

LOVE AND THE DRAGONFLY

by

M. D. Coverley

Marjorie C. Luesebrink
aka M.D. Coverley
200 Nata
Newport Beach
CA, 92660

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Chapter 1

THE MOON INSTAR

The Spring Equinox is the signal to begin mating. The nights are balanced against the days, the realms of the sun and the moon are in temporary harmony. As though taking a cue from the eternal movement of stars and planets, the life forms emerge into another season of love.

You can see it on the campus. During weeks of rain, the University will have seemed deserted. Then one day the sun comes out. Bees are humming, spiders are spinning, students are in shorts and barefoot, kissing in the faculty glade, distracted in class. The arrival of spring may seem like an excuse for youthful foolishness, but the bees and the lovers are up to serious business. Instinct has demanded that they get on with procreation. They have only a few brief weeks or years to transfer life to the next generation. Because there's a Fall Equinox, as well. The insects go underground and seem to disappear. The air is different, tissue paper thin and blue at the edges of the shadows. The opportunity will have passed.

This cycle is basic to nature. We organize our lives around the comforting rhythm--everything from language to holidays. Still, things aren't always predictable in the cycle of love, sex, and survival. I'm always amazed to see what happens when it goes wrong, as nature's cycles can. Perhaps, for that reason, April is the cruellest month. All the feverish activity reminds me of the instability of sex and love. The real difficulty at the bottom of it all. The intricacy of mate selection in insects, for example, means that an insect community that fumbles the reproductive moment can die out altogether.

The precision of selection in human beings dictates that we can--through no fault of our own--fall out of rhythm with the mating dance and be some other person ever after. Successful sex requires observation and readiness--you can get wholly out of synch with the reproductive sequence if your timing is wrong. Actually feeling you are under the spell of springtime love is hazardous. Furthermore, and just as important, following instinct in these matters can do as much harm as good.

At the dawn of a typical vernal day, for example, I usually will take Lorna to child care, check my Atta ants at the lab, and walk through the brisk, fragrant air to meet my Entomology 10 class. Some students will have changed seats--a prelude to courtship. We'll talk about the insects--how ancient they are. How they have six legs. Recall how they have provided examples to us--the grasshopper and the ant--and even been seen as friend to man--the wonder of sweet honey. Look at how widely adapted

insects are, their staggering numbers, their variety of mating arrangements.

Everyone is instantly attentive. Reproduction lore is vital information. Students stay to ask questions after class.

"Dr. Despars"--that's my name, Dr. Elizabeth Despars. "Did you say mayflies only live long enough to mate?"

"So, Professor, the black wasps can go how long without producing any males?"

"Why doesn't the preying mantis chick eat something else?"

"Why are there two sexes, anyway?"

What they want to know is what I wanted to know at their age and still find curious. We want to know about the relationship between instinct and sex, between sex and survival, between survival and love. To formulate the question simply: what does love have to do with it?

I cannot answer the question completely. Moreover, the taxpayers of this fair state are not paying me to speculate about uncertainties. I stick to the curriculum.

But, if I were to reconstruct what the insects show us about sex, love, and survival, it would not be science, I'm afraid. Some sort of hybrid--nature and imagination.

I'd start with the story I know, the Moon Instar, beginning with Dragonfly Friday.

* * * *

On a Friday early in April, 1984, Todd Duncan, Insect Ecologist, and I were driving north on the old Highway 99 through the San Joachin Valley. We were returning to Berkeley after a conference in Los Angeles on the social insects. The wide valley was flooded with midday sunlight.

"What are those signs I keep seeing?" Todd asked.

Off to the side of the road were signs marked 0, then 100, then 200 and so on.

"Fog visibility markers. It gets really heavy here some days, tule fog."

Todd was a visiting faculty member, new to our college and our research team, and he nodded in acknowledgement of yet another California anomaly. Then, a little later, as we were approaching the Kings River, a large, silver-grey cloud appeared.

He switched on the headlights. "I guess we found the tule fog."

"I don't think so," I said. This dense, dark mass didn't look familiar.

The first dragonfly struck the windshield with force.

The cloud was growing thicker as it moved toward us. There were red taillights ahead, and Todd slowed the car.

"Too bad," he said. "You like them, don't you?"

He rolled down the window, peered ahead. Then he gave a low whistle.

"Hey, Libby, take a look at that."

Two more dragonflies struck the window in quick succession. Up ahead there was a swarm of dragonflies, and beyond, blanketing the horizon, was a thick cloud of them.

Blue Darners.

Within moments they were everywhere.

In the crush of flying insects, the traffic on the road came to a standstill. Soon the air was heavy with thousands and thousands of suspended, iridescent blue darts and vibrating, green-veined wings. Some of them rode up the mist on an unseen draft, skimming over the roof of the cars, others smashed headlong into windshields, grilles, and hot headlights.

The highway became a clogged drain of automobiles--many motorists were seemingly afraid to get out of their cars; others stopped and made a futile attempt to keep the windows cleaned off.

"Should we chance it?" Todd asked with a grin. He pulled over to the shoulder, leaned across me, and with a sort of graceful double motion gave me a kiss and grabbed a cloth from the glove compartment. Even though that first kiss was inevitable, it came, at that moment, as a surprise.

