you enjoy with your lunch are the descendants of plants that crossed the ocean in one of Dr Ward's amazing cases.

Key Points

- A story to inspire young gardeners and citizen scientists
- An important story raising questions about changes to the Australian landscape since colonisation
- A tale that weaves its way across oceans and continents
- Stunning illustrations of weird and wonderful plants from around the world
- Rich botanical language, use of maps and letter writing
- A magical author and illustrator combination bringing wit and warmth to a true story.

About the Author

Jackie Kerin is as passionate about telling stories as she is writing them. Her stories reflect her interest in nature and history. With a love of language and the heart-felt, she has a deep interest in using her skills to bring people, especially children, closer to nature, to support their curiosity and encourage them to become agents for a better, kinder world. Jackie loves gardening, walking in the Australian bush and visiting botanical gardens wherever she finds them.

Publications

- *GOLD!* Illustrated by Annie White, Published by Ford Street Publishing
- *Lyrebird! a true story.* Illustrated by Peter Gouldthorpe. Published by Museum Victoria (CBCA Honour Book and Whitley Awards Certificate of Commendation)
- *Phar Lap the Wonderhorse.* Illustrated by Patricia Mullins. Published by Museum Victoria (Eve Pownall Award CBCA Notable)

For more information about Jackie visit: jackiekerin.com.au

About the Illustrator

Tull Suwannakit is an Australian book illustrator and author for children with a background in animation and fine art. His books have been published in Australia, the USA, the United Kingdom and Thailand, as well as being translated into numerous languages throughout the world.

When Tull is not writing and illustrating his books, he runs art classes and workshops for children and adults at his art school in Melbourne, Malvern School of Art. malvernschoolofart.com.au

For more information about Tull Suwannakit, visit tullsuwannakit.net

Publications

- *Heart and Soul* by Carol Ann Martin, Published by Scholastic Press
- *Morphing Murphy* by Robert Favetto, Published by Ford Street Publishing
- *Thimble* by Rebecca Young, Published by Scholastic Press
- *The Little Stowaway* by Vicki Bennett, Published by Scholastic Press
- *Stanley's Learning the Trumpet* by John Field, Published by Scholastic Press
- *Sad the Dog* by Sandy Fussell, Published by Walker Books Australia/Candlewick Press USA
- *What Happens Next* by Tull Suwannakit, Published by Walker Books Australia/Walker Books UK

Illustration Style for *The Amazing Case of Dr Ward*

For *The Amazing Case of Dr Ward*, Tull chose to use mainly watercolour, coloured pencils, mixed media and collage. In some of the illustrations, he created a collage of individually cut out illustrated leaves pasted on top of one another. This has added a slightly embossed layer and depth to the overall composition. In addition to historical references provided by Jackie, Tull has drawn inspiration from his own indoor plant collection.

Jackie's Inspiration

When I was young, I had guinea pigs and in addition to the lettuce and carrot I gave them, there was a seed mix that included sunflower seeds. When I cleaned out the hutch, I'd throw the old straw and uneaten food onto the garden. And so, it was by accident, I grew a magnificent crop of golden sunflowers. From that time on, I loved to grow plants.

When I was in primary school, we moved a lot, but wherever we lived, I made a garden. Over time, I became aware that many of the plants I grew had originally come from different places around the world. Questions began to nag me. What did Australia look like before the introduced plants, how did they get here, and where did they originally come from?

I've never stopped gardening. My city garden has plants for the insects and birds, shade and scented flowers for me, grasses and trees that remind me of the Australian bush, fruits and vegetables for family and friends and silver leafed plants that glow under moonlight. When I walk around my garden, I see plants from China, Japan, Mexico, India, New Zealand and South America, growing alongside beautiful Australian grasses and nectar-filled flowers.

The Main Characters

Dr Ward

Dr Ward's full name was Nathaniel Bagshaw Ward. He was born in London in 1791 and from an early age, he was fascinated by plants.

Although Dr Ward's invention is well known, not a lot is known about him. With his wife Charlotte, it seems he had four sons and five daughters. He loved to experiment with growing plants from around the world. He even wrote a book about his experiments with the rather long title: *On the Growth of Plants in Closely Glazed Cases*, published in 1842. His experiments sparked a craze for growing plants in terrariums – an interest that has never gone out of fashion.

After reading Dr Ward's book, I imagined he had plants growing in every room of his London home, up the staircase and even on the roof. I wonder how Mrs Ward and the nine children felt about living in a forest.

Captain Mallard

Captain Mallard sailed several times from London to Australia. Sailing in the 1800s was dangerous and those in command of the ships were not always reliable and honest. However, it seems that Captain Mallard had a good reputation.

