

GOPHER TRACKS

**Written by
Susan Jane Ryan**

**Illustrated by
Sandra G. Cook**

**Florida State University
Tallahassee, Florida**

**CHILDREN'S LANGUAGE ARTS & SCIENCE
PROJECT
ENERGY: IT'S ELEMENTARY**

PROJECT STAFF

Susan Ayars, Workshop Coordinator
Maggie Ayo, Business Manager
Edna Brabham, Project Administrator
Paula Donaldson, Associate Director
David E. LaHart, Director

Project Consultants/Writers

Edna Brabham
Gerald Cole
David E. LaHart
Susan Jane Ryan
Susan Toth-King

For more information about energy education programs,
contact:

Energy & Environmental Alliance
Institute of Science and Public Affairs
Florida State University
Tallahassee, Florida 32306-2641

Copyright 1998 by Florida State University.
This Project is supported by the U.S. Department of Energy, Grant # DE-FG44-77CS-60210. However, any findings, conclusions, or recommendations expressed herein are those of the authors and do not necessarily reflect the views of the DOE.

This book is printed on recycled paper.

Special Thanks to

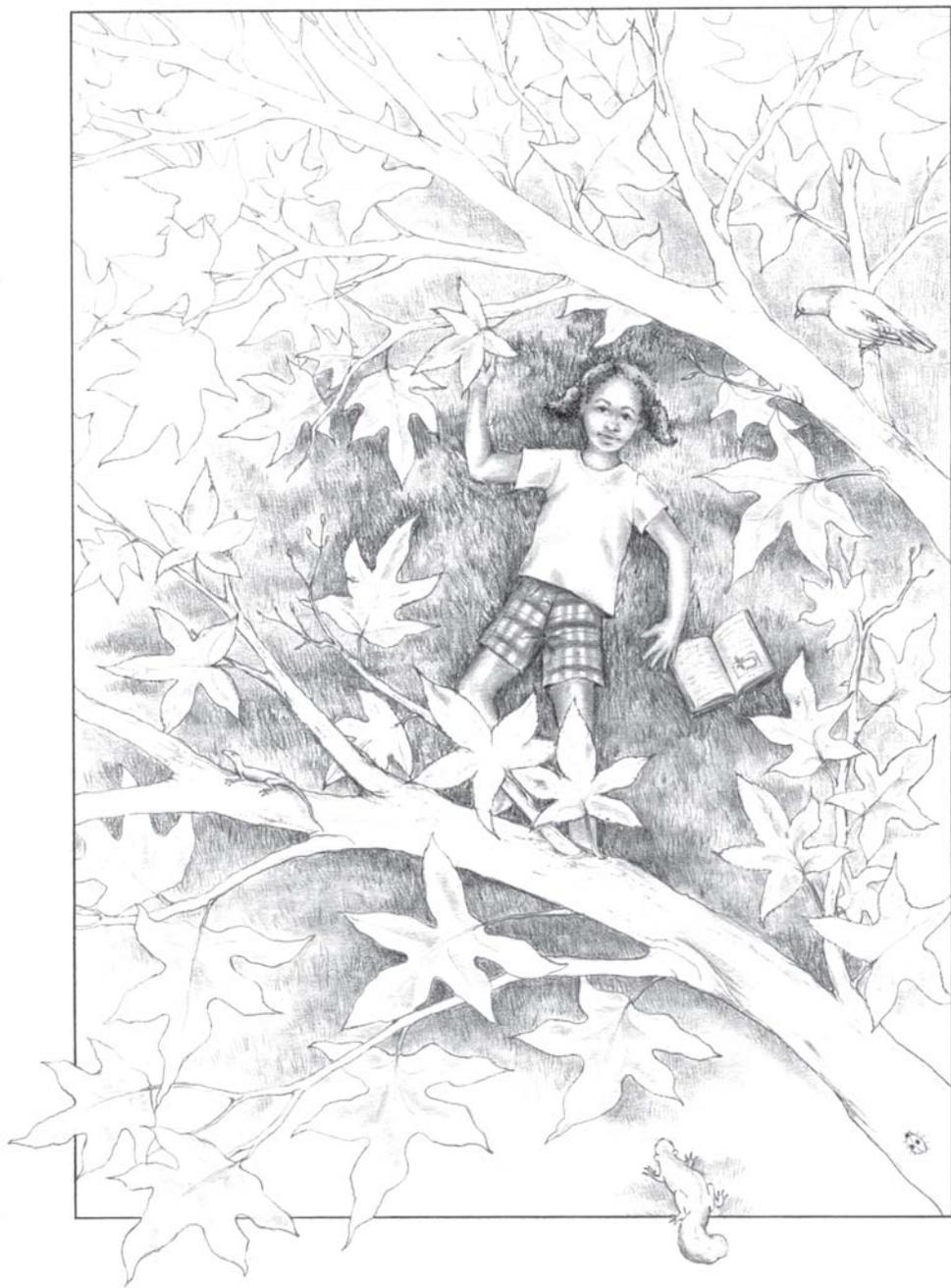
Joan E. Berish
Wildlife Biologist
Florida Game and Fresh Water Fish Commission

and

George Custer
Fire Management Officer
Seminole Ranger District
U.S. Forest Service

TABLE OF CONTENTS

CHAPTER ONE	PAGE	1
CHAPTER TWO	PAGE	5
CHAPTER THREE	PAGE	7
CHAPTER FOUR	PAGE	11
CHAPTER FIVE	PAGE	14
CHAPTER SIX	PAGE	21
CHAPTER SEVEN	PAGE	26
CHAPTER EIGHT	PAGE	33
CHAPTER NINE	PAGE	40
CHAPTER TEN	PAGE	45
CHAPTER ELEVEN	PAGE	49
CHAPTER TWELVE	PAGE	55



CHAPTER ONE

Tamika looked up. The emerald green leaves of the sweet gum tree swirled in the warm breeze. The tall, moss-covered trunk rose up almost to the clouds. Lying on her back under the large tree, she used her eyes to slide up the trunk into the soft green mass of leaves. This had always been one of Tamika's favorite ways to pass the time.

Tamika was in the backyard of her grandparent's house waiting for Diana. The two girls were best friends, even though everyone thought they were so different. Tamika loved to sit quietly on the porch swing and read a good book. Diana would rather swing as high as she could and leap off, rocketing into the air. Tamika loved to surf the net on her computer, while Diana would rather hit a ball over the net while playing a rousing game of tennis.

The Franklins, Tamika's grandparents, were one of the first black families to move into an all white neighborhood in the small forest community. It caused quite a stir for about two weeks, and then everybody settled down and realized that the Franklins were people, just like everybody else.

Diana and her mom brought over a cake and welcomed their new next door neighbors to the town. Tamika, who was being raised by her grandparents, was thrilled to see a girl her own age, and so was Diana. From that minute on, the two were fast friends.

Tamika was watching the grayish green Spanish moss swaying from the high branches of the tree when Diana plopped down next to her on the ground and said, “Whatcha lookin’ at?”

Tamika rolled over and sat up, grinning at her friend. “Nothin’ much. I thought you’d never get here.”

“My mom made me clean my room and pick up my stuff. What a pain! I’m just going to mess that bed up again tonight. Why do I have to keep making it?” Diana grinned at Tamika, who raised her eyebrows, smiled, and shrugged her shoulders.

“Come on, Diana. If we want to put some walls up on our tree house, we better get started. Do you have a hammer and some nails?”

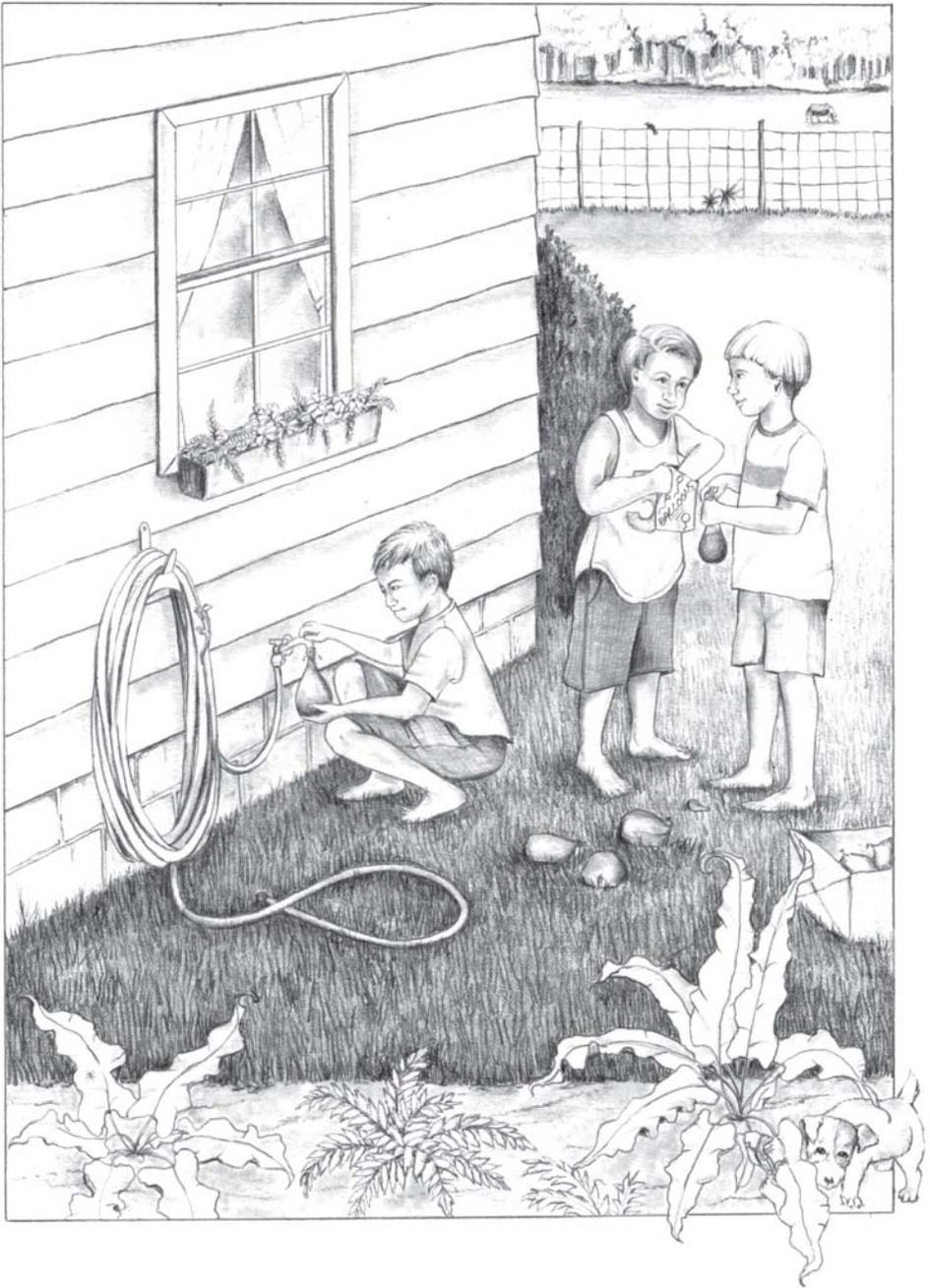
“Yep, and I even have a measuring tape. My dad said I could borrow his stuff as long as I brought it all back in one piece.”