And so it was the dragonflies that started what I now think of as the Moon Instar. When insects go through several larval stages on the way to sexual adulthood, we call those phases instars. Sometimes the change is small, the insect sheds one

skin, grows larger, and produces another skin. In other species the change is dramatic, as from caterpillar to butterfly.

Humans beings, too, can often identify distinct time spans in their love-and-procreation history. I think of childhood as the First Instar, when we are as innocent as a caterpillar--with no idea of the shape we will take or the life we will pursue when it's time to mate.

The Second Instar must be adolescence. We learn the mating dance, and, if we do it correctly, we enter the Third Instar correctly, marry and bear children.

And, as with the insects, timing is all-important. For some of us, the life phases proceed very smoothly. For another group of us, the process aborts in some way. We lose a mate. Or we find too many. If we fail to find a mate at all, we do not enter the Third Instar when everyone else does. In those cases, it seems the Second Instar will never end, the process has gone off track. We make other arrangements. Then, when some much-delayed, renegade instar suddenly happens--call it the Moon Instar--we are wholly unprepared. The Moon Instar came on me with the force of the original dragonfly. And it played itself out with the same bewildering finality.

How had we landed up here, anyway? As I said, on this particular day in April, Todd Duncan and I were driving home from a conference at U.C.L.A. on the ants, bees, and wasps. Because he was new to California, he said, he wanted to take the long way

home--see more of the state. So we had taken the old road through the central valley.

I hadn't been on that road in a long time. When I was a child, there had been an unending aisle of huge trees, like a bridal canopy arching over the highway. More recently, some of the trees had been cut or had died off in long stretches. Now, often, the highway was bordered with sorry-looking grape fields marred with rusting farm equipment, auto repair yards, ramshackle towns. In the areas by the rivers, the road looked the same. I kidded him about whether it was worth it to meander through Bakersfield and Pixley and Earlimart.

"The virtue of this road," he had announced, "is that I get to spend more time with you. I hope it takes twice as long."

That kind of talk was surely a prelude to intimacy of some kind. But he hadn't followed up on it. Along we went on Highway 99 talking about the same thing we did at the lab every day--the Atta Ant Project.

Our Atta sexdens are interesting, for ants. They are an advanced species with several distinct castes--queens, males, little workers, big workers and so forth. Our experiments focused on reproductive behavior. In the Atta sexdens nest there is a head queen, and then there are other queen ants, sisters of the queen, who also live in the nest. I call them Spinster Queens. If our research succeeded, we would be able to prove

that the sisters of the queen, can reproduce but choose not to.
Sex versus survival.

It didn't seem necessary to drive hours out of our way to have this conversation.

And then the dragonflies came. I no longer cared how slow the road was or how fast I was losing my reason.

After that kiss, I faked a level of composure I did not feel--straightened my skirt and tucked my hair behind my ears, in a scholarly and professional manner.

"Do you really think we should risk our lives with the devil's darning needles?" I asked.

He smiled at the reference. In folklore, dragonflies are called the "devil's darning needles" because they are supposed to sew up the eyes of little children, rendering them blind.

"Hardly matters now," he said.

We got out of the car, and, while Todd wiped off the carnage of broken exoskeleton, twisted wings, scattered facets of huge, liquid, compound eyes, and bursts of blood stain like dying suns, I studied the dragonflies.

"Funny time of year for them to be migrating," he said.

I nodded absently, and then I realized what was happening.

"They aren't migrating," I said, "they're mating."

So we stood in the swirling dance and smelled the new spring smells coming off the river beyond the trees and watched the dragonfly wedding.

I felt a sense of awe and regret. Dragonflies are old, old creatures of the insect kingdom--they are living fossils that looked the same--only much bigger--even hundreds of millions of years ago. That means that they have been very successful in their own niche. They like sunlight and rivers and lakes.

This group, though, was lost.

Long ago, when the dragonflies evolved, there was only the river; the river had been there since the land. When the highway was built, the State planted rows of eucalyptus along the highway. The old river still looked like a long, bright, strip between a row of trees. And now the highway looks like a long, bright strip between a row of trees. The dragonflies have limited means of gathering information. Their senses are keen--but only for certain pieces of reality--they make decisions based on available clues about reality. That day, the highway, with its continuum of sparkling, bright cars gave more river clues than the river itself.

The dragonflies were doing what instinct had told them to do since the Jurassic Age; only now, tricked by the resemblance of highway to river, they had made a mistake.

"You'd hope they'd find their way back to the river," Todd said, "but they're already defining territory."

Rooted and running.

Face to face with the exactitude of survival, I always feel

a sense of sadness. Not only the dragonflies, but all species, put a lot of effort and planning into getting an opportunity to mate. You hate to see it go awry.

We watched as the entire dragonfly cloud came over, hordes of them, darting, shooting, hovering still, off again, bright blue and iridescent green in the flying air. The males came first. Each chose an area over a car and defended his territory in symbolic fashion, against late-comers or rivals. The rhythmical, penetrating hum of wings was broken only by an occasional honk, mournful or agitated.