Captain Mallard was also interested in plants and was enthusiastic about Dr Ward's experiment. As he sailed, he took great care of the cases and made detailed notes about the weather and temperature. Mrs Mallard sailed with her husband on the journey in 1833. I wonder if she also took notes and made observations.

THEMES

- Colonisation
- Environment
- Botany
- History
- Invention
- Curiosity

KEY LEARNING OUTCOMES

- Recognise how the Australian landscape has been changed by the introduction of plants from around the world
- Comprehend that the fruits and vegetables we commonly eat are not Australian but were introduced.
- Understand that plants have scientific and common names
- Appreciate the importance of observation and experimentation in gaining knowledge

- Realise the role that ordinary citizens play in advancing science

KEY CURRICULUM AREAS

- History
- English
- Science
- Art

CLASSROOM DISCUSSIONS, QUESTIONS AND ACTIVITIES

HISTORY

Discussion

- When the colonists came to Australia, they changed the landscape, introduced new plants and animals and often renamed the waterways and landforms. Who are the Traditional Custodians of the place where you live?
- Some of the plants and animals the colonists introduced have become pests – they are sometimes called ‘feral’ or ‘invasive’. What can you learn about these animals and plants?
- What caused the air pollution in London that made it impossible for young Nathaniel to grow a garden?
- Explore shipping in the 1800s. Look at the trade routes. What does it mean to ‘round The Horn’? Why was it so dangerous?
- Tull has created a fun map for Captain Mallard but you will have help him navigate his way to Australia and back again. (Activity attached).

Activities

- What other books can you find that include information about Australian plants?
- Invite a Traditional Custodian to your school to talk about the landscape before colonisation.
- Some Botanic Gardens offer interpretive walks including activities and an introduction to bush foods.
- Create a poster showing some Australian bush foods and some introduced fruit vegetables and grains.
- Many women were known for their plant hunting skills. What can you find out about Ellis Rowan, Marianne North and Maria Sibylla Merian?

ENGLISH

Discussion

- The title of the book is *The Amazing Case of Dr Ward*. ‘Case’ is a word that can mean many things. How many ways can you think of to use the word ‘case’?

- What sort of 'case' do think the title is referring to?
- *The Amazing Case of Dr Ward* is based on a true story. What is the difference between fiction and non-fiction?
- Who is the author and who is the illustrator?
- Who is the publisher and what does a publisher do? [The Amazing Case of Dr Ward is published by FORD STREET. A publisher brings all the pieces of the book jigsaw together. They may edit or give advice on the story and illustrations; they make sure everyone is getting the job done in time. When the book has been set out and the author and illustrator are happy, the publisher will send it off to the printer. The book is then advertised and sold.]
- Nathaniel liked learning the scientific names of plants. Why are these names so important? [The scientific names of plants are recognized by botanists, horticulturists and gardeners everywhere in the world no matter what language is spoken.]

Activities

- In the 1830s there were no phones and no Internet, and people wrote letters to each other. Captain Mallard wrote to Dr Ward to tell him his plants had arrived safely. How is a letter set out on the page, addressed and posted? Write a letter to someone in the class.
- How would you describe Nathaniel's character and personality to a friend?
- Much of the story about Wardian cases was researched in old newspapers available online. Newspapers were once a popular way of spreading stories that were considered important. Have a go at making a class newspaper. Don't forget to include an item about plants!
- Find a plant, draw it and describe it in as much detail as you can. Imagine the person reading the description will never see, touch or smell it. Perhaps it's a rose: does it have thorns, what colour is it, does it have a perfume, what are the leaves like?

SCIENCE

Discussion

- When young Nathaniel goes plant hunting, he takes his insect net, flower press and vasculum. Can you find these things in the illustrations? What do you think they are for?
- What is the difference between a tree, vine and shrub?
- What is a vineyard and orchard?
- Why in Australia don't we eat more local indigenous plants?
- What is the difference between tropical and desert environments?
- Some plants are annuals or biennial and some are perennial. What is the difference?
- Explore the language and examples of plant propagation: cutting, bulb, roots, seeds, rhizomes, etc.

Activities

When working with plants, remember that some have irritating sap (especially plants with milky white sap), sharp thorns and some are poisonous. Take care and always wash your hands after working with plants and soil.

- Visit a Botanic Garden.
- Research and make a flower press.
- Create a garden with Australian plants.
- Identify and label the plants in your school. What countries do they originally come from, or what part of Australia? What is the indigenous, common and scientific name of the plant? What does the plant provide for humans and other animals? (For example: nectar for birds, wood for building, shade, hollows for wild animals.)
- Research the local edible indigenous plants – they vary around Australia.
- Contact the local group that propagates seedlings for habitat re-vegetation and get involved.
- Experiment with growing plants in glass containers (terrariums).
- Try growing different kinds of plants in the classroom: a fern, a succulent and a bulb. Research the best ones to grow, making sure to avoid plants that are poisonous, pollens that could cause hay fever or asthma, or skin irritations.
- Raise some caterpillars in the classroom. You can order kits to help you. Observe and keep notes about their development.
- Watch *Gardening Australia*. There are presenters on Gardening Australia from many states and regions; maybe you could invite one of them to your school.
- Grow a vegetable garden at school.