Diana's dad was a general contractor, and she had grown up around construction sites. She knew how to use a hammer and had watched hundreds of houses go up. Building her own tree house was an exciting adventure to her. Her dad listened in amazement each night as she described the progress she and Tamika made that day. He offered to help the girls, but they insisted on doing everything themselves. The night before, he even offered to give them some boards for the frame, but Diana said no thanks. She and Tamika had found a place close by the crossroads in the forest where someone had dumped construction waste, and there probably was enough scrap lumber for her project.

"Do you have your water pistol with you?" Diana asked Tamika, as she picked up her tools.

"Full and ready to go," answered Tamika as she patted the right pocket of her cutoffs. "We'll be ready for those dumb boys this time."

The two girls climbed over the backyard fence and headed down the dirt road toward the long leaf pines that bordered the national forest.



CHAPTER TWO

Beside the two-story, weathered clapboard house, the three boys were huddled around a hose. Jake's red hair flopped in his eyes as he tried to stretch the green balloon over the nozzle. He pushed his bangs aside while the water gushed into the balloon. Then he handed the filled balloon to Matt, who carefully tied the end into a knot. Matt gingerly handed the water balloon over to Carlos, who put it in a cardboard box with several others.

"We're going to nail them!" exclaimed Matt gleefully.

"Yeah, all we have to do now is find them," replied Carlos.

"No problem," responded Matt, "those two girls are building a tree house in that big live oak where the two dirt roads cross in the forest. We can stake out that area, and when they show up, blam! We nail 'em."

Jake looked over at his two friends and grinned broadly, giving them the thumbs up sign. Carlos, who had moved to town from Puerto Rico last year, returned the gesture. He was broader and taller than both Jake and Matt, with jet black hair and sparkling eyes. Matt was short and

thin, with shaggy blond hair that always needed cutting. He was constantly thinking up new ways to get into trouble, but always in fun.

“This is an excellent plan,” said Carlos.

“I agree completely,” said Matt with great authority.

“Well, let’s go then,” said Jake as he picked up the box filled with watery missiles. The three boys headed down the dusty road, ready to engage the “enemy.”

Before they could travel fifty yards Jake’s brown and white terrier, Sparky, shot out from behind the bushes. He chased after the three boys, barking furiously, as if to say accusingly, “You’re going somewhere without me?”

Jake laughed and said, “We’d never leave you behind, Sparky. Come on, we need a scout.”

The four foot soldiers proceeded down the road, three in formation, and one running circles around the others in great excitement. All were ready for battle.

CHAPTER THREE

“Freeze!” whispered Tamika. “There’s something moving up in the road.”

The two girls stopped and squinted, trying to make out the object. Up ahead, a round beast lumbered across the sandy road. Tamika and Diana cautiously made their way toward the big, slow-moving gray lump. As they got closer, the animal became more distinct. Diana could see the repeated patterns on the rounded shell. The creature had elephantine back legs and shovel-like front legs. Its wrinkled face looked ancient, and it had a pinched mouth and big eyes.

Tamika thought to herself, “This thing looks like some kind of prehistoric animal.”

“Oh, it’s only a big old gopher tortoise,” replied Diana to Tamika’s unspoken comment. “Haven’t you ever seen one of these before?”

“Girl, I grew up in Chicago. Where would I have seen one of these before?” answered Tamika.

“That’s true. They’re mostly found in sandy, well-drained places. I guess that leaves out Chicago,” laughed Diana. “Watch what happens when we get real close.”

Diana and Tamika slowly moved closer to the gopher tortoise. The animal froze when it noticed the two girls quietly advancing. As they bent down to get a closer look, the tortoise made a hissing sound. It quickly pulled its head and legs into its shell and became completely motionless.

Diana explained to Tamika, "That's how they protect themselves. As long as he senses danger he'll stay inside his shell."

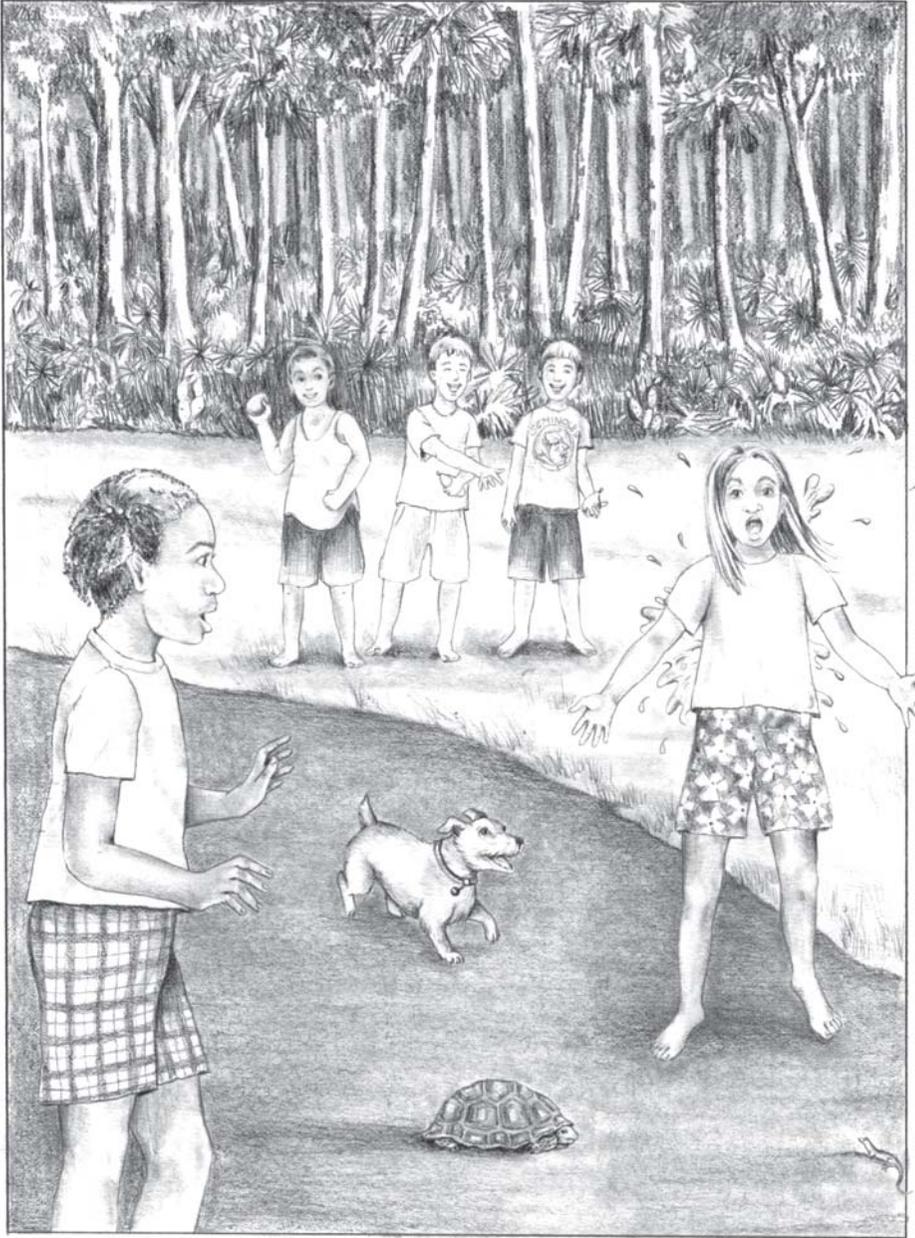
"How do you know it's a he?" asked Tamika.

"I don't," replied Diana, "unless you turn it over and look for an indentation in the underneath part. That means it's a male. But it's against the law to disturb gopher tortoises. They're ..."

As Diana was about to explain, Sparky, the dog, came barreling down the road at them, barking and jumping with excitement. He stopped momentarily to sniff the tortoise, but then resumed his wild greeting.

"They're here!" shouted Tamika. "Quick, get your water pistol."

The warning came too late! The first balloon spun through the air and exploded on Diana's back in a cascade of water.



Screaming with the shock of the cold water, Diana whirled and fired her water pistol right at Matt, who was doubled over with laughter at the successful hit. The steady stream of water on his face shocked him into reality.

Then the free-for-all began. Water balloons flew everywhere. The girls aimed, fired, and ducked. Glee-filled screeching filled the air as the water war continued. Sparky raced round and round barking furiously while the gopher tortoise remained motionless in its shell, hoping to remain invisible.

As the last drop squirted out of Diana's water pistol, the boy's supply of water balloons ran out.

"Let's go!" yelled Carlos, and the three boys went scrambling down the dirt road, high-fiving and laughing. Sparky trailed behind, sniffing and exploring the sights.

CHAPTER FOUR

“Do you believe that?” said Diana. “How do they keep sneaking up on us like that. This is getting to be a real pain.”

Tamika grinned at Diana and said, “Yeah, but this time I think they’re as wet as we are.”

“Good!” exclaimed Diana. “Next time we’ll get them first.”

“Boy, will you look at this mess,” said Tamika. “It was real nice of those boys to leave all this for us to clean up.”

“Well, we can’t just leave it here.” replied Diana. “If we don’t pick it up, who will? And besides, some animal might eat these pieces of balloons and get sick.”