Now, I have seen dragonflies mating in the Kalahari desert, and I have seen tombo mating in breathstopping beauty over expanses of quiet lake in Japan, and I have seen dragonflies and damselflies of infinite variation: lavender, ultramarine, coppery brown, apple green, azure, scarlet, crimson, lilac, cerulean blue, blood red, ivory. But I have never felt the urgent excitement of the explosion of electric-blue females sparking into this male domain.

One by one, each eager female was snagged by a male.

The male dragonfly has a peculiar adaptation for sex, a clasping organ that fits the female of his species like a key in a lock. Once united, the dragonflies are free to copulate, hour after hour, at their leisure, ecstatic, fixed together in air.

So they did.

But Stop.

Imagine these thousands of dragonflies in sensual airborne pairs of a spring day, flashing blue-beautiful against the white, veiled sky. While you watch their intercourse, let me tell you what was sad:

In the first place, not all of the females found mates. Dragonflies select sex partners on the basis of shape and color. Naturally, the females snatched first were the largest, of the most exciting cobalt blue. Naturally, the smaller, duller ones went wanting, waiting, perhaps, for another night, later in spring when the ranks thinned out. Perhaps. But that particular night, the leftover ladies flew leadenly along the car tops, usually ignored by the mating couples, but sometimes openly attacked by them.

And, even the successfully-mating dragonflies would be victims of their curious miscalculation. Usually, dragonflies mate over water. Shining, rippling water acts as a stimulus for copulation. Nature has undoubtedly dictated this particular love-site out of consideration for the exhausted female. After several hours of strenuous sex play, her mate gently accompanies her down to the water's edge where she lays her eggs.

Dragonflies have been mating over water for 300 million years. Man has invaded the landscape with polished cars for about ninety years.

The offspring from this amorous afternoon would never hatch in the home river. For, when the dragonfly lovers finally glided

down onto what they thought was a shining, dark river, they would find, instead, a row of shiny automobiles.

The dragonflies were spread out over the highway ahead for at least a quarter mile. As the Blue Darners danced in formal courtship pattern, some cars tried to start up again and move through the dense, noisy air. Todd went around to the trunk and started rummaging.

"I wonder if Jake left his camera in here somewhere," he said. Jake was his ten-year-old son. "Are you cold?"

I nodded. Not cold, but certainly chilled.

He brought back an aqua blanket, wrapped it around my shoulders, and began to adjust the camera.

"Pictures would be good--always helpful in field research."

Todd preferred "field" research to working in a laboratory. That was why he was on loan to our university.

His natural restlessness was already a source of amusement to Waldheimer and Pardee--two other scientists on the project. Todd would do paperwork for about one hour, tops, before he would need to do something else--observe the ants or better yet, invent some investigation outdoors. He'd come back refreshed and say: "Well, that was worth seeing." And Pardee, still in the same spot, would say: "Yes, but was it worth going to see?"

Todd snapped a picture of me as two dragonflies swooped low over my head.

"What kind of field research is this?" I asked.

"The best kind." He grinned. "I want to remember you, besides."

"Remember me from what?" We had only known each other a couple of months.

"From Before."

* * * *

From Before.

Rusty as I was as the language of amour, I knew what he meant.

From before we made love.

You probably want to know what happened before, too.

I had first seen Dr. Todd Duncan in January--about three months before Dragonfly Friday.

He came for an interview, sort of.

We--the Atta Research Group--were puttering around in our usual way in the insectary at the Oxford Research Tract. The Tract is a clump greenhouses across the street from the north-west boundary of the campus. The natural-light labs sort of ramble across a big, weedy lot. The insectary, though, is a closed, warehouse affair. The inside is mostly taken up with the large enclosures for the ants. I was working with our prize colony of Atta sexdens--waiting to begin a meeting my co-director, Allan De Witt, had called.

Because of the layout of the lab, and to avoid disturbing the ants, we always communicated across the room in a shouted whisper.

So De Witt soft-shouted: "Everyone get ready for the interview, folks."

De Witt always moved his slender body briskly; his green eyes shone with the fulfillment of purpose. He was the political half of the management team and was always calling meetings of one kind or another.

Waldheimer, his long face reflected in his elaborate glassware, grumbled. "What interview?"

"Our candidate for the Insect Ecology position, Dr. Duncan." De Witt said cheerily.

"He's already hired," Waldheimer objected, "so why do we have to interview him?"

"He's over at Sproul Hall now," De Witt said, ignoring Lars Waldheimer and coming over to me. "Would you escort him down here, Libby?"

Although I didn't know Dr. Duncan, his reputation had preceded him, as they say. But I was far into my Second Instar and had long since taught my heart not to leap at the prospect of a handsome man.

"Do I look like the errand boy?" I asked.

"Pardee won't go and Dean Sylvester will be here in five minutes."

All of this was true. Pardee never left the computer. De Witt and Waldheimer were in the middle of a quarrel. Dean Sylvester liked to start department business on time. I got my coat and went to the door.

I put in a plug for full disclosure.

"For what it's worth, I think next time we should all agree on a new team member beforehand."

