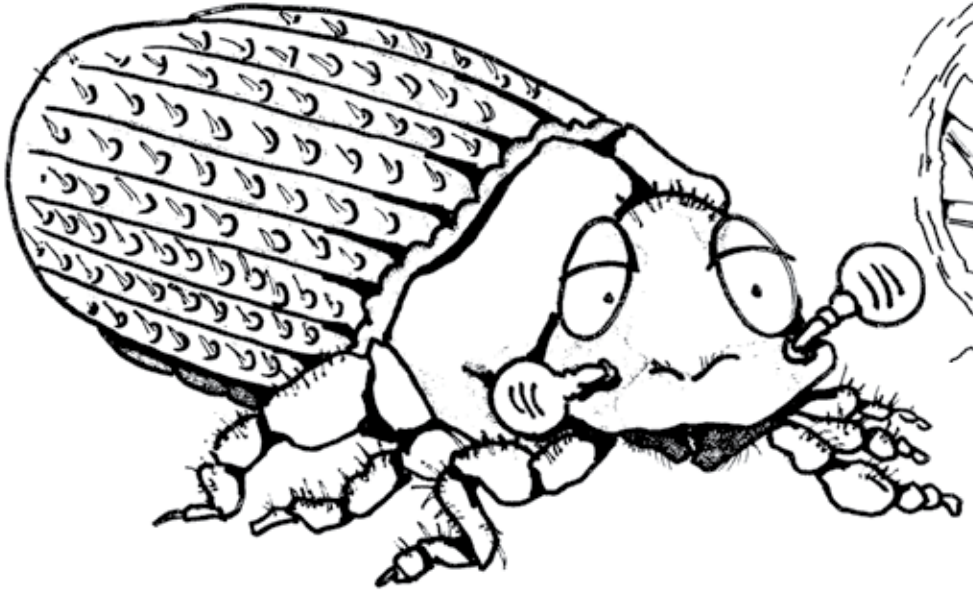
A Year in the Life of a

MOUNTAIN PINE BEETLE

By: Buford the Mountain Pine Beetle



Colorado State FOREST SERVICE

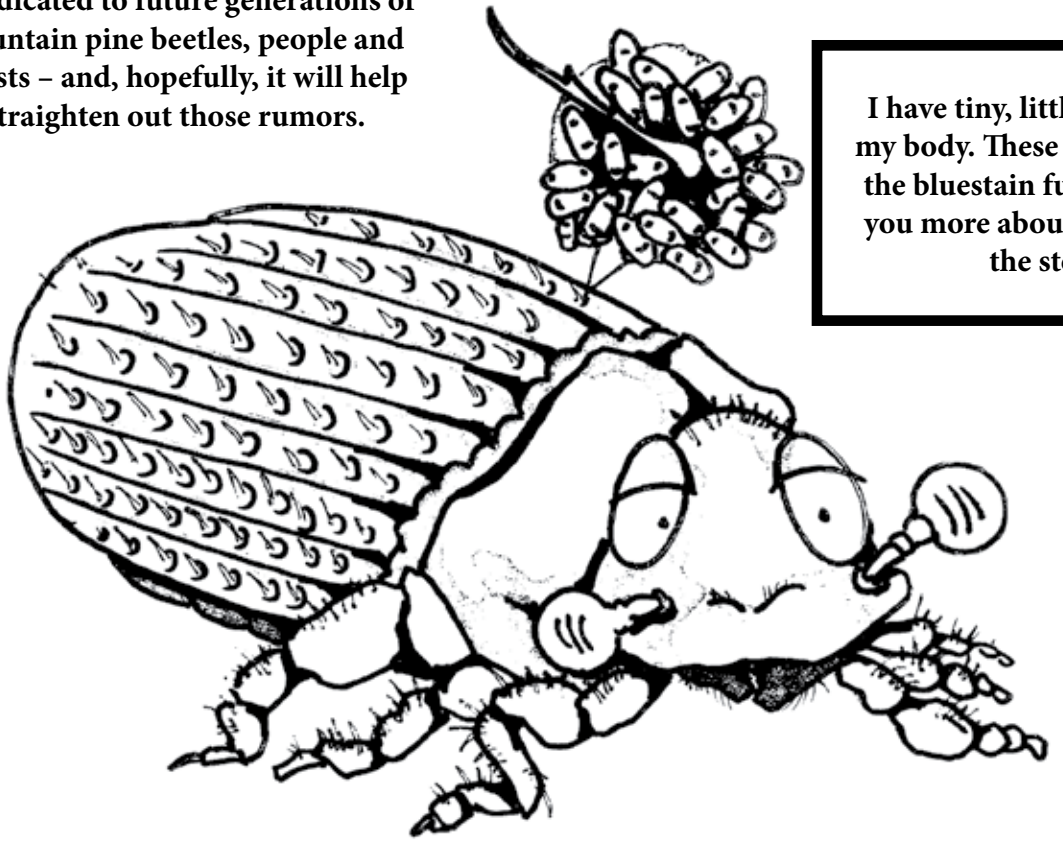
The mission of the Colorado State Forest Service is to provide for the stewardship of forest resources and to reduce related risks to life, property and the environment for the benefit of present and future generations.

Written and Prepared by Lisa Mason and Ingrid Aguayo
Illustrated by Mary Ann Bonnell

A very special thanks to Dave Leatherman, retired Colorado State Forest Service entomologist, for bringing Buford and Bernadette to life — and for sharing his knowledge of mountain pine beetles and his passion for forestry with the citizens of Colorado for over 30 years.

Well, hello there. My name is Buford. I am a mountain pine beetle!

I wrote this autobiography because I have noticed that humans often misunderstand our species. This book is dedicated to future generations of mountain pine beetles, people and forests – and, hopefully, it will help straighten out those rumors.



I have tiny, little grooves on my body. These grooves carry the bluestain fungus. I'll tell you more about that later in the story.

We mountain pine beetles, play a very important role in our forests. We infest and kill older, larger, stressed trees. This allows more sunlight, nutrients and water to reach smaller trees and help them grow.