The two girls were picking up the shredded water balloons and throwing them in the cardboard box when they saw the gopher tortoise quietly climb up the sandy bank of the road and slip into the pine forest.

“I wonder where he’s going?” said Tamika.

“I don’t know,” answered Diana, “but we can follow him if you want.”

The two girls scrambled up the road bank which was covered with wire grass, prickly pear cactus, and small scraggly bushes. Silvery silk grass sprung from the sandy

soil. Long leaf pines grew above the flat grassy terrain.

Down a wandering, narrow path the gopher tortoise was making its way toward its burrow. An apron of sand marked the half moon entryway where the gopher had thrown the excess. The tortoise slipped into the burrow and proceeded down the long tunnel just as the girls arrived. In the sand, the gopher had left a long line of tracks that looked as if they had been made by a miniature tank.

“Darn, we just missed him,” exclaimed Tamika disappointedly. “I really wanted to get a closer look.” Tamika knelt down and peered into the burrow, reaching down into the deep hole.

“Don’t stick your hand in there!” cautioned Diana. “Rattlesnakes and black widow spiders can live in gopher burrows.”

Tamika pulled her hand back and stood up quickly. “No problem,” she said. “I won’t do that again. Anything else in there I should know about?”

“There are other animals that can live in there too, like indigo snakes, skunks, gopher frogs, Florida mice and even an occasional armadillo.”

“Is there enough room in there for everyone?” asked

Tamika jokingly.

Diana nodded her head as she replied, “Those burrows can be as long as twenty to thirty feet. Big enough to house a bunch of critters at the same time, but I’m not sure how well they’d get along!”

Tamika grinned and said, “Let’s go, Diana. We need to get busy on our tree house.”

The two girls walked back to the dirt road and picked up the rest of the balloons. Then they headed toward their construction site where the two roads crossed in the forest and a huge live oak commanded the environment.

CHAPTER FIVE

Diana and Tamika stood under the gigantic tree. Massive branches spread out from the main trunk, enveloping the whole area in cool shade. Spanish moss festooned the high branches, as if someone had purposely decorated them for an important holiday. Air plants clung to the branches with spiky little leaves, and grayish green lichen climbed the bark.

About six feet off the ground, the trunk split into three sections. It was here in this crevice that the two girls were building their personal hideaway. Several hunting seasons ago, someone had built a platform as a deer stand, and now the girls were claiming it as their own.

A few days earlier, the girls had gone exploring and found some lumber down the road at a spot where someone had illegally dumped a load of construction waste and other trash.

“I can’t believe someone could just drive up and dump this stuff in the national forest,” Tamika had complained indignantly. “It’s just like they dumped it in our backyard!”

“Yep, it’s disgusting all right. It would be nice if everybody treated the forest as if it were their backyard,” Diana

had added. "Then this kind of thing wouldn't happen."

After unloading their tools, the girls headed for the dump site to see what they could scavenge for the tree house.

Diana looked around at the pile of construction waste. "You know, there is some good wood in there. We might as well reuse the lumber. Waste not, want not, like my mother always says!"

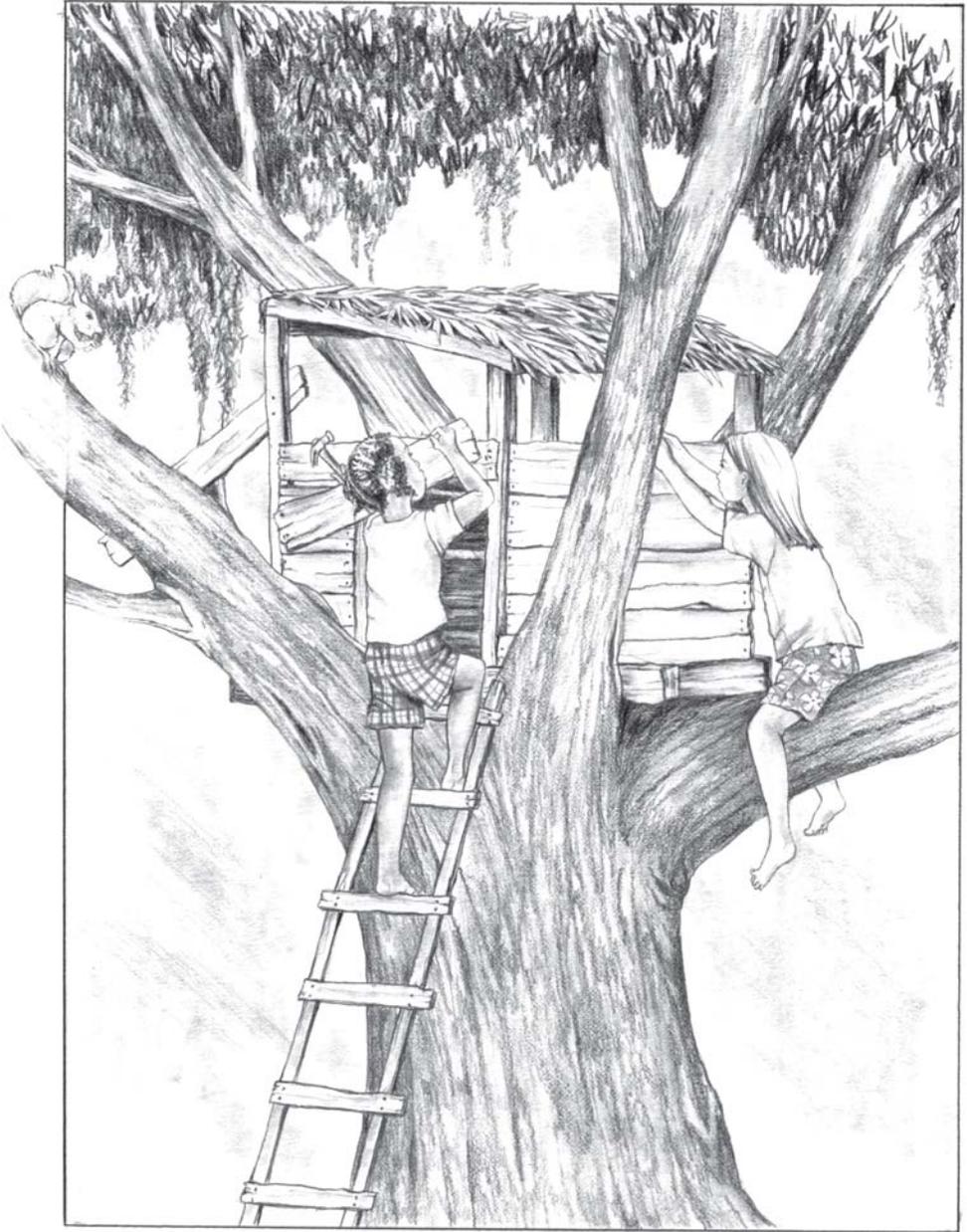
"Great idea," said Tamika, " but what should we do with the rest of the trash? After all, we didn't dump it."

"I don't know," replied Diana. "Let me think about it."

And so Tamika and Diana spent that afternoon dragging the usable pieces of lumber over to the live oak tree and starting on the frame for their tree house. The rest of the trash was soon forgotten.

Now, two days later, Tamika and Diana were ready to put the frame together. The two girls measured, sawed, and pounded nails. One side of the frame was ready to haul up the tree. They tied a long rope securely around the framework.

Diana climbed up the tree and threw the other end of the rope over a sturdy branch. Tamika, who was standing on the platform, hoisted the frame up, and Diana reached



over and grabbed it. Taking turns hammering the nails, the two girls secured the bottom of the frame to the platform.

Diana decided to attach one side of the frame to the tree for stability. Hammering in the last nail, she missed the board. The rhythmic clunk of the hammer changed to a different metal-on-metal clink when it hit the tree.

“What’s that?” she thought to herself.

Diana peered around at the place where the hammer had nicked the tree. She peeled a small piece of the rough bark away with the claw of her hammer and saw the side of a copper coin stuck sideways into the wood.

“Hey, Tamika, look at this!” yelled Diana as she tried to pry the coin out of the tree. The girls worked on the wood around the coin, chipping little pieces off like miners digging for precious treasure.

Before long, the coin wiggled loose. Diana turned it over. It was very old! On the front was an Indian, facing sideways, wearing a headdress. A wreath adorned the back and encircled the words One Cent.

“Quick, what’s the date on it?” asked Tamika with growing excitement.

Diana responded with a hushed voice. “I can’t be-

lieve it, but it says 1859.”

Tamika looked at her in utter amazement. “You’ve got to be kidding me. This has to be worth something. When we get home I’ll crank up my computer, and we can surf the net for some information.”

“Good idea,” said Diana. “Let’s finish the walls, and then we can go.” Carefully, she put the coin in the pocket of her cutoffs, and they continued working.

It wasn’t long before all four sides were upright and secure on the tree house.

“Boy, am I hot!” exclaimed Tamika. “I wish I had an ice cold drink.”

“And some food, too,” added Diana. “When our tree house is built, let’s bring a cooler for sodas.”

“Perfect! We could also bring the solar oven we built in Mrs. Jackson’s class last year. We could heat up some lunch or make s’mores.”

“Now you’re cookin’!” smiled Diana.

The two girls rested on the platform high in the tree becoming almost hypnotized by the Spanish moss blowing back and forth in the breeze.

“How do you think that coin got way up in the tree?”

asked Tamika.

“Good question. I guess someone must have put it there, but it had to be a long time ago. The tree had already grown around it. If we hadn’t been hammering, we never would have found it.

“You know, Diana, from up here you can see both directions down the dirt roads. I can see Miss Hopkins’ house, and I can even see the gopher tortoise burrow. This is a great view from up here. Do you think someone used this tree as a lookout a long time ago?”

“That could very well be, or maybe this was just a place to get away from everyone,” suggested Diana. “Let’s climb higher and see what else we can see.”

Three minutes later the girls were fifty feet off the ground and looking across the forest. “See that row of trees with the light green leaves,” Tamika asked. “Those are sweet gums, just like the ones in my yard. It looks like they’re bordering that low lying area.”

“Look, there’s a line of cypress trees there too,” Diana added. “I wonder why they’re growing over there?”