Out I went, miffed that De Witt had maneuvered us into already hiring this character. De Witt was constantly networking, setting up deals, and concocting elaborate plans that depended upon split-second timing and everyone being on the same page. None of the rest of us worked that way, science didn't work that way. I lived in perpetual fear that De Witt's brinkmanship would end up costing us something important.

Todd Duncan was just another example. As far as I could see, Duncan's job was hinged to some as-yet-unspecified money for Amazon research which was hinged in turn to pressure from the Agriculture Department about pest control. I knew that Duncan was from Yale. He was slated to open a research station on the Amazon River in the near future. But the work had been held up. De Witt seem to have struck a deal whereby Duncan would come to Berkeley for a semester or two as a visiting professor. He would familiarize himself with our work. Then, in exchange for some funding, we would get a share of the Amazon station.

It was a good arrangement for Dr. Duncan. He got a nice vacation in San Francisco; he got more money for his field research. Down the line he would get some free graduate students.

Other than a footprint in the Amazon, I'm not sure what we were supposed to get. De Witt assured us and everyone else at the department that Duncan could give the University a better funding base for research on the Atta leaf cutters, and other benefits to follow. But Todd's interest in the Amazon was in communal spider behavior--he wanted to study the amazing superorganism, the "Friendly Reds." But one does not turn away scientists of his caliber.

So we had Duncan, and for this, I am unwillingly but eternally grateful to De Witt.

The day was cold and fresh and the sky was tumbled with white and black cumulus clouds as I hurried along the south fork of Strawberry Creek. It was the kind of Berkeley day that leaves you breathless anyway, but I was panting by the time I got to the steps of Sproul Hall. He was waiting.

"I came out here when they said you were on your way," he said, "I knew I'd recognize L.D., expert on the Spinster Queens. You're even better looking than they say." He took a closer look. "Are you OK?"

Only in love at first sight.

Even though at that time I had forsworn love and sex.

Before we even got back to the interview, I was captivated. He walked beautifully. He had a slender, medium build, a flashing smile (he had a gold cap on one of his lower incisors that seemed to wink at you), intelligent, dark eyes.

I should have been checking my protective carapace for signs of cracks in the shell. Instead, I wanted him on the project forever.

Duncan came to work with us two weeks later.

Despite my enthusiasm for our new team member, I harbored no thought of any but a platonic relationship, as it used to be known. As far as I was concerned, we were colleagues, and so we would stay.

First, because I valued my career. I'd worked hard to become Dr. Elizabeth Despars. Even before I'd entered graduate school, I could hardly wait to become a real scientist, an independent genius who would hole up in some Gothic-style laboratory, do interesting, far-out research, experiment, ponder, and contribute staggeringly to the wealth of world knowledge.

By the time it became clear that these aspirations had nothing to do with the realities of science at a large university, I had found a niche. I joined up with a mentor, Malcolm Evanson, and began to concentrate on the social insects. I got my Doctorate. I was starting to take a place in the "scientific community." I was thrilled to get hired in a

tenure-track teaching and research job at U.C. Berkeley, and I couldn't imagine doing anything that would interfere with my permanent appointment.

Next, as I mentioned, I knew something had gone wrong with my Second Instar and so was resigned to living an airtight, solitary life.

Then, too, I'd seen all the paperwork, so I knew everything of official and unofficial importance about Todd Duncan. Official: he had a wife and son. Unofficial: he flirted but always went home.

Finally, it really was against all my principles to get involved with someone who was already taken. Second-round draft choice was OK, but not second fiddle forever.

* * * *

What a strange day, what a change of skin: the odd choice of 99, the sudden kiss, the marking off of the time Before.

The dragonfly wedding night showed no signs of breaking up.

After an hour, we were in a close embrace, more concerned, I admit, with the fate of our own bodies than that of the hapless darners. We crept carefully back into the car.

"You know," he said then, "I've never met anyone like you. You're so, I don't know, independent and smart and adventuresome

and nice to kiss. If I asked you a couple of questions, would you say yes?"

"No guarantees," I said, "but I'll forgive you."

"Two important questions, then," Todd said, "will you stay with me tonight and will you go to the Amazon with me?"

This was the critical moment. I hesitated a few seconds, just to figure out if he really meant it. In retrospect, the hesitation wasn't nearly long enough.

"In that order. Yes...."

He sighed.

"To the first one. But," I pointed out, "the funding says you get to go to Brazil with some graduate students. I wasn't included."

"I'll lobby De Witt. Leave the money to me."

The worst thing about science is you spend more time getting money to do research than doing the research. At Berkeley, Entomological Studies is in the College of Natural Resources. Some members of the academic community still think insect study is confined to crop pests and killer bees. "Pest" is the operative word in their vocabulary. Despite the fact that the Atta Project started with no commercial expectations, when De Witt joined us we were soon "on the lookout" for ways to control ant populations using their own life cycles.

To be fair, with De Witt we were more "fundable." The Atta probably do more crop damage than any other insect species. In

some tropical countries, like Honduras, only manioc and bananas can be grown--everything else falls to the mighty Atta leaf cutter colonies. Money was available to exterminate ants.