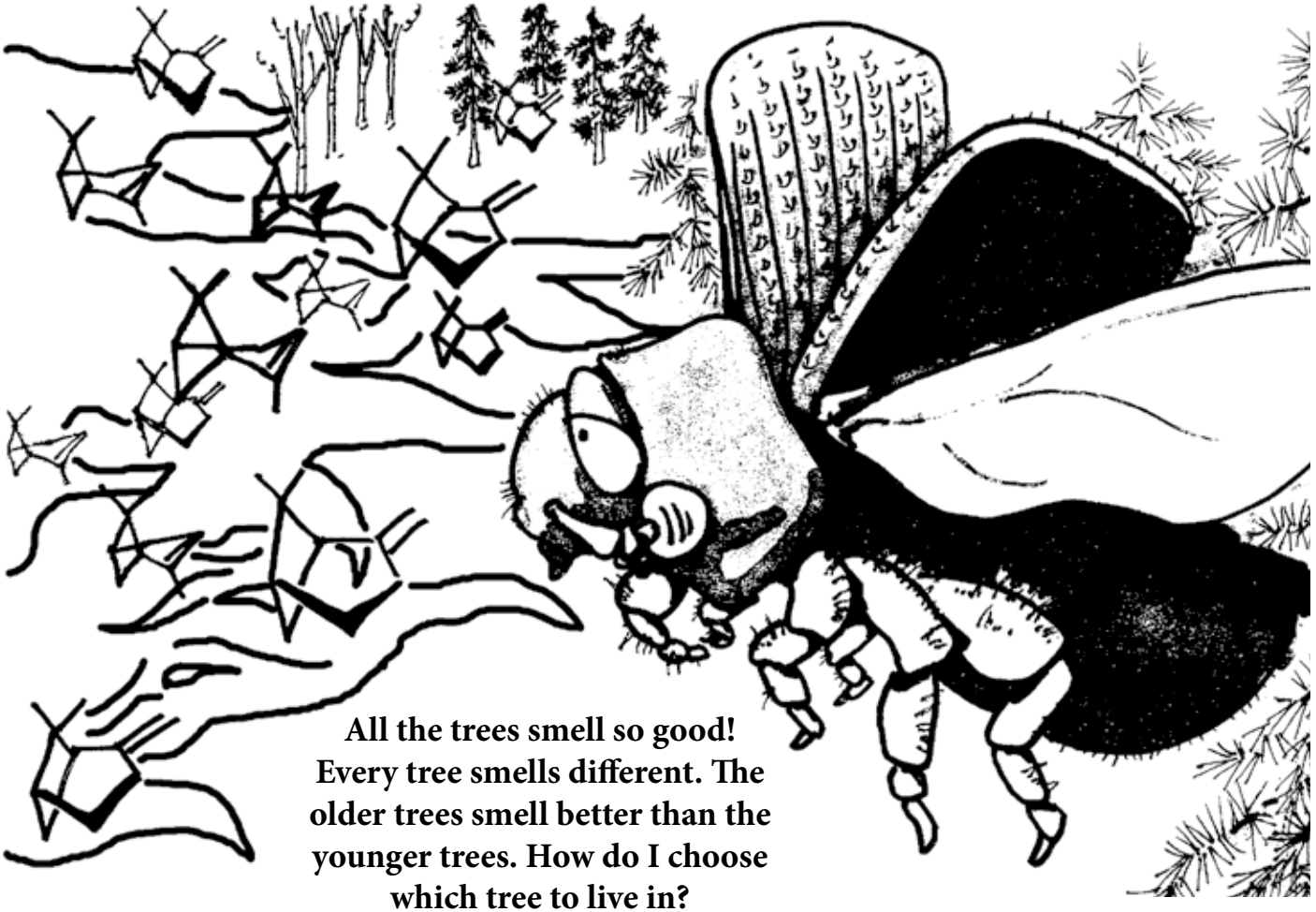
My distant relatives include ladybugs and all other species of beetles. Mountain pine beetles are native to Colorado. We have been here for thousands of years!

Here is a picture of me. I just became an adult beetle after almost a year of eating and growing. It's time for me to leave the tree I grew up in, so I can find a new host tree and a mate.

Like the rest of my family, I live under the bark of trees. We like to live in different types of trees including ponderosa pine, lodgepole pine, limber pine, and bristlecone pine. My family prefers to live in lodgepole pines.

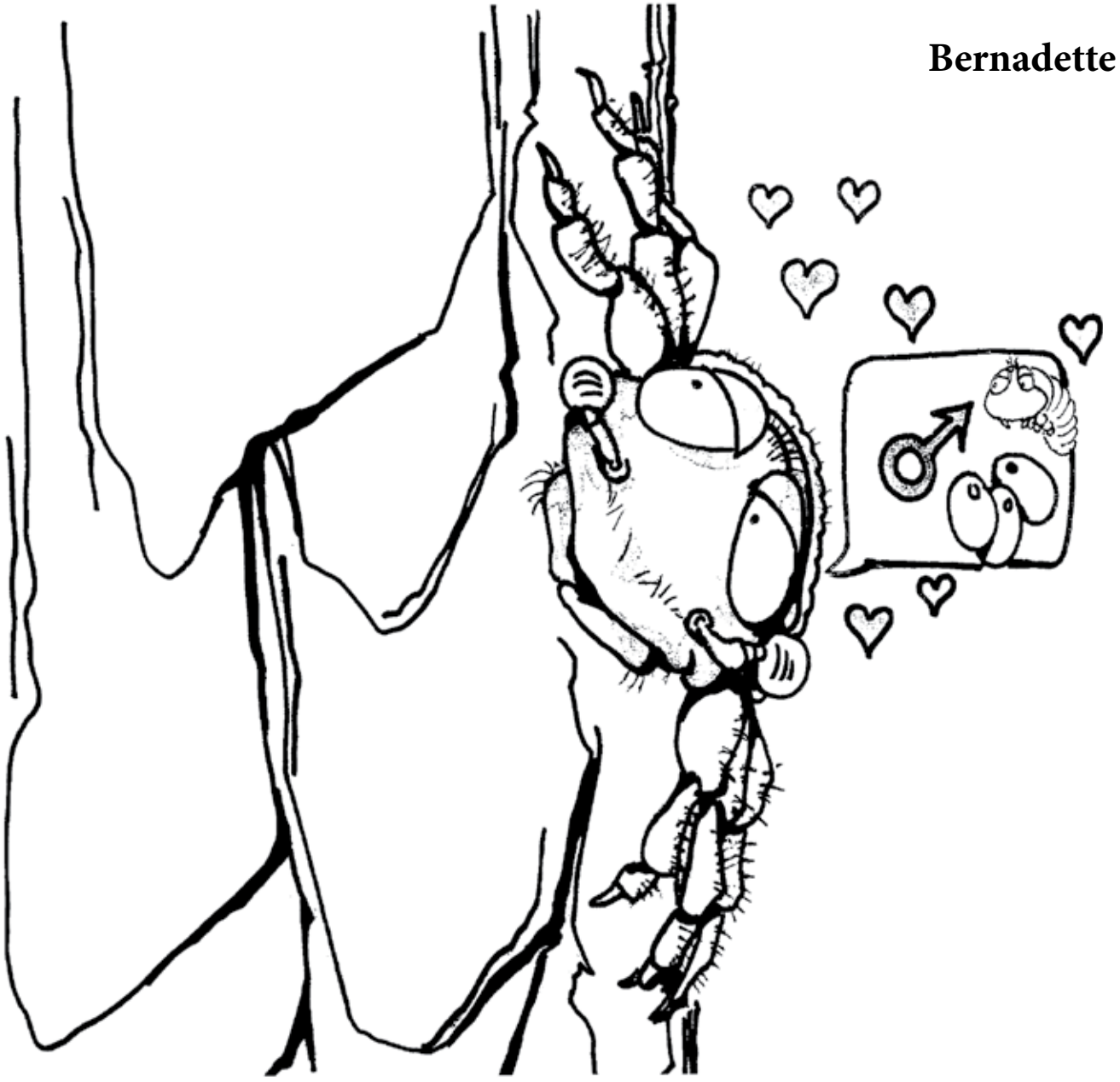
This was my first look at the real world. It's now time for me to take flight and find a new host tree. My instincts told me to find a large, old, or stressed-out tree. How did I find the right tree?