“Who knows,” shrugged Tamika. “Let’s climb down and go back to my house. I want to find out more about that

coin. We can finish building tomorrow.”

The two friends climbed down and gathered up all the tools. They took the cardboard box filled with remnants of the balloon war and hurried down the sandy, two-rut road to begin their search on the information superhighway.



CHAPTER SIX

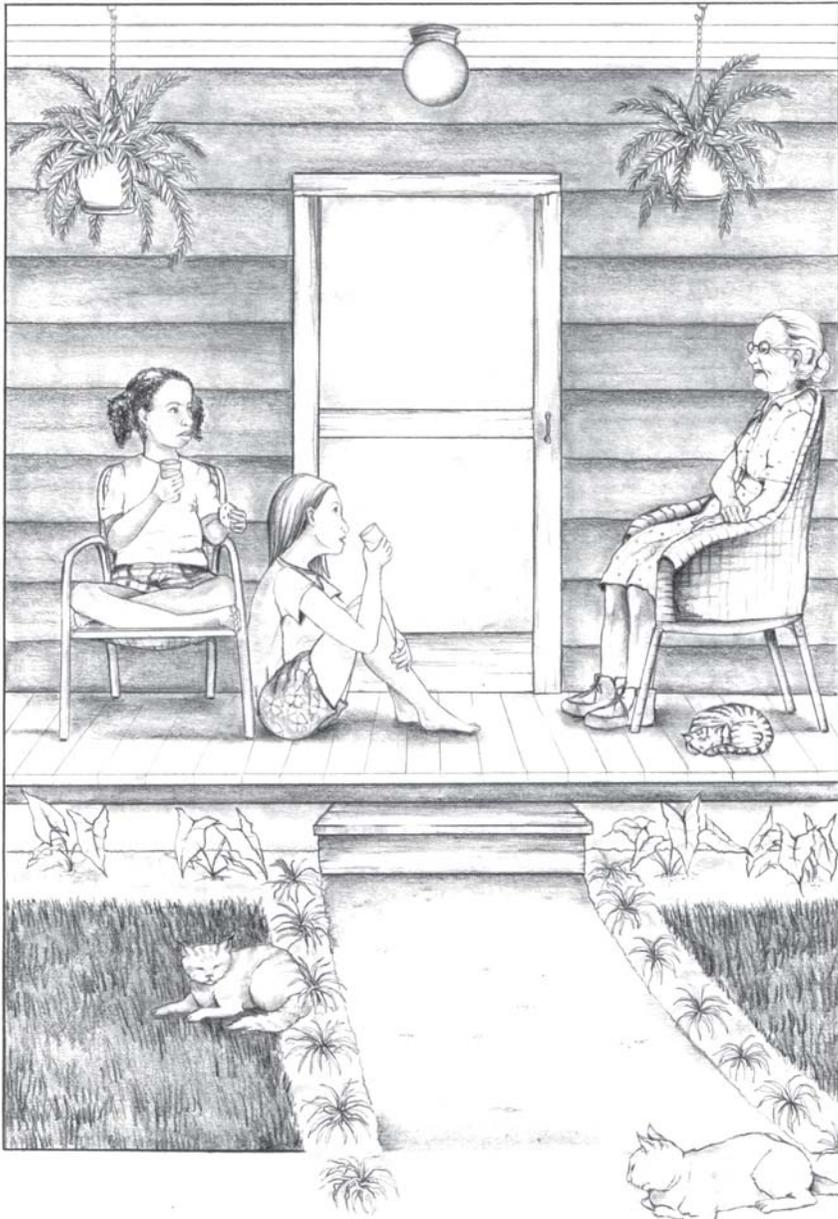
“Yoo hoo, girls!” Miss Hopkins yelled as Diana and Tamika passed the white, cracker-style house by the side of the dirt road. A broad porch surrounded the house on three sides, and the metal roof glistened in the sun.

“Hey, Miss Hopkins!” they both waved and shouted a greeting.

Miss Hopkins, who had seen eighty-six sweltering summers, motioned for the two girls to come up on the porch and visit. Her wizened face reminded Tamika of the tortoise, except Miss Hopkins’ face was a soft, wrinkly pale color instead of gopher gray. Her white wispy hair was pulled back in a bun, and she wore spectacles which framed her cornflower blue eyes. She wore a yellow-and-white, polka-dotted house dress and almost worn-out leather boots.

“It’s nice to see you girls again,” Miss Hopkins said as she motioned the two to sit down on the steps leading up to the porch. “Would you like some ice cold lemonade and homemade cookies?”

Miss Hopkins was sitting on the porch swing. In front of her was a pitcher of lemonade, three glasses and a plate of cookies.



“I saw you girls earlier and thought you might like a pick-me-up after all that hard work. I’ve heard you nailing and banging all morning.”

“Yes, ma’am,” both girls said in unison. Diana reached for a cookie while Miss Hopkins poured the lemonade.

“I hope we didn’t disturb you, Miss Hopkins,” said Tamika with a concerned look on her face.

“Oh no, Tamika, I enjoy the noise. Sometimes it gets so quiet around here, all I can hear are the mockingbirds and an occasional cardinal. What are you two building in that old live oak tree down by the crossroads?”

Diana answered first. “It’s our tree house, ma’am. We’re building it all by ourselves, and no boys are allowed!”

The old woman laughed and said, “Good for you!”

“Did anybody ever live down there?” asked Tamika, thinking about the coin they discovered earlier.

“Well Tamika, there’s never been a house in that area since I’ve been here. Rumor has it that somewhere around here there was once an old wooden fort that was built during the second Seminole War. Years later, it burned to the ground, and now nobody knows its location.”

“Cool!” exclaimed Diana. “Has anyone ever really looked for it?”

“I seem to recall that many years ago a professor from the college came down here asking questions. He said the old fort was supposed to be near some crossroads. I suggested he look around the area by your tree. He said it wasn’t possible for it to be there because the fort was built by a lake or river. When I asked him why he thought that, he said he’d found some old records with a receipt for a shipment of flour. That’s not unusual, but the delivery was made by boat.”

“Boy, wouldn’t it be neat to find that fort,” thought Tamika as she listened to Miss Hopkins’ story.

Miss Hopkins stopped to take a sip of lemonade and Diana took advantage of the pause in the conversation. “Miss Hopkins, have you ever seen a coin like this one?” She pulled the old coin out of her pocket and handed it to the old woman.

The old woman turned it over in her bony hand and said, “I used to see a lot of these when I was a young girl, but nowadays people collect these coins. They’re no longer in circulation and I haven’t seen one in years. This is an

Indian Head penny. Where did you girls find it?" She handed the penny back to Diana.

"You're not going to believe this, but it was six feet up in that old tree. Someone stuck it in the wood and the tree grew around it. When we were nailing a board into the tree we discovered it," explained Diana.

"Well girls, that's a perfect example of what I was telling my nephew, George, just the other day. We're not the first ones who have been here in this forest, and we're not going to be the last."

"What do you mean, Miss Hopkins," asked Tamika?

"Tamika, when you get as old as me, you'll understand." And with that, the wrinkled old woman stood up and looked at the dark clouds building in the sky. "You girls better head on home if you expect to beat the storm. It's been mighty dry lately so we could use a good shower."

The two girls thanked the old woman and hugged her good-bye. As they headed down the road, Diana tried to make sense out of what Miss Hopkins had said about the forest.

CHAPTER SEVEN

That afternoon, the summer rain descended. The shower didn't last long, but rumbling thunder and brilliant flashes of lightning prevented the girls from using the computer to search the net for information on the Indian Head penny. They put the coin in Tamika's jewelry box for safe-keeping and spent the rest of the afternoon in her bedroom making plans about how to finish the tree house.

The two girls had covered only the bottom half of the sides, leaving large openings for breezes to blow through. They decided to add some benches along the walls of their tree house.

"We'll have to check and see if there is any plywood at the dump site," suggested Tamika.

"Oh yeah, the dump site," remembered Diana. "What are we going to do about that mess?"

"Diana, we didn't make that mess. Why do you want to clean it up?"

"It doesn't seem right to just leave it there. It's our forest and our tree house. I'm going to ask my dad what to do about it. Maybe he has a good idea."

Tamika looked out the window of her bedroom. The

late afternoon sunshine streaked through the clouds. The trees glistened with water droplets. The puddles on the paved road would soon evaporate in the southern heat.

“We can turn the computer on now,” said Tamika as she booted up the machine. Tamika clicked on the icon for the search engine and typed in “Indian Head penny.” Immediately her computer started talking to computers all over the world, trying to locate information on the coin.

“Bingo!” shouted Tamika. “It says here that the Indian Head penny was minted in the United States from 1859 to 1909. That means our penny was one of the first ones ever made!”

“Wow!” exclaimed Diana. “This really is incredible. Does it say how much it’s worth?”

“No, but it does say that it’s not an Indian on the coin. It’s really Liberty wearing an Indian headdress. It also says here that the coins made in 1859 were the only ones to have a laurel wreath on the back. After that, they made the cent with an oak wreath and added a shield at the top. I think we’re going to have to take it to a coin shop to find out how much it’s worth. They’ll be able to tell us there,” Tamika said with mounting excitement.

“Come on Tamika. Let’s go downstairs and show your grandparents.” The two friends took the penny out of the jewelry box and ran downstairs to show off their wonderful treasure.

Mrs. Franklin was downstairs fixing dinner. She stirred the spaghetti sauce, and steam rose from the large pots on the stove. “Diana, I called your mom and asked if you could have dinner with us. She agreed. Is that all right with you, girls?” she asked with a mischievous grin on her face.

“You bet!” they both shouted.

Mr. Franklin came in from the living room carrying his folded newspaper. “What’s all the excitement?” he asked, peering over his glasses.

Mr. Franklin was an engineer at the new waste to energy plant, twenty miles away from the sleepy little town. For years, the county had been hauling trash and garbage to the old landfill. The landfill, or dump as the locals called it, had reached capacity, and the new facility had been built. In addition to burning solid waste to power the machines that created electricity, there was also a recycling center to help dispose of newspaper, metals, glass and plastics. Mr.

Franklin was proud of his job and enjoyed talking about how energy was being produced and conserved at the new plant. He loved telling people that recycling ten aluminum cans is like saving a gallon of gasoline.