Yet, even with a possibility of "practical application," every year we ran the Atta Project we waited uneasily through spring and early summer to see if our grant money would come through.

"I'll bet you're great in the field. You loved Africa, didn't you?"

"Ummm." I could recall clearly in my mind the Kalahari desert and Malcolm Evanson and the termite mounds. Then, just for an indulgent moment, I imagined up a very different landscape. Technicolor, the two of us, Todd and I, together in the primitive beauty of the rain forest. This was very tempting. This was very silly, too. The jungle is not a good place for outdoor love-making.

I smiled anyway.

"We'd be together. What do you say," Todd whispered, putting his arms around me again, "we could use the dragonflies as an excuse not to go back to Berkeley tonight."

"If we don't go home tonight, where will we stay?" I asked.

He gave me one of those you-don't-have-to-be-a-Ph.D.-to-ask-a-dumb-question looks.

I defended myself: "Oh, come on," I said, "you're not going to tell me you have reservations at some cozy bed and breakfast in Napa Valley, just by accident."

He protested that he certainly wasn't that conniving--we could find a place to stay in Fresno.

I nodded. Even though I knew some part of me had already considered making love to him, maybe as far back as the steps of Sproul Hall, certainly when we met the dragonflies, I was flooded with confusion. In spite of the finest of resolutions, I was forgetting all my careful plans for survival. All of my artfully-constructed reality was scrambled. I was being compelled by instinct, and instinct, as in the case of the dragonflies, can be disaster.

Todd asked: "Are you brooding? Libby? Are you upset because you didn't really mean yes?"

"I meant it." I said. Up front, no whining, devil-take-the-consequences yes. The Second Instar, my life of solitary dedication to science, was over.

He started the engine.

Scanned for a news report.

We picked up Fresno. No mention of the dragonflies.

"Ah, the media," he lamented, "missing the two biggest stories of the year."

"Two?"

"The dragonflies and, we are, aren't we, in love?"

We pulled back onto the highway.

The Moon Instar was underway.

Chapter 2

THE MOTH AND THE FLAME

As the dragonfly revels ended, Todd and I continued north. For a while we listened in silence to the crackling of insect bodies beneath the wheels and then it was just another quiet evening with the lights of isolated farm houses winking on across the dark fields.

I studied his profile. This was a new luxury. A luxury I accorded myself only now that he was the beloved. His eyes were wide set. His nose, regular and straight. His lips full. His hair fine and wavy. Unremarkable, really. A condition that has never stopped the lover from obsessing on the beloved. I'm prepared to concede at the outset that one reason for having two sexes is that we find each other so unaccountably attractive.

At this time and shadowed by this light, Todd was all I ever cared to know of passion. Even the curve of his shoulder in the fabric of his blue broadcloth shirt was ripe with promise.

"Any minute now I'm going to demand equal rights, so that I can gaze at you, too," he said. He gave me a wide, expectant smile. "Do you want the map?"

I didn't need it, but I got it out of the glove compartment anyway.

Having the map in my shaking hands brought me up short. There was a big yellow patch for Los Angeles, and there was a black dot for Berkeley, and they were connected by some thick lines that represented the major highways. The roads tangented the state of California like earthquake fault lines. And most of what had happened in my life was associated with these patterns. The map of the state was as familiar as the creases of my own palm. The map of my life was unrecognizable.

I studied the map to avoid staring at Todd for a while. L.A. and Berkeley had stayed where they belonged. I was the one lost in my own territory. So what did it mean, this third, Moon Instar? From the beginning of my Second Instar, adolescence, I had tried to be in step with the mating conga line--and I had learned some of the moves, but I had come up empty-handed--no lifetime mate. When I'd finally admitted there was something wrong with me, the only thing to do was to marry my second love, science. Finally, at the advanced age of thirty-four, and all out of flux, I believed I had found the chance of my life. It was way too late to do a proper Third Instar, marry and bear children, but it wasn't too late, perhaps, for love.

The quiet, the darkness, and the lights sliding by made me remember coming home from visiting my grandma when I was a child. The car would be silent, my parents in reverie in the front seat,

my older sister, Anne, usually asleep beside me. That was the time of great wonder--the First Instar.

We probably all have similar experiences during our First Instar. Whether we are rich or poor, gregarious or withdrawn, native or new, we all work hard at our apprenticeship. We try to find out what is this about?

"Do you think people have instars?" I asked him.

"Do you mean molting? A leopard change his spots, a snake change his skin?"

"More than that, whole alterations of being."

"Oh, you mean as in sexual metamorphosis. Transformation."

The headlights illuminated a sign that said Fresno was 40 miles ahead.

"Yes."

"If you want to look at it that way. Adolescence? It's gradual though, not like a moth."

"Well, a moth spends a lot of time in the cocoon, considering her life span."

"Some longer than others?" He gave me a long look. "When I first met you, I fell in love right away. But I was put off a little by your reputation."

"I know," I said, "Do they call me the Spinster Ant or something?"

"Only to your face--in fun. Out of range you're the Ice Queen. Do you think that's true of you? Is that why you never married up to now?"