I looked for wide, vertical lines, hoping for a tree. It took awhile. I accidentally ran into a human during my flight, but I didn't hurt him.

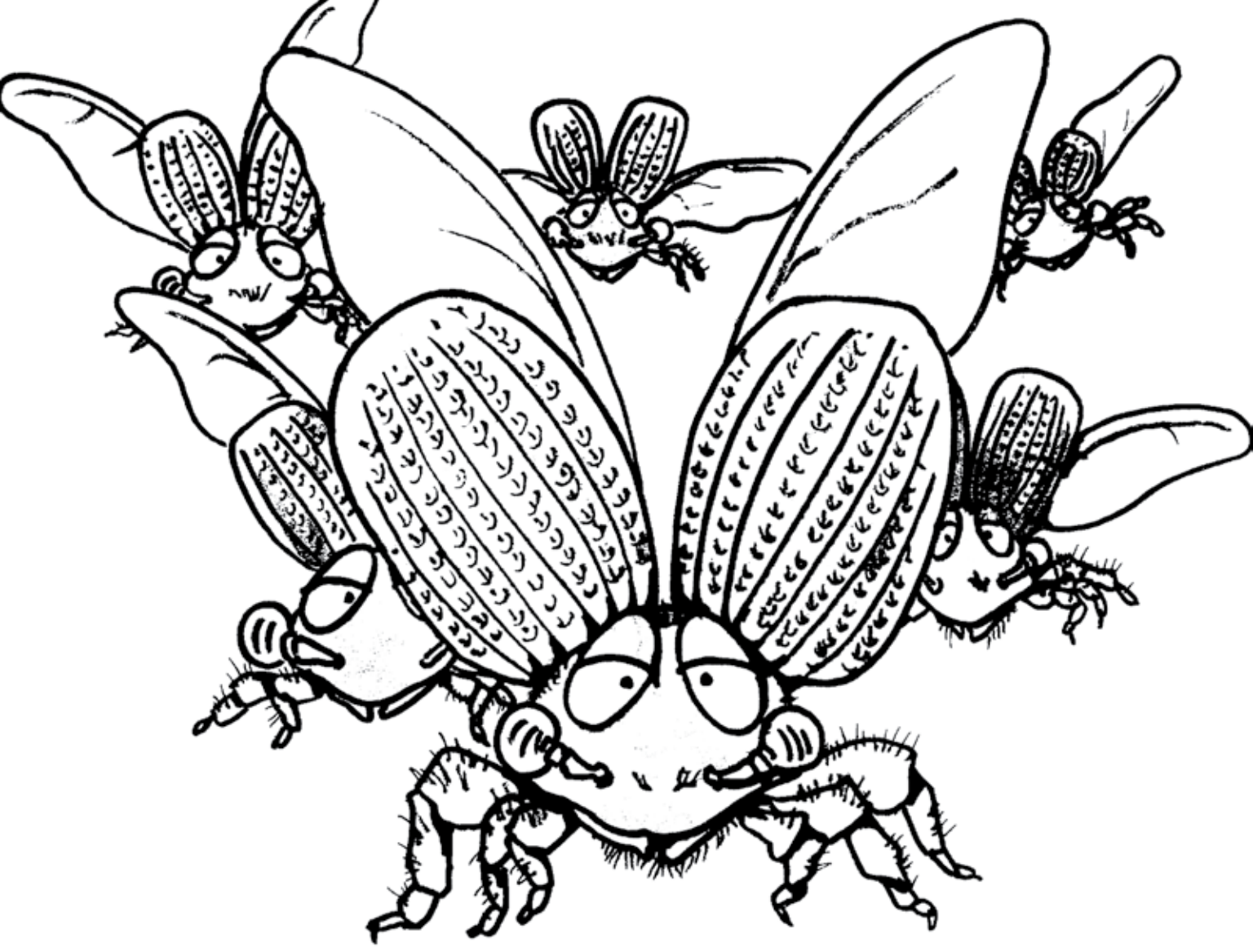


All the trees smell so good! Every tree smells different. The older trees smell better than the younger trees. How do I choose which tree to live in?

We usually live about one year. During the course of our lives, we go through a complete metamorphosis. Butterflies go through the same cycle. We start off as an egg, and then hatch into a little larva. After hanging out as a pupa, we become adults. This cycle all happens in the protected area under the bark of a tree.

