CHAPTER 2

THE MEASURE OF THE MORNING

The laws governing inheritance are quite unknown; no one can say why . . . the child often reverts in certain characters to its grandfather. . . .

THREE DAYS LATER, I crept downstairs and went out onto the front porch very early before the daily avalanche of my brothers could crack open the peace of the morning. I scattered a handful of sunflower seeds thirty paces down the drive to draw the birds and then I sat down on the steps on a ratty old cushion I'd scavenged from the trunk room. I made a list in my red leather Notebook of everything that moved. Isn't that what naturalists do?

One of the sunflower seeds hopped across the slate tiles of the front walk. Odd, that. On inspection it turned out to be a tiny toad, a quarter of an inch long, hopping mightily after an escaping millipede, itself no bigger than a thread, both going for all they were worth until they disappeared in the grass. Then a wolf spider, startling in size and hairiness, streaked over the gravel, either chasing something smaller or being chased by something bigger, I couldn't tell which. I reckoned there must be a million minor dramas playing out around the place without ceasing. Oh, but they were hardly minor to the chaser and the chasee who were dealing in the coin of life and death. I was a mere bystander, an idler. They were playing for keeps.

Then a hummingbird careened around the corner of the house and plunged into the trumpet of the nearest lily drooping in the heat. Not finding it to his liking, he abruptly backed out and explored the next one. I sat a few feet away, entranced, close enough to hear the angry low-pitched buzzing of his wings, so at odds with his jewel-like appearance and jaunty attitude. The bird paused at the lip of a flower and then turned and caught sight of me. He hovered in midair for a second and then rushed at me. I froze. The bird stopped four inches shy of my face and hung there, I swear. I felt the tiny rush of wind from his wings against my forehead and, reflexively, my eyes squeezed shut of their own accord. How I wish I'd been able to keep them open, but it was a natural reaction and I couldn't stop myself. The second I opened them, the bird flew off. He was the size of a winged pecan. Fueled by rage or curiosity—who could tell—he cared not at all that I could have crushed him with the lightest swat.

I had once seen Ajax, Father's best dog, get into a fight with a hummingbird and lose. The hummingbird had dived at him and spooked him until he'd trotted back to the front porch, looking very embarrassed. (It is possible for a dog to look

embarrassed, you know. He'd whipped around and started licking his nether parts, a sure sign a dog is trying to hide his true feelings.)

The front door opened, and Granddaddy came out onto the porch, an ancient leather satchel strapped over his shoulder, a butterfly net in one hand, and a malacca walking stick in the other.

"Good morning, Calpurnia," he said. So he knew my name after all.

"Good morning, Granddaddy."

"What have you got there, if I may ask?"

I jumped to my feet. "It's my Scientific Notebook," I said grandly. "Harry gave it to me. I write down everything I observe in it. Look, here's my list for this morning."

Observe was not a word I normally used in conversation, but I wanted to prove my seriousness to him. He put down his satchel, and it made interesting clinking noises. He took out his spectacles and looked at my list. It read:

cardinals, male and female
a hummingbird, some other birds (?)
rabbits, a few
cats, some
lizard, green
insects, various
C. V. Tate's grasshoppers, big/yellow and small/green (these are the same species)

He took off his spectacles and tapped the page. "A fair start," he said.

"A start?" I said, hurt. "I thought it was finished."

"How old are you, Calpurnia?"

"Twelve," I said.

He looked at me.

"Eleven and three quarters," I blurted. "I'm practically twelve. Really. You can hardly tell the difference."

"And how are you coming along with Mr. Darwin and his conclusions?"

"Oh, it's marvelous. Yes. Marvelous. Of course, I haven't read the whole thing yet. I'm taking my time." Truthfully, I had read the first chapter several times and found it to be heavy weather. I had then jumped ahead to the section on "Natural Selection" but still struggled with the language.