“It’s time for you and the girls to set the table,” said Mrs. Franklin as she passed by her husband and gave him a little peck on the cheek.

Diana and Tamika showed the Franklins the Indian Head penny as they set the table. Mr. Franklin turned it over in his hand and said, “I collected these coins when I was a boy. Where did you girls get this one?”

Tamika told her grandfather about the tree house. She explained how they had found the penny embedded in the old live oak.

“This is quite a mystery!” exclaimed Tamika’s grandmother.

Mr. Franklin piped in, “Where are you girls getting the materials to build your tree house?”

“There’s a place in the forest where someone’s been dumping garbage and construction waste. It’s a real mess,” answered Tamika. “That’s where we’re getting the lumber.”

“You would think people could take their garbage to

the new incinerator or else recycle it, instead of just dumping it anywhere they please,” said Diana with great disgust.

“I agree with you completely, Diana,” said Mr. Franklin. “Only it’s not an incinerator, it’s a waste-to-energy plant. And it’s not garbage, it’s trash.” Mr. Franklin’s eyes glowed as he explained that garbage refers to organic waste such as food scraps. Trash is the term used to describe cardboard, newsprint, and old wood.

“What’s the difference between an incinerator and a waste-to-energy plant?” asked Diana.

“I’m glad you asked that question.” Mr. Franklin smiled and rubbed his hands together as he warmed to his favorite subject.

“An incinerator is a place where solid waste is burned. The heat energy that is produced is just released into the air. At a waste-to-energy plant, we try to recover the energy in the garbage by using the heat that is produced.”

“How do you do that?” asked Diana.

“Well,” replied Mr. Franklin, “The heat from the burning garbage is used to boil water which produces steam. The high pressure steam is used to turn a turbine which

causes a generator to produce electricity. The waste-to-energy plant where I work produces around 50 million watts of power, enough electricity for 1500 homes.”

“Wow, that’s really cool. All that energy just from trash,” exclaimed Diana.

“Yes, and there’s even more,” explained Mr. Franklin. “We try and recycle as much as we can. Recycling not only saves expensive landfill space, it also saves materials and energy. Just think about all the energy it takes to make a plastic or glass bottle. Doesn’t it make sense to recycle those things instead of just tossing them out?”

“Gee, it sounds like you’re taking care of all the stuff that we throw away,” replied Diana.

“Well, Diana, people shouldn’t send grass clippings or leaves to the landfill or to the waste to energy plant. Those organic materials should be composted and used as mulch for gardens.”

“Grandpa,” interrupted Tamika. “You are always talking about the wonderful things that happen at work. Are there any bad parts about the waste-to-energy plant? I heard that a lot of people didn’t want it built.”

Mr. Franklin thought for a moment and then replied,

“Whenever you burn something, ash and small particles fly up into the air. We have filters on the smokestacks to take out most of these particles. Unfortunately, we haven’t developed filters fine enough to trap the vapor from toxic metals, like mercury, from escaping into the atmosphere. That’s why it’s real important not to throw used batteries and fluorescent bulbs into the garbage because that’s where most of the mercury comes from.”

“I didn’t know that, Grandpa,” replied Tamika.

“Me either,” said Diana.

“Well, girls, now that you’ve learned something new, how about helping with the dishes,” interrupted Tamika’s grandmother.

While everyone helped clean up the kitchen, the girls made plans to meet the following day. Diana and Tamika agreed to finish the tree house and find someone who would be responsible for cleaning up the illegal dump.

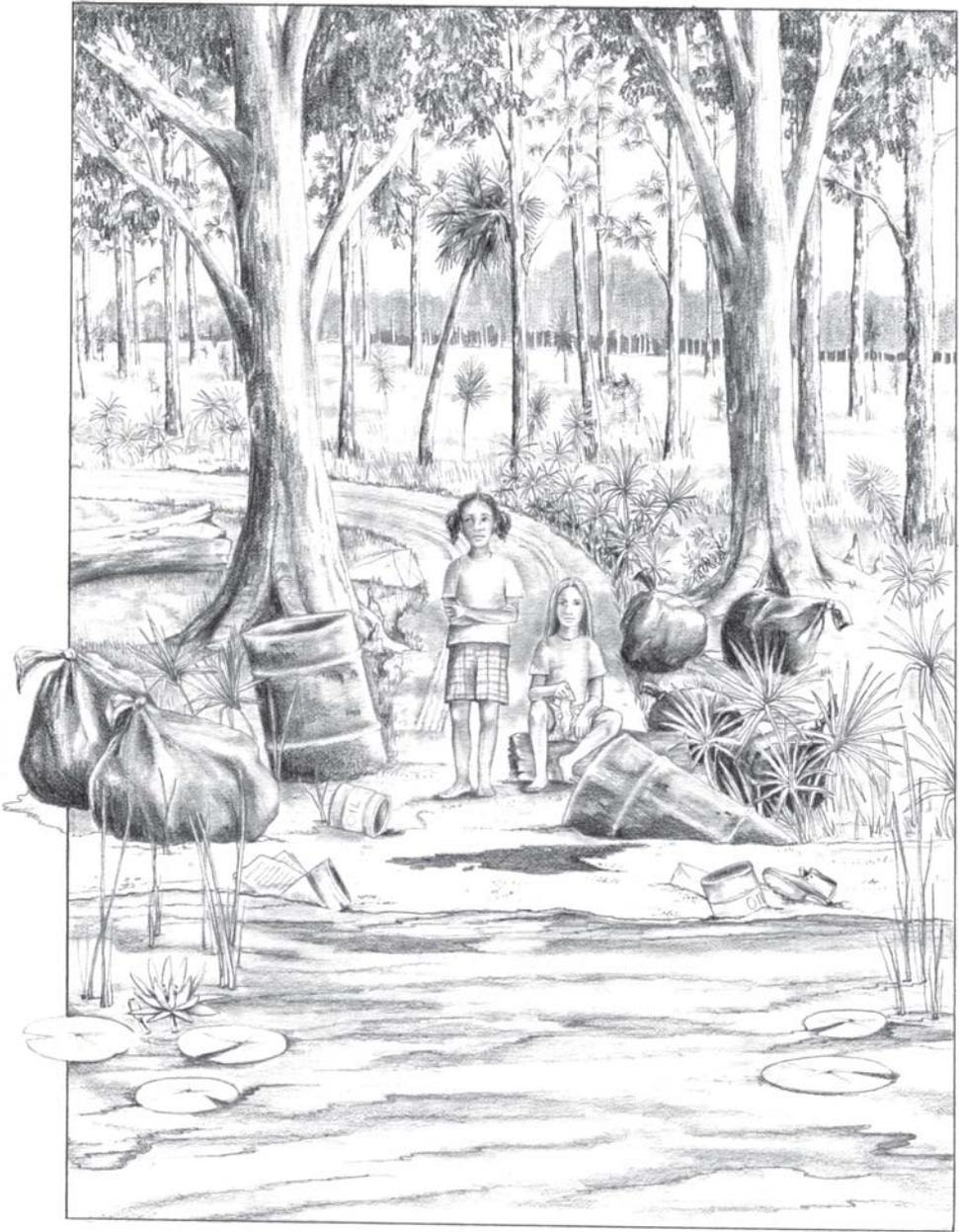
CHAPTER EIGHT

“Somebody’s been here again,” exclaimed Diana in great dismay. She looked around the area of the forest where trash and garbage were piling up. “Those rusty 55-gallon drums weren’t here yesterday, and there must be at least twenty bags over there.”

One bag had split open, and flies were swarming around the rotting waste. “This just isn’t right,” said Diana.

Tamika nodded her head in agreement. “Look over here, Diana.” Tamika pointed to a small pond that had a path full circle around it. Lily pads with yellow flowers floated in the water. In the cattails on the edge of the pond, empty oil cans were scattered on their sides. It looked as if someone had tried to throw them into the water but missed. In the sand, a large black stain marked the spot where the gooey, used oil had seeped into the ground, possibly even making its way into the aquifer. Someone had changed the oil in their vehicle, right there in the forest, and left the mess to pollute the environment.

“What a mess and what a waste too,” exclaimed Tamika in disgust. “Last year, I learned that used oil can be recycled into new products and even cleaned and reused.



After all, it's a nonrenewable resource, and we're running out of it. There's a better way to dispose of used oil than dumping it on the ground."

"And dumping oil like this causes serious water pollution problems too," added Diana. "Just a few drops of oil can pollute hundreds of gallons of water. We need to do something to fix this."

"I agree, Diana. We need to call someone today and get help to clean this mess up."

"Okay, Tamika," Diana said as she scanned the area looking for plywood. She found some under a few large bags of trash. "But first let's drag this wood over to the big oak and finish building our tree house. We should be done by noon, and then we'll make some phone calls."

The two girls worked all morning on their hideaway, measuring, sawing and hammering. They found palmetto fronds for the roof and hauled those up with the rope.

Before long the tree house was completed. The two friends were exhausted, but happy. They sat down on the floor and propped themselves against the sides. Sitting there, they could see out into the trees and down the road. They watched a small sparrow flit from branch to branch

and enjoyed the serenity of the forest. The breeze was cool on their faces as they rested from their labor.

The peaceful quiet was interrupted by the grating sound of a truck shifting gears. The two girls peeked over the side of the tree house and saw a big rickety dump truck coming down the dirt road. It was followed by a billowing cloud of dust. The truck, filled with trash and garbage, screeched to a halt and backed up right into the illegal forest dump. The bed of the truck raised up, and the load it carried tumbled to the ground. The gears ground and shifted, and the truck sped off down the road.

“I think we just saw the culprits at work,” exclaimed Diana angrily.

“No doubt about it,” responded Tamika. “Let’s go make some phone calls.”

The two girls slid down the rope dangling from the tree house and headed down the dirt road for home and the telephone. Miss Hopkins was standing on her front porch as they neared her house.

“Hey girls, did you see that old truck a few minutes ago? I was wondering what it was doing up the road.”

The two girls stopped and yelled back. “Yep, and

we're going home to call the authorities. Those people are dumping trash right there in the middle of the forest."

Miss Hopkins was furious and suggested that Diana and Tamika use her phone. The two girls hurried up the walkway and the porch stairs.