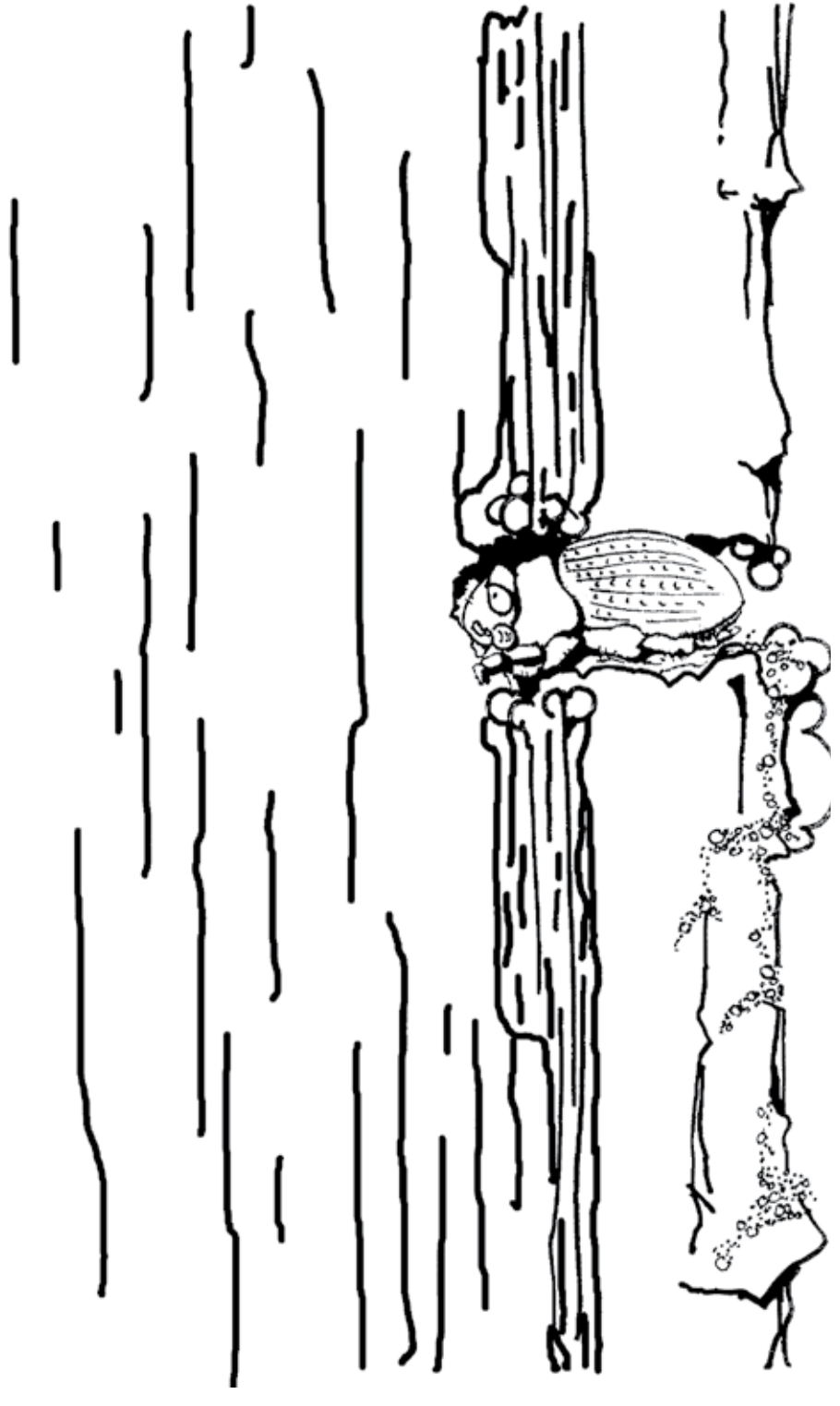


In the meantime, my future mate, Bernadette, has already found a tree to call home. This tree will provide food for our future children.



So many trees...Bernadette, here I come!

Once my fellow beetles and I find a tree, we crawl into the bark. This can be hard because the tree tries to keep us out! The tree produces sap or resin to prevent us from entering. Healthy trees have stronger defenses. This is why we like trees that are older and stressed out.

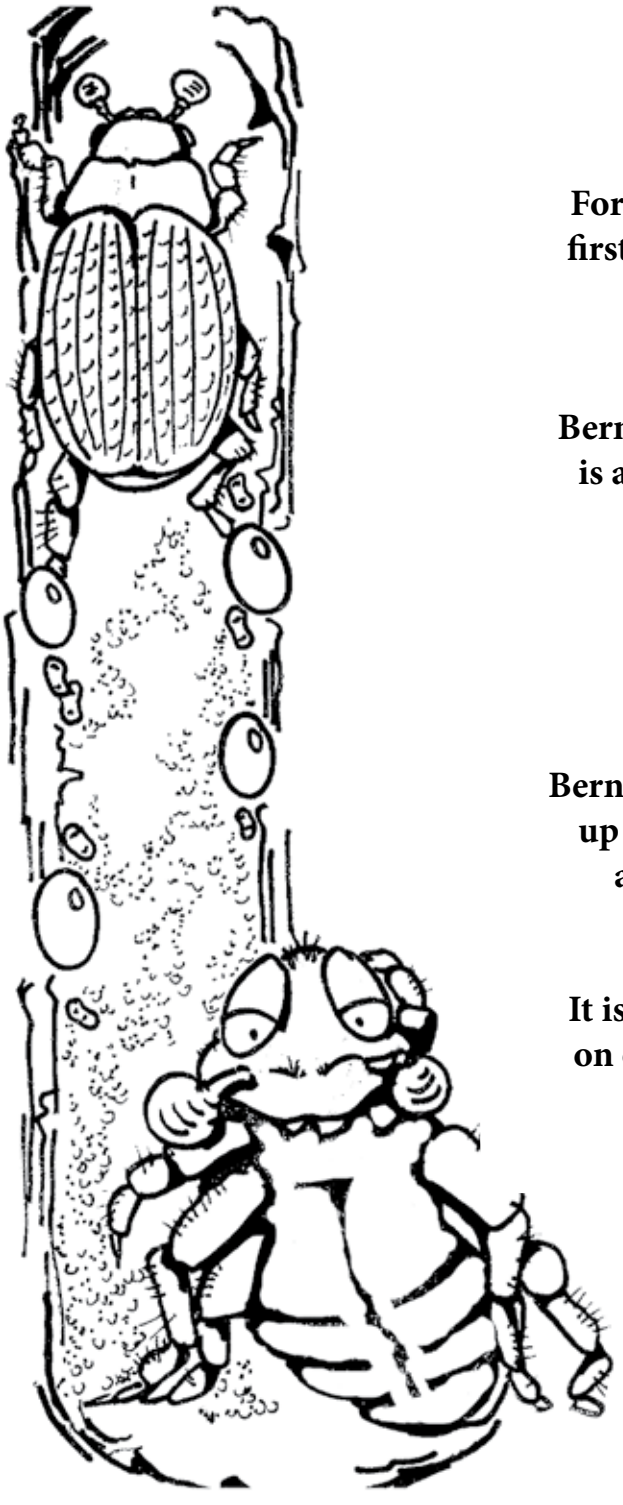


Bernadette has already entered the tree.