Granddaddy looked at me gravely. "Mr. Darwin did not write for an audience of eleven-and-three-quarters-practically-twelve-year-olds. Perhaps we can discuss his ideas sometime. Would you care to do that?"

"Yes," I said. "Yessir, yes."

"I am going to collect specimens at the river. Order Odonata today, I think. Dragonflies and damselflies. Would you like to accompany me?"

"Yes, please."

"We shall have to take your Notebook." He opened the satchel, and in it I saw some glass jars and *A Field Guide to the Insects,* his lunch packet, and a miniature silver flask. He tucked

my red Notebook and pencil in beside it. I picked up his butterfly net and slung it over my shoulder.

"Shall we?" he said, and offered me his arm in the manner of a gentleman taking a lady in to dinner. I linked my arm through his. He was so much taller than I that we jostled each other down the steps, so I let go of his arm and slipped my hand into his. The palm was calloused and weathered, the nails thick and curved, a miraculous construction of leather and horn. My grandfather looked startled, then pleased, I think, although I couldn't tell for sure. Nevertheless, his hand closed on mine.

We picked our way across the wild field to the river. Granddaddy stopped every now and then to peer at a leaf, a rock, a mound of dirt, things I didn't find terribly interesting. What *was* interesting was how he stooped over and scrutinized each object before extending a slow, deliberate hand. He was careful with everything he touched, putting each bug back where he found it, nudging each pile of dirt back into place. I stood holding the butterfly net at the ready, itching to pounce on something.

"Do you know, Calpurnia, that the class Insecta comprises the largest number of living organisms known to man?"

"Granddaddy, nobody calls me Calpurnia except Mother, and then only when I'm in lots of trouble."

"Why on earth not? It's a lovely name. Pliny the Younger's fourth wife, the one he married for love, was named Calpurnia,

and we have been left by him some of the great love letters of all time. There's also the natal acacia tree, genus *Calpurnia,* a useful laburnum mainly confined to the African continent. Then there's Julius Caesar's wife, mentioned in Shakespeare. I could go on."

"Oh. I didn't know that." Why hadn't anyone ever told me these things? All my brothers except for Harry bore the names of proud Texas heroes, many of whom had laid down their lives at the Alamo. (Harry had been named after a bachelor great-uncle with lots of money and no heirs.) I had been named after my mother's older sister. I guess it could have been worse: Her younger sisters were Agatha, Sophronia, and Vonzetta. Actually, it could have been *much* worse—like Governor Hogg's daughter, Ima. Gad, Ima Hogg! Can you imagine? I wondered if her great beauty and massive fortune were enough to protect her from a lifetime of torture? Perhaps if you had enough money, no one laughed at you for anything. And me, Calpurnia, with a name I'd hated all my life, why . . . why, it was a *fine* name, it was *music,* it was *poetry.* It was . . . it was incredibly *annoying* that no one in my family had bothered to tell me any of this.

So, then. Calpurnia would do.

We pushed on through the woods and the scrub. For all his age and his spectacles, Granddaddy's eyes were a lot keener than mine. Where I saw nothing but leaf mold and dried twigs, he saw camouflaged beetles, motionless lizards, invisible spiders.

"Look there," he said. "It's Scarabaeidae, probably *Cotinus texana*. The fig beetle. Quite unusual to find one in a drought. Take it in the net, gently now."

I swished the net, and the bug was mine. He extracted it and held it in his hand and we examined it together. It was an inch long, middling green, and otherwise unexceptional in appearance. Granddaddy flipped it over, and I saw that its underside shone a startling greeny-blue, iridescent and shot through with purple. The colors changed as it squirmed in dismay. It reminded me of my mother's abalone brooch, lovely and rare.

"It's beautiful," I said.

"It's related to the scarab beetle, which the ancient Egyptians worshipped as a symbol of the morning sun and the afterlife. Sometimes they wore it as jewelry."