"No, I couldn't get it straight from the start," I said. "I can remember, on this very road--during the whole ride I'd brood about the human condition--especially love, marriage, and the sexes...."

"A diligent twelve-year-old?"

"Much earlier than that." I told him about how conflicted I'd been--wanting to do the normal things in the right order, but not wanting to end up like the adults I knew.

For one thing, I said, I couldn't figure out how adults got together and why they stayed together. Not the physical act: I assumed the man and the woman went to the doctor and he did something with a rubber hose and the woman came home pregnant. (This was a scientific inference I drew from jokes about dogs and garden hoses--which is why logic can be misleading.)

"Jesus, Libby."

No, not that.

Instead: How did they choose each other--how did that happen?

All children wonder about this, I guess. Right in front of you is, let's say, my Uncle George and my Aunt Caroline. As unlikely a mating pair as could select itself out of the population. She, bleached hair, flowered leggings, always

talking when she wasn't singing old rock-and-roll tunes or scarfing down turkey skin in the kitchen. He, marathon-runner-thin, taciturn, a picky eater. Did he go looking for her, or she for him?

And how hard did they look? My other aunt, Aunt Punky, was thin and nervous, her husband fat and jolly. Why didn't the two couples switch?

O.K., they didn't switch because they were madly in love. Caroline and George? Nah.

Since neither couple appeared to rightly belong to each other, the next best guess was that they were soul mates.

Negative there, too. I saw companionship, tolerance, and even politesse--but no evidence of deeper communication--not between Caroline and George, who were, after all, my study subjects--nor in others.

I excluded my own parents for the usual reason--one cannot easily imagine one's parents having sex at all.

Elsewhere, too, I heard a welter of anything-but-love feelings often, not only when family women were together, but eavesdropping on my mother's friends, too, on bridge-playing days. The concept gradually dawned that some of them never were in love. People got married for lots of reasons. Sometimes, as I later found out, they "had" to. That was the case for Caroline and George.

But "had" to meant that at least on some occasion, sparks were flying. Maybe not love, but an important prelude. What had happened to that?

Todd laughed. "That's a big question for married men, for sure."

Another thing I noted, I went on, was something peculiar about the division of labor and fun. In my First Instar, I didn't worry too much about it because I had decided to grow up to be a boy. But I noticed it.

Fact: all the women waited on all the men. I concluded this practice was not a mere aberration of my home--and perhaps the homes of a few of my friends--it was universal. The men would sit around watching the sport-of-the-day on the television, while the women--my mother, her mother, and her five sisters--would set tables, mind kids, cook dinner, clear dinner, do dishes, do dessert, wash dessert, serve coffee, and bundle kin and leftovers for the trip home.

Tentative fact: the men got to do exciting things and think about interesting issues. The men went fishing, hiking, hunting, swimming, and, once, riding in helicopters. Sometimes they'd take Annie and me and our cousins. The mothers did not go.

Though the division of labor and fun was perplexing, I wasn't very threatened at first by these observations. I felt pity for my mother when she seemed to spend most of our vacations--even at the beach with just the four of us--cooking

and washing clothes. I can remember how she would put her bathing suit on in the morning as a kind of luck charm--insurance that she would get at least an hour to sit on the beach that day.

Similarly, I regarded the strong, capable women in the kitchen, basting turkeys and mashing potatoes, with awe and sympathy--not conspiracy.

The reason for a lack of concern about myself in those roles was that I still assumed that womanhood of this sort was a voluntary sentence. My aunts complained about cleaning the fish my uncles brought home--but I never once heard one of them complain about the whole ticket. Surely security was a big part of the package--the thing that made it palatable. But I underestimated the value of security. So it was easy to assume they had elected their status and liked it that way.

When all the daily gripes had been aired, someone--my Aunt Caroline or my Aunt Punky--summing up the situation in general--would say to me: "Still, we are lucky to be women, remember that, Libby." (I had already picked up this prophetic diminutive "Libby" because my great aunt had been an Elizabeth, too, and she had been called Libby. I insisted on the more chic "Beth" for awhile, but it never stuck. Later, in high school, I was briefly uncomfortable with the name--while I was still hoping to be noticed by football players--and then I decided to keep the name Libby, after all.)

"So, before I ever got to puberty, I had decided to be a boy," I said.

"You'll get no argument here," Todd agreed. "Definitely the right choice."

Simple.

Ah, the insulated bliss of childhood!! Another thing I wasn't at all clear on was the permanence of one's sex. Pinocchio had managed the change from puppet to "real boy" by studying his lessons and telling the truth. I hoped that the same program would let me grow up to be a real boy. I decided if it was all the same to everyone else, I'd like to be in the half that got to fish, sail, water ski, watch tv, and have opinions. Accordingly, I was a model child. Just to be sure, though, I began to consult all the books I could to be prepared for opportunity when it came.

"The veritable birth of the scientific mind," he said.

"As long as you're under eleven years old," I said.

And then one day, in a flash, Instar One is over. The certainty of the future evaporates.

One day you and your sister Anne and your friends are building sand castles on the beach like you always do and the next day they are all watching the boys play volleyball. Stunning.