Look at her go!

Once Bernadette was inside the tree, she started producing a good smell so I could find her. This smell also attracts other male beetles, so I had a lot of competition. Many other beetles made their home in the same tree. Together, all the beetles helped overcome the tree's defenses.

A tree has limited food and can hold only so many of us. When a tree is full, we send out a smell that repels other beetles. They will have to find another tree for their family.



For Bernadette and me, it was love at first sight! We got to know each other beneath the bark.

Bernadette made an egg gallery, which is a tunnel in the bark we call home. She is a hard worker!

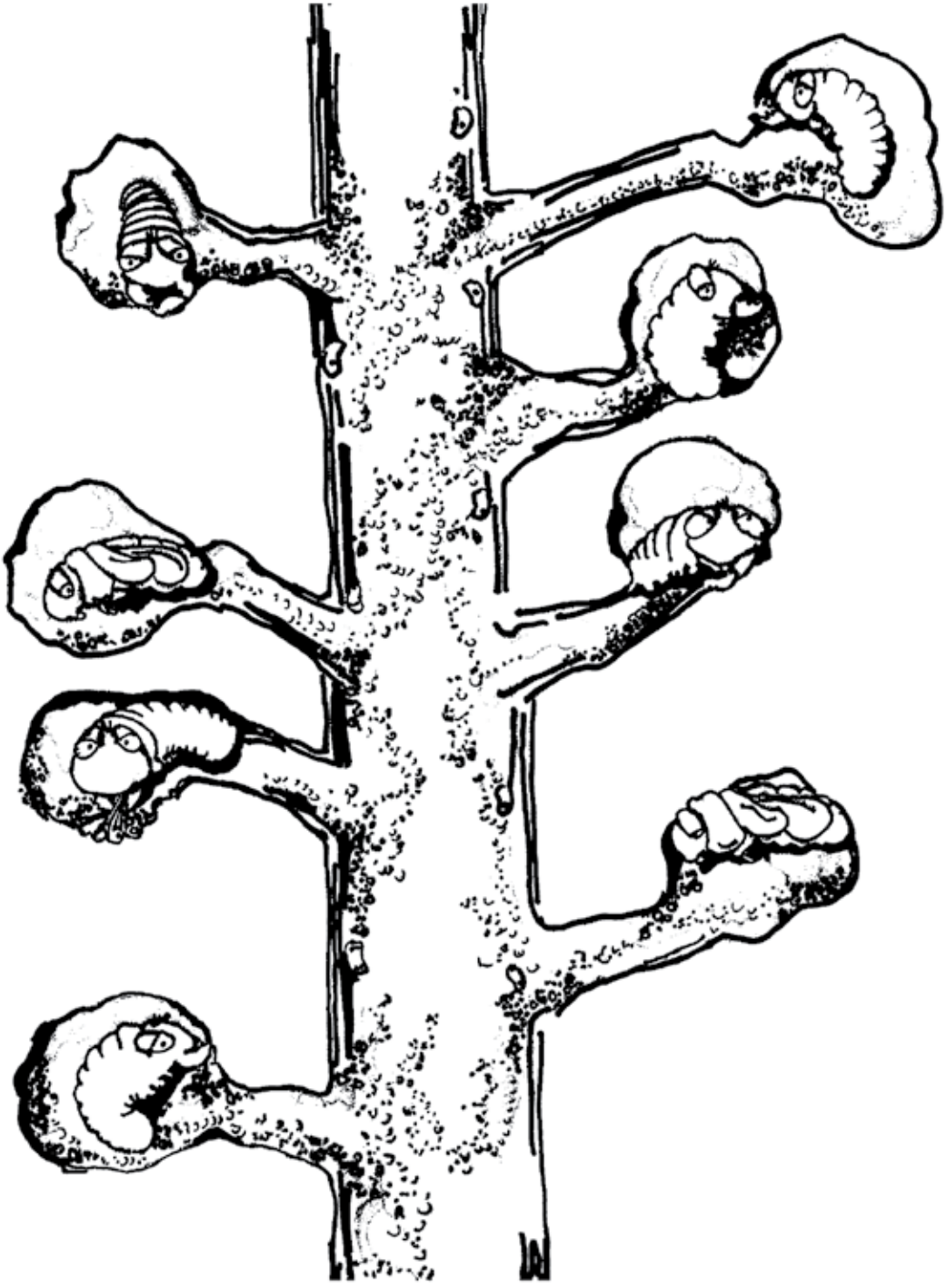
After building our home, complete with a nursery, Bernadette crawls up the trunk and lays up to 75 eggs. After this, Bernadette and I will not live much longer.