"Why don't we call my nephew, George? He's a ranger for the Forest Service. He'll know what to do," Miss Hopkins suggested.

The phone call was made, and half an hour later George drove up in an official-looking car. He was a tall, balding, middle aged man, dressed in a beige uniform.

"Good afternoon, girls," George nodded at the girls and turned to his aunt with a concerned look. "Now, what's the problem, Aunt Mary?"

"Looks like we got some people with very poor manners dumping trash right here in the forest. The girls can show you where, George," said Miss Hopkins. "We need to get this stopped before it gets out of hand. One day someone throws a used paper cup on the ground. The next day someone throws their lunch bag there too. The following day someone throws a trash bag in the same spot, and there you have it, an unofficial dump. Trash begets trash.

Why'd they build the new waste-to-energy plant down the road if people aren't going to use it? I declare, what's this world coming to?"

"Settle down, Aunt Mary, I'll take care of this right now. Whoever is doing this will pay, that's for sure."

Ranger Hopkins and the girls walked down the dirt road in the forest until they arrived at the dump site. The hot afternoon sun beat down on the piles of rubbish. Flies swarmed around Diana's head, and the strong putrid smell of rotting garbage permeated the air.

"How are you going to find out who did this, Ranger Hopkins," asked Tamika.

"This might be easier than you think, girls. If I can find some papers with the name of a person or the name of a company in this trash, then we may be able to find out who's responsible for this mess," he said as he examined the bags.

Ranger Hopkins opened several bags before he found one filled with papers. He carefully studied the bag's contents and found an envelope and what appeared to be some stationery.

"Piece of cake, ladies," he exclaimed triumphantly.

“It says here, J. D. Moran Construction Company. We’ve even got an address, 1700 W. Main St. We may have discovered our illegal dumpers. All I have to do now is go down to their office and check out this lead. I may have to write a very expensive citation.”

“I don’t think that’s possible. You must have made a mistake,” interrupted Diana.

“ I don’t think so, Diana,” explained the ranger. “I have the evidence I need right here.”

“You don’t understand, it’s just not possible,” Diana continued. She looked up at Ranger Hopkins with a dead serious expression and grabbed his arm. “J. D. Moran is my father!”

CHAPTER NINE

That afternoon, Ranger George Hopkins went to J. D. Moran Construction Company and issued a citation to Diana's father for illegal dumping in the national forest. Mr. Moran tried to explain, but the ranger told him to save his breath because he'd have his day in court.

Diana was too upset to even talk to her dad. Her mother tried to talk to her, but she slammed the door and stayed in her room the entire night. She left home early the next morning, met Tamika before anyone got up, and the two girls headed to their tree house in the forest.

The pair meandered down the sandy road. "Why don't you at least let your Dad explain what happened, Diana," implored Tamika. "Then you might understand."

"I'm too mad to talk to him right now, Tamika. Maybe later. How could he do this?"

"Diana, maybe he didn't do it. Maybe it was someone else. Don't jump to conclusions until the investigation is complete. After all, that wasn't his truck, was it?"

Diana stopped cold in her tracks and looked at Tamika for the first time that morning. "How could I be so stupid. Of course that wasn't his truck. How could I over-

look something so important?”

“I’m also wondering if the same truck will come back today with more stuff. I don’t think the real dumpers know that the authorities have been called. Why don’t we stake out the dump site and catch them in the act?” suggested Tamika.

Diana grabbed Tamika, gave her a big hug and heaved a giant sigh of relief. “Thanks Tamika, that’s a great idea. We can prove my dad isn’t dumping illegally. Let’s go.”

The girls hurried past Mrs. Hopkins house, past the live oak tree at the crossroads, and stopped short of the dump site. “Yesterday I couldn’t see into the truck. If those people show up today, I want to get a good look at them,” said Diana. “Let’s get the license plate number. Then we can turn them in to the authorities, and my dad won’t be in trouble.”

The two girls found a log behind some bushes where they could see the road, but nobody could see them. There, they waited and waited and waited some more. After a while, the girls saw a gopher tortoise slowly making its way across the road toward their hiding spot.

“Look, Diana, another gopher.” Tamika pointed and started walking slowly toward the tortoise.

“Stay still, Tamika,” commanded Diana. “Look over there, and you’ll see its burrow in that sunny clearing over by that pile of fresh sand. If we just stay where we are, I bet we can watch that tortoise for a long time before it sees us.”

Tamika sat back down on the log, and the gopher tortoise began moving closer and closer to the girls. It walked a few feet, stopped to chew on some fresh bahia grass and then continued on its slow journey. Tamika watched as the tortoise craned its head sideways and reached out to grasp the long grass with its beak-like mouth. Eventually, the gopher tortoise arrived at its burrow and began clearing the entrance. Sprays of sand flew out as the tortoise pushed the sand backwards with its front legs. Then the tortoise entered the burrow and disappeared into the cool darkness of its home.

The girls, bored with waiting, walked over to the burrow entrance and stood on either side of the freshly moved sand. Hoping to see the tortoise, Diana peered into the darkness, but the gopher was deep in the tunnel. The two

girls were about to go back to their positions at the log when Tamika noticed something glinting in the sand, close to the entrance of the gopher hole.

“Wait a minute, Diana. What’s this?” Tamika reached down and picked up an old brass button. A raised eagle adorned the middle of the button. It was surrounded by a wreath almost like the one on the penny. Tamika placed the button on her palm and held it out to Diana.

“Take a look at this. It looks military or something.”

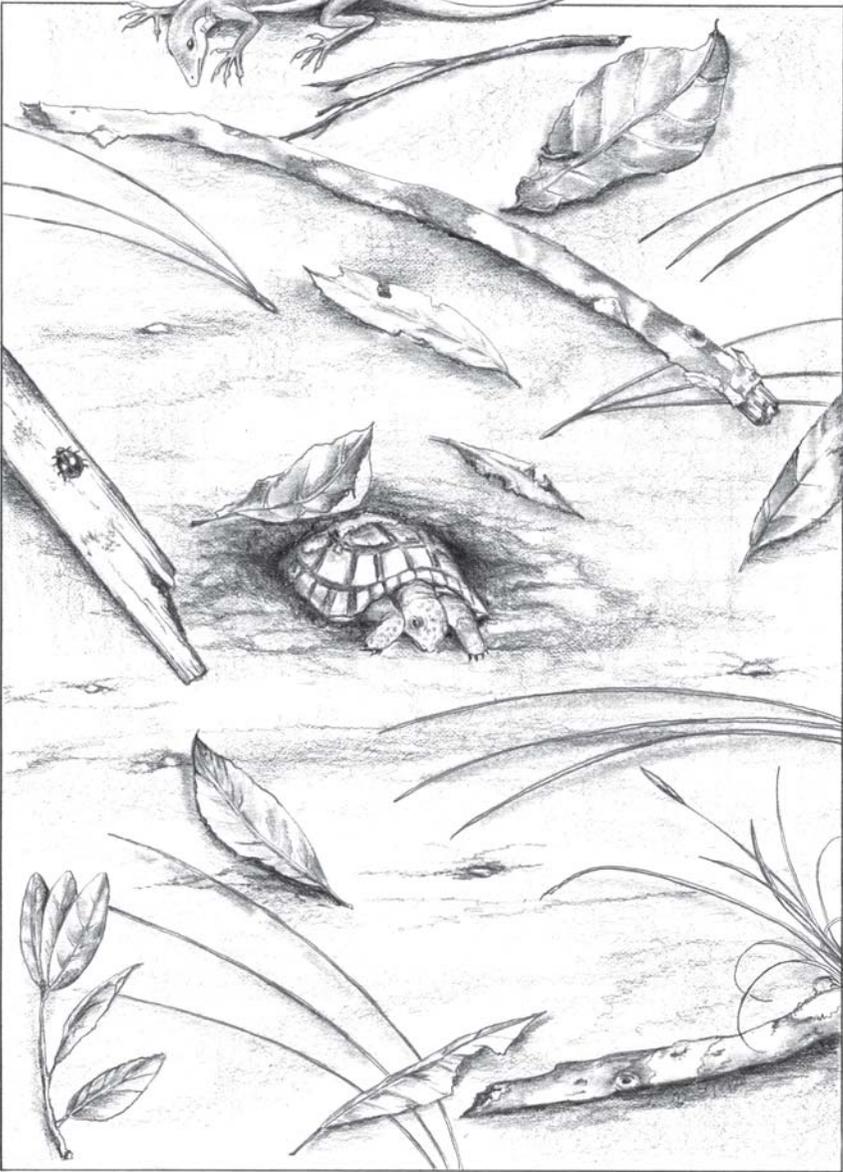
Diana took the button out of Tamika’s hand and turned it over carefully. “This is incredible! I wonder how this got here in the middle of the forest?” questioned Diana.

“The fort!” they both said at the same time.

“I don’t care what that guy from the college told Miss Hopkins,” said Tamika. “That fort has got to be around here somewhere. First the Indian Head penny and now this button. What next?”

Tamika looked down at the sand where she had picked up the button moments before. She slowly extended her arm and pointed.

“Look, Diana,” Tamika gulped. “That sand is moving.”



CHAPTER TEN

Diana turned to see what Tamika was so frightened about. Just about that time, the sand caved in a little and a small head appeared. The girls stared in wonder as a hatchling dug its way out of the nest that had been covered with sun-warmed sand for almost three months! The baby gopher tortoise was as small as a ping-pong ball, and its shell was a muted orange and brown pattern.

Diana and Tamika stood still in amazement as the baby tortoise got its bearings. They couldn't believe they were watching this show live. Engrossed in the gopher tortoise's every move, the girls failed to hear the three boys approaching.

"Hey, Diana, Tamika, whatcha lookin' at?" shouted Matt as he pushed his blond hair out of his eyes.

Diana motioned for the boys to come over to the burrow. She put her finger to her lips to signal them to be quiet. Carlos squatted down in front of the sandy mound.

"Wow! A baby gopher. How cool!" he exclaimed.

"Yeah, we just watched it hatch," crowed Tamika, proud as a new mother.

Suddenly, Sparky arrived on the scene, wagging his

tail and sniffing everything in his path. Curiosity got the better of him, and he ran between Jake's legs to see what his human friends were so interested in. Just as he was about to pick up the baby tortoise with his mouth, Jake lifted Sparky up in the air and reprimanded the mischievous dog.