"They did?" I wondered how you'd get a beetle to stay on your dress. I had visions of sticking it on with a hatpin or perhaps wallpaper paste, neither of which seemed like a particularly good idea.

"Here," he said, and held it out to me.

He tipped it into my palm, and I'm proud to say I didn't flinch. The beetle tickled as it wandered over my hand.

"Should we keep him, sir?" I asked.

"I have one in my collection in the library. We can let this one go."

I put my hand to the ground, and the bug or, rather, *Cotinus texana* stumbled off and wandered away unconcerned.

"What can you tell me about the Scientific Method,

Calpurnia?" The way he said these words, I knew they had capital letters.

"Um, not much."

"What are you studying in school? You do go to school, don't you?"

"Of course I do. We're studying Reading, Spelling, Arithmetic, and Penmanship. Oh, and Deportment. I got an 'acceptable' for Posture but an 'unsatisfactory' for Use of Hankie and Thimble. Mother was kind of unhappy about that."

"Good God," he said. "It's worse than I thought."

This was an intriguing statement, although I didn't understand it.

"And is there no science? No physics?" he said.

"We did have botany one day. What's physics?"

"Have you never heard of Sir Isaac Newton? Sir Francis Bacon?"

"No." I wanted to laugh at this ridiculous name, but there was something about Granddaddy's expression that told me we were discussing mighty serious business and he would be disappointed in me if I didn't take it seriously, too.

"And I suppose they teach you that the world is flat and that there are dragons gobbling up the ships that fall over the edge." He peered at me. "There are many things to talk about. I hope it's not too late. Let us find a place to sit."

We resumed our walk to the riverbank and found shade under a hospitable tree in the pecan bottom. Then he told me some stupefying things. He told me about ways in which you

could get to the truth of any matter, not merely sitting around thinking about it like Aristotle (a smart but confused Grecian gentleman), but going out and looking with your own eyes; about making your Hypothesis and devising your Experiment, and testing by Observation, and coming to a Conclusion. And then testing the strength of your Conclusion, over and over. He told me about Occam's razor, about Ptolemy and the music of the spheres, and how everyone had been all wrong about the sun and the planets for so many centuries. He told me about Linnaeus and his system for naming all living things in Nature and how we still followed this system whenever we named a new species. He told me about Copernicus and Kepler and why Newton's apple fell down instead of up. About how the moon is always falling in a circle around our Earth. About the difference between deductive and inductive reasoning and how Sir Francis Bacon of the peculiar name got it right. Granddaddy told me how he had traveled to Washington in 1888 to join a new organization of gentlemen who called themselves the National Geographic Society. They had banded together to fill in the bare spots on the globe and to pull the country out of the morass of superstition and backward thinking in which it floundered after the War Between the States. All of this was heady news of a world far removed from hankies and thimbles, patiently delivered to me under a tree amidst the drowsing bees and nodding wildflowers.

The hours passed, and the sun moved overhead (or to be

correct, we moved below it, rotating slowly away from the day and toward the night). We shared a thick cheese-and-onion sandwich and a wedge of pecan pie and a canteen of water. Then he took a couple of nips from his silver flask, and we napped awhile as the insects buzzed and ticked and the dappled shade shifted around us.

We awoke and dipped our handkerchiefs in the river to refresh ourselves, then poked our way along the bank. I caught various crawling and swimming and flying oddities at his direction, and we examined them all, but he kept only one insect, putting it in a Mason canning jar with holes poked in the lid, which I knew had come from our kitchen. (Viola constantly complained to Mother that her jars were disappearing, and Mother in turn always blamed my brothers, who were—as it turned out for the first time in recorded history—blameless.) There was a small, neat paper label pasted on the jar. I penciled the date and time of collection on it as instructed, but I didn't know what to put for the location.

"Think about where we are," Granddaddy said. "Can you describe it concisely so that you can find this spot again if you have to?"

I looked at the angle of the sun through the trees and thought about how far we had walked. "Can I put one half mile west of the Tate house, near the three-forked oak?"