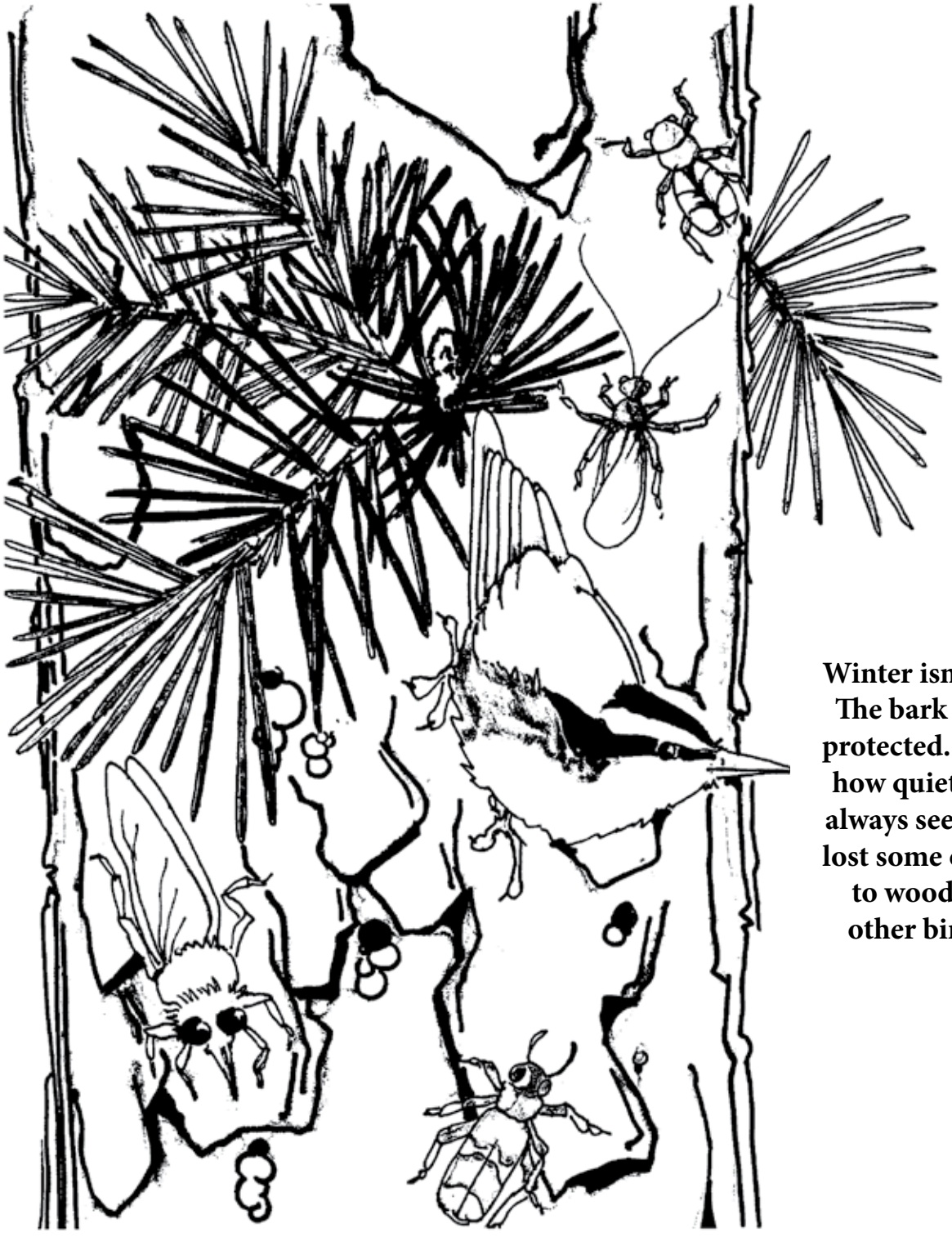
It is time for Bernadette and I to pass on our legacy to our children, whose lives are just beginning.

Here are pictures of my wonderful children growing. They hatched into larvae.

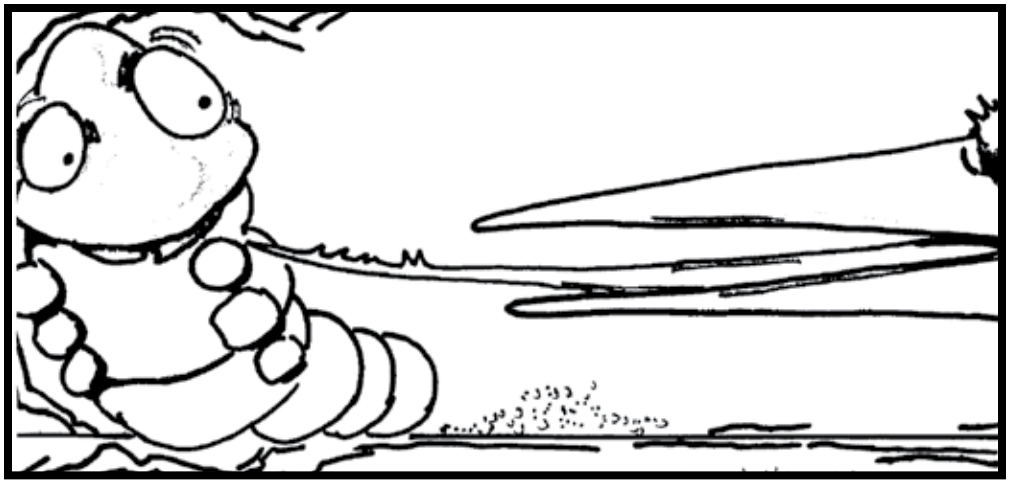
The tunnels they are burrowing in are called galleries. They are preparing for winter.

Did you know that mountain pine beetles can survive when temperatures reach almost -40 degrees Fahrenheit?