"Not for you, Sparky!" scolded Jake. You have to leave the gophers alone. Yesterday you wanted to go down a burrow, and today you want to eat a hatchling. From now on, gopher tortoises are off limits for you!"

Disturbed by the commotion, the tiny tortoise quietly crawled away from the children to find shelter in the burrow. Diana invited the boys to sit by the log away from the tortoise burrow. "Let's leave them alone for awhile," she suggested.

"Why aren't you girls over at your tree house?" asked Jake. "In fact, why are you hanging around this smelly old dump?"

"It didn't used to be a dump," declared Diana indignantly. Then the two girls went on to explain everything to the three boys. They told them about the illegal dumping and the mysterious truck, then about George, Miss Hopkins' nephew, and the citation. They even explained about the

fort and the river. Diana showed the boys their two curious finds, the Indian Head penny and the brass button from a military uniform.

“Hey, maybe this explains where that really heavy black metal ball came from. We found it yesterday, right around the bend by the eagle’s nest. Carlos said it looked like a cannon ball!” exclaimed Matt excitedly. “It was too heavy to carry so we hid it under the bushes by a tree.”

The five friends enthusiastically shared their information and forgot the reason why they were waiting at the dump site. Jake, who had been holding Sparky during the entire conversation, was startled when the dog turned his head toward the road and barked a short warning.

“Quick, hide!” shouted Jake. “They’re coming up the road!” The five friends dove for the bushes and knelt down behind the log where they could remain hidden from view.

The noisy truck backed up to the dump site, and, once again, the truck bed lifted and deposited another load of trash. When the truck bed returned to the loading position, two men got out of the cab. They both wore ripped jeans and dirty blue T-shirts. The younger of the two sported a cap that covered his greasy long hair and had “Red Dawg

Chewing Tobacco” printed on it.

“I know that older guy,” whispered Diana angrily to Tamika. “That’s Chester. My dad hires him to do odd jobs around the business.”

The older man lit a cigarette, took a deep drag, and said, “This was a great idea, Max. We don’t have to pay the tipping fee at the incinerator to dump this stuff; we save on gas because this place is closer to town; and we still get paid by that gullible idiot, Moran.”

Tamika grabbed Diana by the arm as she felt her friend jump, ready to defend her father. Sparky, who had been quiet the whole time, sensed how upset Diana was and began a low, deep-throated growl. He leaped out of Jake’s arms, barking menacingly as he headed straight for Max.

Max saw the dog racing at him. He threw his cigarette into the bushes, jumped in the cab of the truck and yelled at Chester, “Let’s get out of here, quick!” The truck’s gears shifted, and it went speeding down the dirt road, headed for town, with Sparky chasing behind.

CHAPTER ELEVEN

“Ooh, I’m so angry!” Diana looked at her four friends. “How could he say that about my father?”

“Forget it, Diana,” said Matt. “I do believe we just nailed those two guys. We have five witnesses who just saw Max and Chester illegally dumping in the forest.” He grinned at Diana as Jake spoke up.

“That’s right! We also heard them say your dad paid them to take the trash to the incinerator, not the forest.”

“Thanks, you guys,” said Diana. “We need to get back to town and tell the authorities what just happened, and I need to apologize to my parents.”

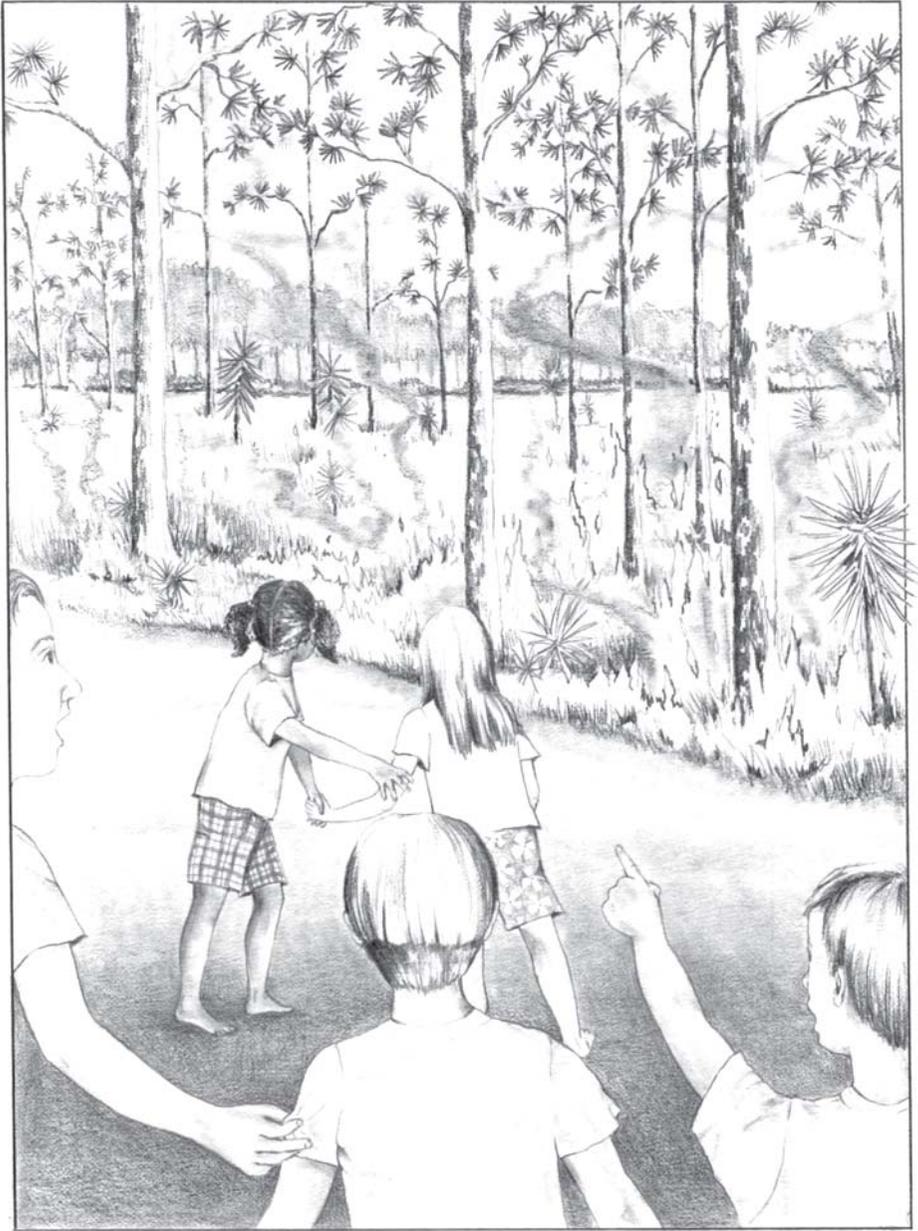
“Do you smell smoke?” asked Carlos sniffing the air.

“Look, over there!” yelled Tamika. “Fire!”

The cigarette that Max tossed into the bushes minutes before had ignited the dry underbrush. The whole area by the dump site was becoming engulfed in flames. Smoke rose high into the air, lifting particles of charred leaves, pine needles and burning embers. The fire was spreading rapidly and coming in their direction.

“Can we put it out?” asked Carlos with concern.

Matt responded with alarm in his voice, “No way! It’s too big. We need to get out of here right now!”



The only path to the road was blocked by fire so the children ran back into the forest, heading for the tree house and the crossroads nearby.

“If we can get to the crossroads, we’ll be able to get to Miss Hopkins’ house and call the Fire Department,” panted Diana to her friends as she ran through the bushes, jumping over fallen logs and sliding under low hanging branches.

“Where’s Sparky?” asked Jake with alarm in his voice. “I have to go back and get him.”

“Forget it, Jake,” said Carlos, grabbing Jake’s arm and pulling him along. “Sparky can take care of himself. Right now, it’s us I’m worried about. The wind is picking up, and that fire is traveling faster than we are!”

The smoke was thick, and Diana’s eyes were stinging. The fire had jumped the road, and, on both sides, the forest was blazing. The children reached the live oak tree still thinking they could make it to the road. Then the wind changed direction, and the fire quickly surrounded them.

“Hurry! Everyone up in the tree house,” commanded Tamika. Hoping to buy some time, the five friends clamored up the tree. With five children crammed in, there was

little space in the tree house. A cooler that had been filled with ice the day before was in the corner where Diana and Tamika had left it.

“Open that cooler!” shouted Diana. “I think there might be water in there!”

Tamika and Carlos were the closest to the cooler and immediately bent over and opened it. Inside, the ice had melted, and it was half filled with cool water. The children scooped up the water and soaked their T-shirts. Then Carlos climbed up to a higher branch in the tree. Matt and Diana handed the cooler up to Carlos and he poured the remainder of the water over the dry palmetto fronds. Carlos quickly climbed back into the tree house.

“I think I hear sirens. Does anyone else?” Tamika coughed from the smoke that irritated her lungs. In the background, the children heard several sirens scream a warning. Then they saw three fire trucks speeding down the dirt road. All five yelled for help and waved. One of the trucks screeched to a halt when the firemen saw arms flailing high in the tree.

Miss Hopkins had seen the smoke from the fire and called for help. After she alerted the fire department, she

called Diana's father to see if the girls were home or in the forest. Then she called her nephew, George.

The fireman put the fire out around the live oak tree and helped the kids down. A blue station wagon pulled up at the crossroads, and Diana's dad got out. Diana ran to her father, and the two of them hugged each other tightly.

"I'm sorry dad," she sobbed into his shoulder.

"It's okay, Diana. I love you." Her father said as he comforted her. "Are the rest of you kids okay?"

"We're all right except for Jake. Sparky was lost in the fire," answered Tamika.

Diana's dad walked over to Jake. He was leaning up against the fire truck, trying to hold back his tears. Mr. Moran put his arm around Jake's shoulder and said, "I'm sorry about your dog, son. I'm just really glad you kids got away without getting hurt."

About that time, George Hopkins pulled up and flung open the car door. The children ran to the car and surrounded the forest ranger, excitedly telling him all about the two men at the dump site. Ranger Hopkins went over to Mr. Moran, put out his hand and apologized. "I'm sorry, Mr. Moran, for not listening. The kids said two guys named Chester and Max are to blame for the dumping, and now it

looks as if they'll also be arrested for arson.”