You turn twelve. You feel that, if it's still all the same to everyone else, you'd like to stay a while longer in the body you are finally getting comfortable with.

But it is not all the same to everyone else or, more importantly, it is not all right with the agent in charge here, the real tyrant, the genetic code.

The onset of puberty was a profound disappointment to me. I was forced to acknowledge the inevitability of the unthinkable. Not only was I forever a girl--I was most certainly destined to become a woman. Instar Two had begun.

Once I accepted the period nuisance, funny little breasts, and tight skirts, I tried to do all the correct adolescent-girl things--to figure out how one went about finding a mate, how the mating dance was done. It was like starting all over with a new set of rules.

Still, I remained convinced that research, knowledge, and preparation would allow me to somehow find a mate and still escape the worst parts of womanhood. I poured over the texts--Glamour, Seventeen, my sister's romance novels. Assembled the right equipment: lipstick, eye makeup, bikini underwear. Took up giggling.

My sister Anne was a success, so she did what she could to help me along. She arranged blind dates, she coached me. After a while I could troll on my own, I just couldn't seem to hook a fish--and I wasn't exactly sure when the right time was to pull

one in, either. Anne was still fixing me up for dates when I was in my twenties. She began to get weary of this job when I entered graduate school--"Men don't want you to be smart, Libby, they want you to look nice. They don't want to marry big science."

Todd said, "Some of them don't."

Finally, when I moved into my little house on Le Conte Avenue, unquestionably single, and carrying all the credentials of an unreformed academic woman (the fallback position), even Anne conceded failure.

Time went by and went by and I did not marry.

And now, Instar Three. Totally unexpected. The genetic code reasserts itself again, will not give up the urge to love without one last fight, and keeps on until it gets its way. Moon Instar.

"I'm glad I found you right now," he said. "Before it was too late."

* * * *

So the night sped by as we talked of life passages, genetic injustices.

Todd's face alternated between darkness and the sudden illumination of oncoming lights. I thought how different the instar process must be for a boy--clearer maybe, maybe

undetected except for that awkward period in early teens--big feet and pimples. Todd's transitions, I imagined, would have been smooth. He was decent looking, athletic enough, easygoing. He would have gone from childhood to the dreaded Instar Two with ease. And then he had succeeded in following the genetic timeline. He found a mate, fathered a child, took a job, and settled happily into a normal Instar Three--all at the right times, it seemed.

"When did you first know you were going to grow up to be a man?" I asked him in a little while.

"As opposed to what?" He asked.

"I don't know. As opposed to staying a little boy, let's say, or deciding to be a woman?"

"Is this a trick question, Dr. Freud?"

"Absolutely."

"O.K. Let me give it a try and then you tell me--we can't have you leading the witness."

The beams of the next car came and went.

"The first time," Todd said--his voice changed timbre, higher and clear--"the first time wasn't when you'd think, not when I first got laid. It was the day I quit football. Of course the season hadn't actually started. We'd had a few practices and I'd been on the field some. Very little some. The four guys ahead of me were bigger and stronger--but that wouldn't

have made a difference to me. They were better. That made a big difference. They were lots better."

I wasn't surprised that this perfectly accomplished scientist traced his insecurities to a sports-related event. Scratch a concert pianist and he'll tell you how he wasn't good enough for the soccer team. For men, sports competition carries all the mythic weight of mating itself.

"So would they have let you play fifth string?" I asked.

"Not for too long. But my father didn't see it that way. He was pissed that I had quit. He listed all the quarterbacks in history that were under six feet and skinny. He said if I were willing to work I could be first string. I pointed out to him that four guys would have to be carried from the field before I'd be first string. After a few drinks, he said with my attitude I'd never be a man. All I could think was What? What?"

"How old were you then?"

"Fourteen. Is that what you meant?"

"Yes. So what did you decide--other than that you were not personally responsible for civilization and its discontents."

"I went out for track."

Of course.

Then I asked: "You said 'first' like you had another one right there?"

"Yeah. The second time was right before I married Janice. We'd been engaged for a few months and the wedding was a couple

of weeks away. We were going shopping. I ran out of gas in an intersection in downtown New Haven. Janice was steamed but she got kind of motherly and smug and said 'isn't that just like a husband'. What? Like what? A husband-man?"

I couldn't help slipping my arm around his shoulder.

"Not your average shining moments." I said.

"I was twenty four then. I went fifteen years, though, being pretty sure what a man was supposed to do. Now I haven't a clue again."

This was just another warning that I ignored at the time. It was enough that he was in love with me, that we had found a secret, imaginary world to inhabit together, however awkward. Also, he seemed to understand, to be confirming the theory. Not only had Todd experienced the change of instars--he had pinpointed the exact moments when we say: now what is it I'm supposed to do next?

At that moment, though, the next thing was upon us. We were as happy as twin turtles in an egg. If you asked me now, I could just as well have had that night go on forever with only the two of us moving through the close darkness. The lights of the outskirts of the town were just ahead.

"Only seven miles to Fresno," I said.

"No turning back now."