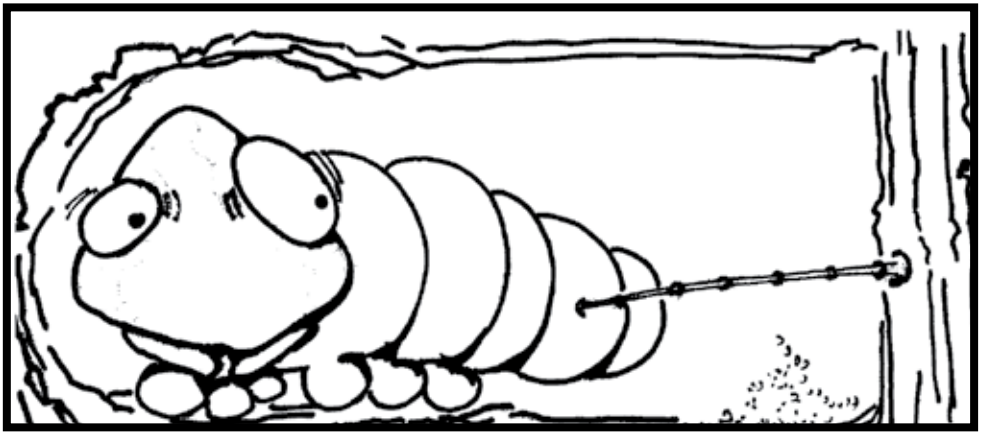


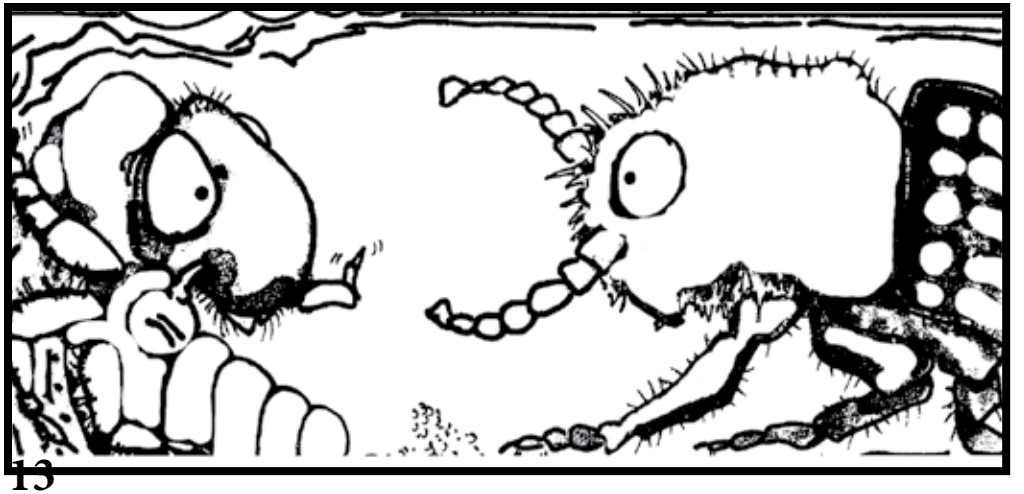
Winter isn't all that easy. The bark helps keep us protected. But no matter how quiet we are, birds always seem to find us. I lost some of my children to woodpeckers and other birds this year.



Unfortunately, woodpeckers are not our only enemy.

Tiny predatory wasps like to eat mountain pine beetle larvae.



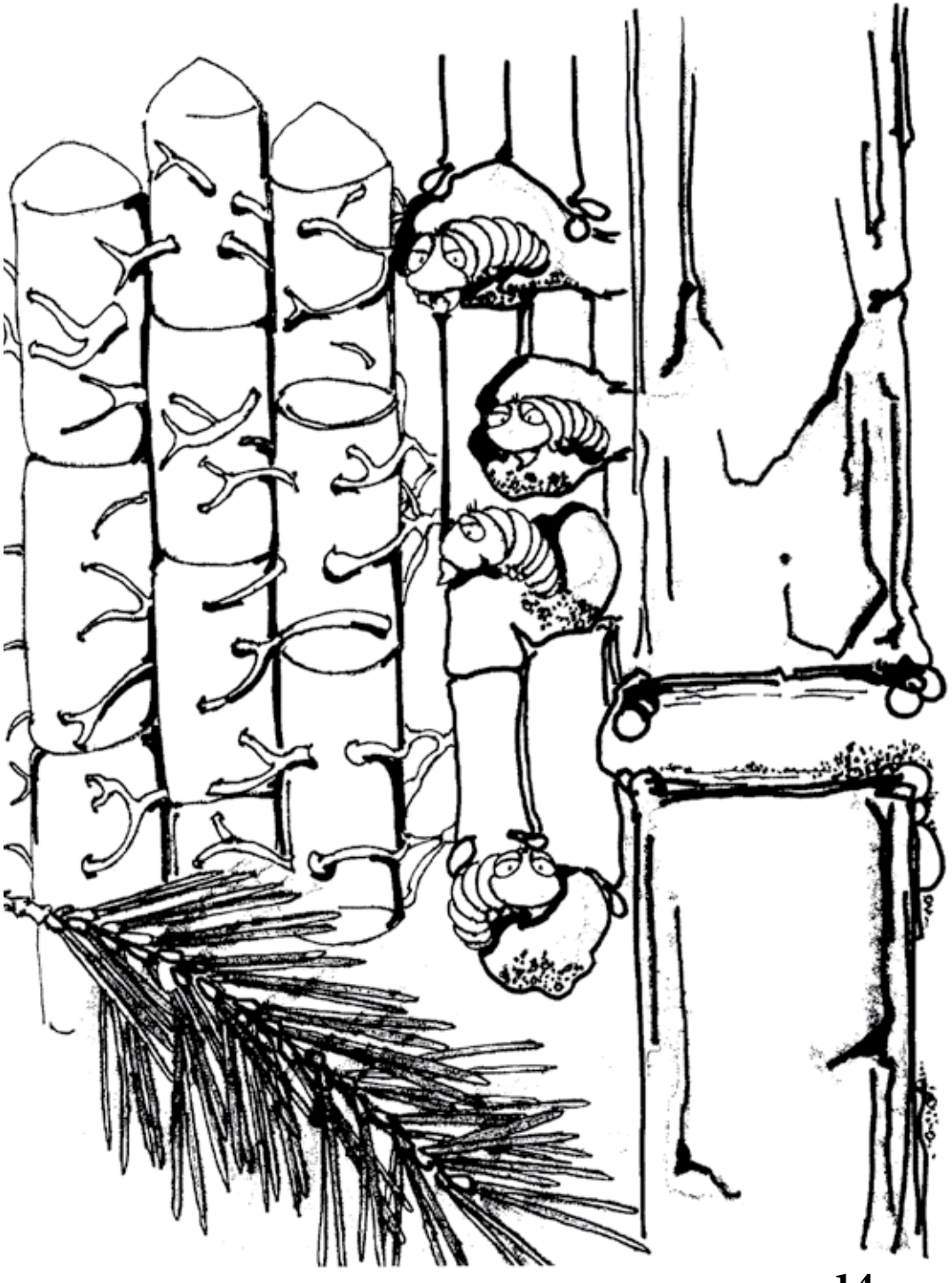


Other predatory beetles also like to prey on us for dinner.