“Thanks, Ranger Hopkins, I’m just glad things are getting straightened out,” replied Diana’s dad.

The ranger turned to Diana and Tamika. “I have some bad news for you girls,” he said in a concerned voice. “This tree house is going to have to come down. It’s illegal to put nails in a tree that’s in a national forest.”

“But, Ranger Hopkins,” replied Diana, “there was already a deer stand in that tree. We just added to it.”

“I’m really sorry, Diana, but deer stands nailed into trees are illegal, too. Whenever we find one, we have to tear it down,” responded the ranger.

“The ranger’s right, girls. We don’t want to do anything illegal,” replied Diana’s dad. The girls looked sad, but nodded their heads in agreement.

The children piled into Mr. Moran’s car, and he drove them home. The firemen spent the rest of the afternoon putting out the forest fire.

The hot fire had quickly consumed the underbrush and dry bushes on the forest floor. The canopy of trees, however, were mostly untouched. Luckily, the blaze was stopped before it reached Miss Hopkins’ house.

CHAPTER TWELVE

Curiosity got the better of the children the next morning. They met under the sweet gum tree in Tamika's yard and decided to investigate the remains of the fire. Jake didn't want to go. He was still sad over the loss of his dog, Sparky.

"You can't sit around moping all day," Tamika told him. "Let's go see what everything looks like." So they all climbed over the fence in the backyard and headed down the familiar dirt road.

Miss Hopkins was at the mailbox on the side of the road. As they stopped and stood talking with her, the children surveyed the damage the fire had caused. The ground across the dirt road from her house had been seared black, but the long leaf pines still stood tall and straight.

"This fire sure did mess things up," Tamika said.

"Now Tamika, fire in this kind of forest isn't all bad," Miss Hopkins replied.

From her eighty-six years living in the forest, Miss Hopkins knew that some fires actually help the forest. She went on to explain to the children that periodic fire renews a forest. It cleans up the plant litter on the ground, and that prevents larger, more destructive wildfires from killing the big trees. Fire also releases nutrients locked in the ground

litter, and that enriches the soil. Long leaf pines need the bare soil exposed to reseed themselves, and their seedlings thrive because competition from other plants is reduced. Without heat from a fire, cones from the sand pines don't get hot enough to open and reseed the forest. Even the gopher tortoises benefit from fire, which thins out the small trees and clears the underbrush. Then more sunlight reaches the forest floor and makes grass and herb seeds sprout and grow, giving the tortoises plenty of fresh, tender greens to eat.

The five friends said good-bye to Miss Hopkins and continued down the road. They approached the area where the dump site used to be. Except for the charred remains of the 55-gallon drums, the fire had removed all traces of the smelly eyesore. The ground had been stripped bare by the fire. Already a few shoots of new green grass were poking up through the blackened earth.

"I wonder if the gophers lived through the fire?" questioned Matt.

"Well, heat and smoke rise, and the tunnel is underground. I seem to remember reading somewhere that all sorts of animals use gopher burrows as shelter from a fire,"

answered Diana.

“I hope you’re right. I really started to like those tortoises,” said Tamika.

The sound of a car distracted the children from the gopher burrow. Miss Hopkins’ nephew waved at them. Jake started toward the car to say hello, but he tripped over a half-buried rock and landed on his knees. His friends ran over to see if he was okay, and the ranger pulled him up.

“Are you all right, son,” asked Ranger Hopkins.

“Yes sir, I’m fine. But what did I trip over? That wasn’t here yesterday,” Jake responded.

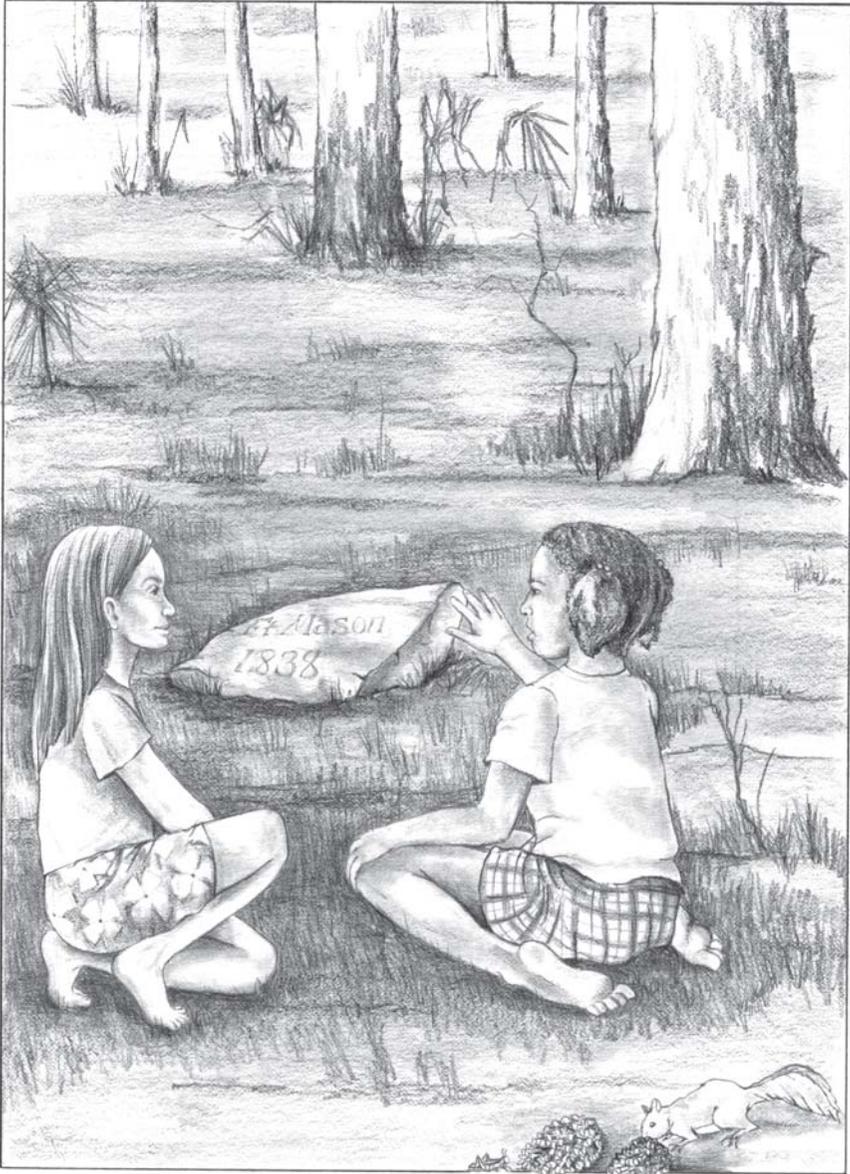
“Whatever it was, it was probably hidden by the underbrush, and the fire did a good job of clearing that away.”

Everyone moved toward the rock that was sticking up out of the ground. Tamika bent down and brushed away some of the dirt around it.

“There’s something carved into this stone!” she said excitedly. “See if you can make it out, Diana.”

Diana bent down and peered at the oblong rock. “It says Fort Mason!” she said incredulously.

Ranger Hopkins squatted down and said, “Here, let me look at that, Tamika. This does look like an old stone marker from the fort. The date says 1838!”



The two girls whooped for joy. “We found it, we found it,” they shouted.

“Hold on, Diana and Tamika,” said Carlos. “Didn’t you tell me the man from the college said there had to be water nearby. I don’t see a river or a lake.”

The two girls stopped their celebration and looked at each other with great disappointment.

“Hold on everyone,” interrupted Ranger Hopkins. “This part of the forest was drastically changed seventy years ago when the Army Corps of Engineers built the dam that created Lake Charles. After the dam was built, the Corps dredged the river below the dam to regulate the water levels in the river.”

“So when they deepened the river bed, most of the areas along the river were drained,” Carlos said.

“Correct, my friend,” Ranger Hopkins said. “In fact, there was a branch of the river that flowed right near here. That’s why those cypress and sweet gum trees are found just beyond the big live oak. They are probably growing on what used to be the banks of the river’s branch.”

“It makes sense that a fort in the forest would be built on the branch of a river,” added Diana. “That way, it

would be easier to get to it.”

“Well, you’re probably right, Diana, but I sure wish there was some other evidence. Then we could be certain old Fort Mason was located here.”

Jake spoke up, “We found something the other day. We think it’s a cannonball!”

“We found an Indian Head penny stuck in a tree and a brass button that has to be from a military uniform!” exclaimed Diana.

“Well kids, I think you’ve got something real exciting here. In fact I can’t think of anything else more exciting,” proclaimed Ranger Hopkins.

At that moment, Jake looked over at the gopher tortoise burrow and saw something stick out its sooty head, look around, and blink twice.

“Sparky!” he yelled with great happiness. “Here boy!”

Sparky let out a joyous bark and came barreling out of the gopher tortoise burrow straight into Jake’s arms. Jake buried his face in Sparky’s neck and Sparky wiggled with glee. Jake looked up at his friends with soot all over his face and a grin from ear to ear.

The friends were so happy that Sparky was alive

they all had to hold him and pet him. Even Ranger Hopkins got all dirty while congratulating Sparky on escaping the fire.

Everyone walked back to Miss Hopkins' house to share the good news.

Miss Hopkins was excited to hear about the fort. After her nephew jogged her memory about the river she said, "I knew there was a reason why I sent that young man from the college to the tree by the crossroads. Why, I used to play there when I was a girl. I remember sitting up there for hours watching the river. This old brain of mine forgets a lot."

Diana and Tamika smiled at each other and at Miss Hopkins.

"Well, it looks as if we weren't the first ones to sit in that live oak tree," said Diana.

"And you won't be the last, either," finished Miss Hopkins.

"That's right," said Ranger Hopkins. "There were people here in the forest long before we were born, and there will be people here long after we die. That's why it's important to take care of the forest environment now. That

way, it will be here for the people and creatures long after we're gone."

While the friends sat talking on Miss Hopkins' porch, the gopher tortoise, down the dirt road past the crossroads and the big live oak tree, climbed out of its burrow and began chewing on a newly sprouted piece of grass.