Some online resources for exploring plant science

Plant facts

- <https://science4fun.info/plants/>
- <https://www.scienceforkidsclub.com/plant-structure.html>
- <https://www.theschoolrun.com/learning-about-plants-in-primary-school>

Make a terrarium

- <https://climatekids.nasa.gov/mini-garden/>

ART

- Many artists specialise in painting and drawing plants. Before photography, painting plants was the only way people could see plants from faraway places.
- Look at the work of Ellis Rowan, Marianne North and Maria Sibylla Merian. Research others.

- How are, or were, plants painted in India, the Middle East, South East Asia and Ancient Egypt?
- Using old gardening magazines, cut out plants and create a collage.
- Tull has created some colouring activities for you to enjoy, including a Wardian case waiting to be filled with beautiful Australian flowers.
(Activities attached)

**AND SOMETHING ESPECIALLY FOR THE TEACHER, WHO BY NOW IS
HOPELESSLY ADDICTED TO LEARNING MORE ABOUT DR WARD'S AMAZING
CASE.**

The Wardian Case. How a Simple Box Moved Plants and Changed the World by
Luke Keogh

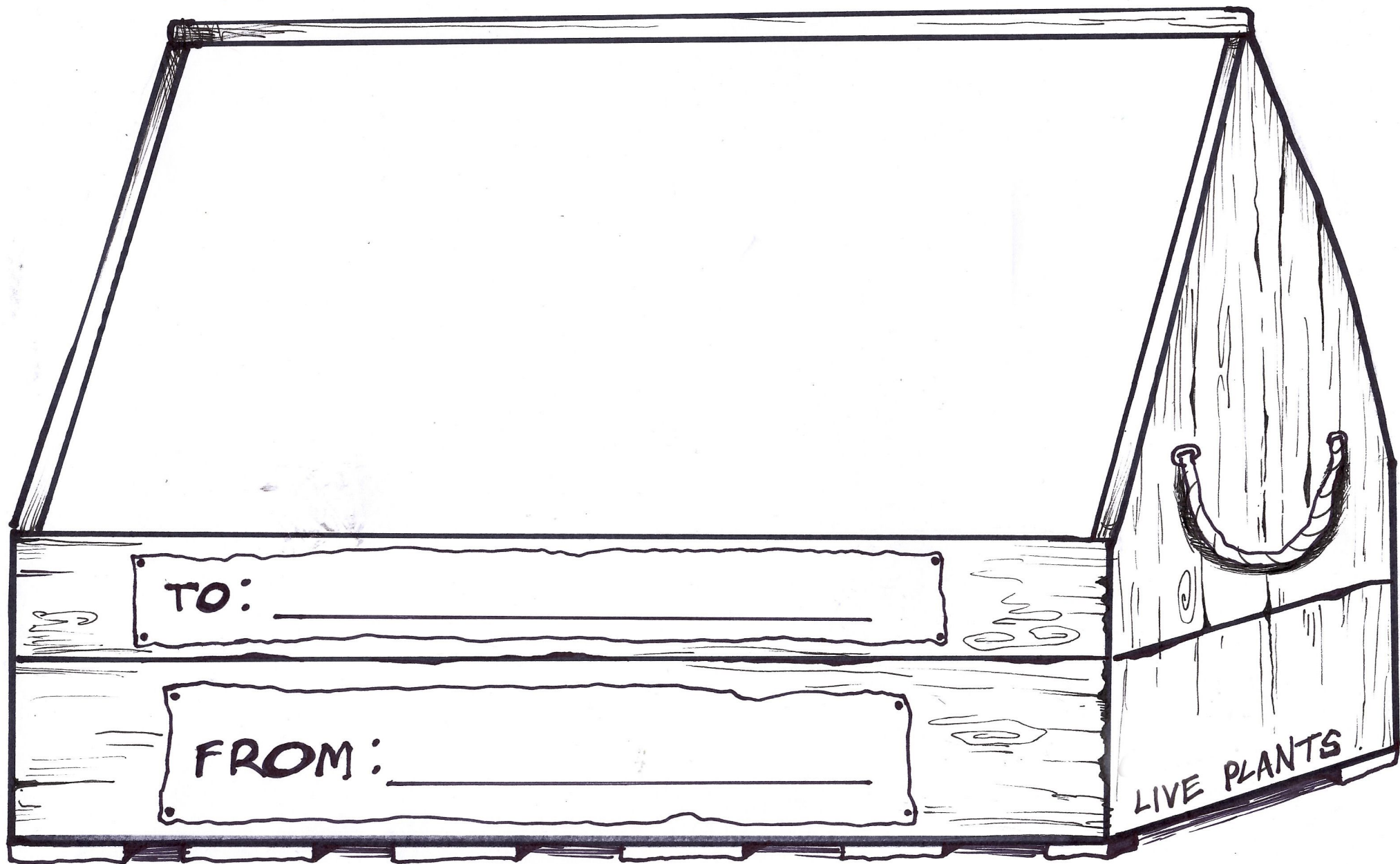
Captain Mallard's Map

Captain Mallard must locate the oceans and continents and then plot his course around the world.



1. Indian Ocean
2. Pacific Ocean
3. Atlantic Ocean
4. Australia
5. Britain
6. Europe
7. North America
8. South America
9. Africa
10. Asia
11. Greenland
12. The Equator



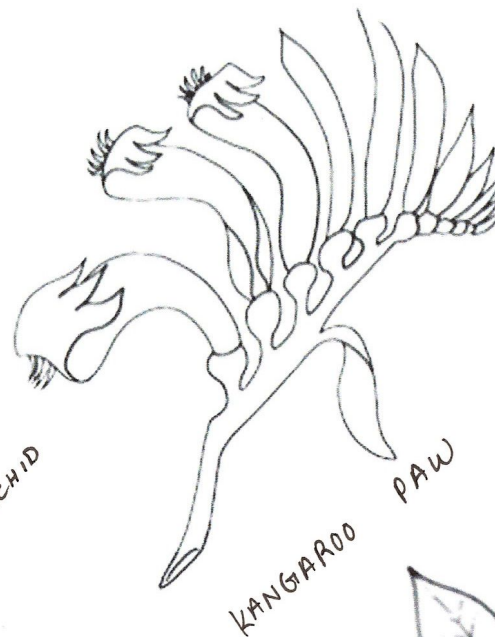




WARATAH



COOKTOWN ORCHID



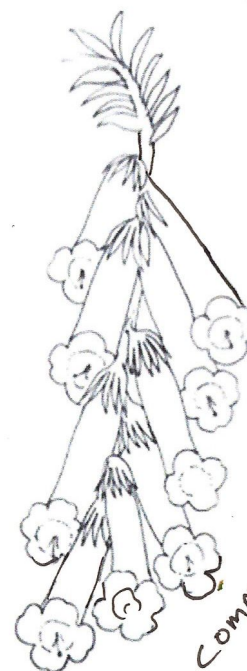
KANGAROO PAW



STURT'S DESERT ROSE



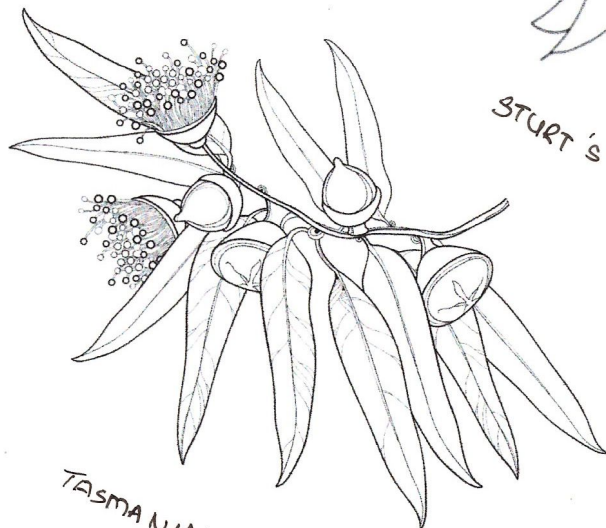
STURT'S DESERT PEA



COMMON HEATH



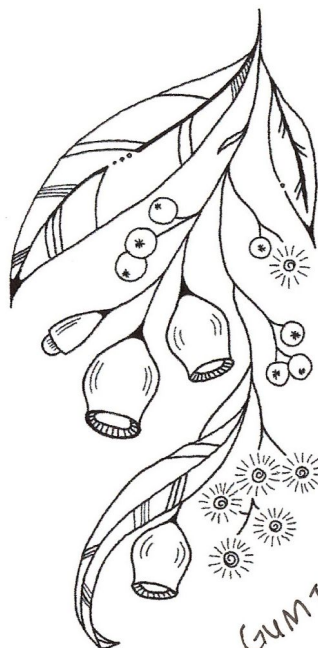
ROYAL BLUE BELL



TASMANIAN BLUE GUM



CHRISTMAS
BELL



GUMTREE NUTS



FLANNEL FLOWERS



BANKSIA



FLAME GREVILLEA



GOLDEN WATTLE