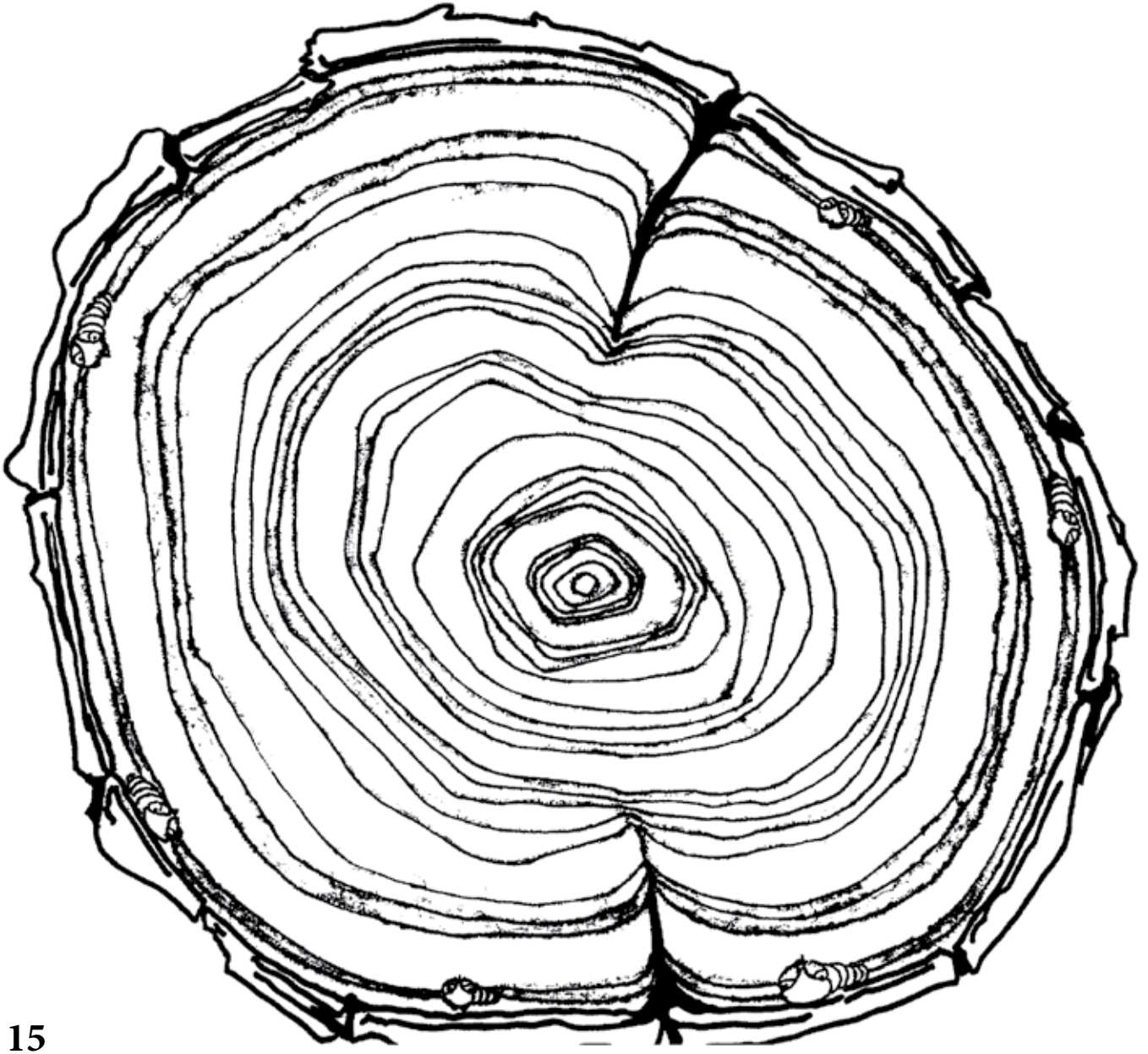
Remember the beginning of the story when I mentioned the great relationship we have with bluestain fungi?

As beetles enter the tree, they leave fungi spores along the tunnels they bore.

The fungi start growing the moment the beetle enters the tree. This can provide food for our young. The fungi also turns the wood blue! The fungi hitch a ride with us, and provide our teenagers with food.

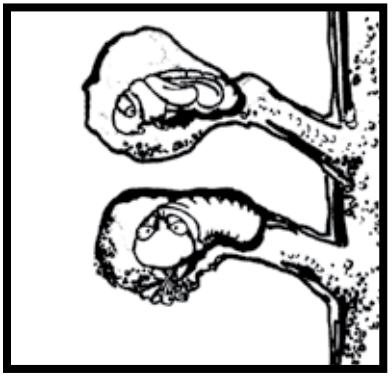


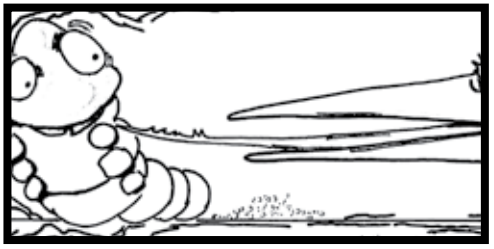
This is called a tree cookie! But you sure wouldn't want to eat this cookie. It is a cross-section of a tree trunk. Can you color in the blue stain fungus? Do you see our children feeding on the tree?

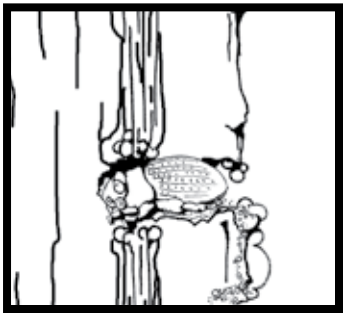


This concludes my life story. We mountain pine beetles play a very important part in a forest. Mountain pine beetles can sense when trees are getting old, and it is time for a new forest. After living and feeding in the old trees, they will die, which makes room for the new trees. The new forest will have lots of space for water nutrients and sunlight. The old, dead trees provide new homes for animals and other insects. With new trees, there is new life and more oxygen. It is one of the many cycles in nature. We depend on the trees, and the trees depend on us. Nature is a dynamic and beautiful process!

Humans can sometimes reduce the risk of our populations growing so large that we kill most trees. This can be done through careful forest management by creating a more diverse forest with different tree species and different ages. That way there will always be green forests for humans to use and enjoy and we will continue to have a home and survive as one of Colorado's native species.







For more information on the Colorado State Forest Service or the mountain pine beetle: www.csfs.colostate.edu