Yes, that was fine. We wandered on and found one of the regular deer paths dotted with droppings. We sat down and

waited in silence. A white-tailed doe came by, making no sound. I could almost reach out and touch her. How could such a large creature move so silently through the snapping underbrush? She turned her long neck and looked right at me, and for the first time I understood the expression "doe-eyed." Her deep brown eyes were huge, her gaze gentle and melting. Her large ears flicked in all directions, independent of each other. A shaft of sunlight caught the blood-rich ears and turned them a brilliant pink. I thought she was the most gorgeous creature I'd ever seen, until a few seconds later her spotted fawn meandered into view. Oh, the fawn broke my heart with its sweet, dished face, its absurdly fragile legs, its still-fuzzy coat. I wanted to scoop it up in my arms and protect it from its inevitable future of coyotes, starvation, hunters. How could anybody shoot such a beauty? And then the fawn did this miraculous thing: It folded up its front legs, then its hind legs, and sank to the ground where it . . . *disappeared*. The white spots scattered over its brown back mimicked the dappled light so that one second a fawn lay there, and the next second there was nothing but undergrowth.

Granddaddy and I sat motionless for a good five minutes and then quietly collected our things and moved on. We followed the river until the shadows grew long and then we arced through the scrub and made for home. On the way back, he spotted the rarest and most delicate object in the wild, an old hummingbird's nest, fragile and expertly woven, smaller than an eggcup.

"What extraordinary good luck!" Granddaddy said. "Treasure this, Calpurnia. You may go through your whole life and never see another one."

The nest was the most intricately constructed thing, like something built by the fairies in my childhood tales. I almost said so aloud but caught myself in time. Members of the scientific community did not say such things.

"How can we carry it home?" I said. I was afraid to touch it.

"Let's slide it into a jar for now. I have a glass box in the library that will be the right size. You can keep it on display in your room. It would be a shame to hide it away in a drawer."

The library was so much Granddaddy's territory that even my parents seldom went in there. SanJuanna was allowed to dust once a quarter. Granddaddy usually kept it locked. What he didn't know was that on those rare occasions when there were no adults around, my brothers would sometimes boost each other over the transom. My second-oldest brother, Sam Houston, once got a long look at Mathew Brady's book of battlefield photographs and breathlessly reported to us the butchered horses lying in the mud and the shoeless dead men staring at the sky.

We got back to the house around five o'clock. Jim Bowie and Ajax ran out to greet us as soon as they saw us coming up the drive.

"You're in trouble, Callie," J.B. puffed. "Mama's really mad." He ignored Granddaddy. "Mama says you missed your piano practice today."

This was true. Our lessons had started again, and I knew I'd have to make up the practice, plus an additional half hour as punishment. That was the rule, but I didn't care. The day had been worth it. The day had been worth a thousand extra hours at the piano.

We went into the house, and Granddaddy put the hummingbird's nest in a tiny glass box and gave it to me. Then I left him pottering about in the library and went off to plead my case before Mother, to no avail.

I managed to cram my piano punishment in before dinner, playing with a light heart and a sure, spirited touch, if I do say so myself. I went to bed that night exhausted and exhilarated, the hummingbird nest in its neat glass box on my dresser next to my hairpins and ribbons.

A week later, my morning list looked like this:

5:15 a.m., clear and fine, winds from the south
8 rabbits (7 cottontail, 1 jack)
1 skunk (juvenile, appears lost)
1 possum (notched left ear)
5 cats (3 ours, 2 feral)
1 snake (grass-type, harmless)
1 lizard (green, same color as lily stems, vy hard to spot)
2 red-tailed hawks
1 buzzard

3 toads
2 hummingbirds (Rufous?)
assorted untallied Odonata, Hymenoptera, Arachnidae

I showed it to Granddaddy, who nodded his approval. "It's amazing what you can see when you just sit quietly and look."