Off to the left was a large neon sign with a giant scarlet feather and a black ink well. The giant red and black sign was

advertising what looked to be a modestly-priced and even more modestly appointed two-story rural motel--the Pen and Quill Motor Hotel.

I pointed it out to Todd and he pulled in. I stared at the scarlet, black, and the feather while he registered. Something about the color combination, the shapes, stirred another memory.

By unspoken, common consent we didn't even wait to bring the bags in. We just found room number eight, pushed inside, dropped clothes on the way to the bed, and fell into a passion that rivaled the dragonflies'.

"Whew, now that's out of the way we can get down to some serious lovemaking," he said.

And so we did. We decided not to go back to Berkeley the next morning, either. Soon after sunup we waved good-bye to the red and black feathered sign. We drove up through Napa and on to Mendocino. We found an oceanfront bed and breakfast, and we made love through the next three foggy afternoons and hushed, damp evenings to the sound of crashing surf.

I read once that one-fourth of the people in the United States say they like to make love out of doors; Todd was the first and last time I ever ran into anyone from this statistical group. I had a hard time imagining all the rest sneaking off to the woods to kiss, but for Todd it seemed right. He liked to do everything in the field. He didn't mind beds, but he liked best beautiful, secluded spots in rocky coves or deep in pine canyons,

and, after some heartfelt but casual kisses, kind of slip into lovemaking. I got accustomed to bringing along the car blanket on our hikes--supposedly to sit on--really in case we were surprised by a wandering troop of boy scouts or something.

Todd took great care finding our special spots: he considered the view, the lay of the land, the likelihood of strangers wandering by. We finally settled on a favorite cove, fringed by a forest bluff, protected by rocks and tide pools from the waves that came streaming down from Aleutians. Little did the externals matter, really: I was transported by the romance of it all, playing Girl of the Limberlost in the forest of desire. We didn't want anything to mar our happiness, and nothing did.

But this is not a story about how it goes between lovers but about why love happens at all.

For almost four days we managed to ignore all the realities. He didn't mention his wife or Jake again, and I didn't fret over his wife or my lab work with the Atta Spinster Queens. The whole adventure had the quality of some mythic flight, out of time and without consequences.

Late Monday afternoon we were inching our way along some rocky outcroppings over the tide pools. He found a nice place to perch and watch the view. I guessed he wanted just to talk--this was not a lying-down kind of spot.

"When do you want to go back?" Todd said.

"I don't ever want to leave here." I said. "But I have a class tomorrow morning."

"We'll see each other."

I didn't know if this were a statement or a question.

"We see each other every day." I said lightly. "Do you mean what are we going to do about sleeping together?"

"Yes, that too." He said.

As I saw it, this was too embarrassing and complicated ever to talk about. Nothing to say that wouldn't make me feel terrible. He was married. He had a child. I was single. I hadn't ignored, during my long solohood, all the talk about being the "other woman." I didn't look like the "other woman"--too slender, too angular, too serious, nothing like. But that wouldn't protect me.

In Dear Abby columns, the other woman was a bad thing. In the fiction I had read, she always died a horrible death. My family and friends had no sympathy for the other woman. I didn't.

Actual data confirmed that the other woman was doomed. Men worldwide who actually left their wives for the "other woman" and then stayed with the other woman numbered in the dozens (statistically nonexistent). Any attempt to open up the what-shall-we-ever-do-now? subject would force me to anticipate, even agree to, the whole, miserable narrative. Sneaking around

to motels. Furtive phone calls on holidays. The second fiddle part I never wanted.

In my heart, besides, was the hope that this was different-- that if Todd loved me enough, he wouldn't want a shabby romance. And if he didn't, then I'd have to walk away. Just when was not clear.

"I guess we won't be making love." I said.

"That's not an option. I'll work something out."

I didn't press him. Tomorrow was soon enough to assess the damage, I thought.

We didn't really go to sleep that night. Sometime around two in the morning we took our bags out to the car and then kissed for a while in the cold ocean mist. If this were a romantic story, I'd admit we kissed desperately.

As we drove back toward Berkeley, I remembered what the black and red feather sign reminded me of:

Once, in Africa, I was doing some observation work in an area near a running brush fire. Most of the wildlife was scurrying away--we were making ready to go. There were dozens of caterpillar sacs twisting on withered twigs in the hot wind. One chrysalis had opened, and the beautiful cecropia moth was drying her wings in the draft--dreaming perhaps, of a divine life of nectar and velvet light love.

Her fate was sealed by the draw from the fire.

Oblivious, she stretched out her beautiful scarlet and black

wings, casually turned one, long, black, feather-shaped antennae to the heat and light, and took flight.

Chapter 3

THE SUN BOX

I let myself in the door of my house at 6:30 on Tuesday morning. Felt like hell. Out of the Sun Box and back into reality.

I was definitely suffering from the ant-in-the-box syndrome.

In beginning entomology classes, we use the Sun Box to demonstrate sun-compass orientation in ants. Ants navigate by the sun. If you place a box over a wandering ant, leave it for a few hours, and then remove it, the ant will continue in the same direction she was travelling hours before. She would have set her compass by the sun before she was captured in the box. The ant always maintains a constant angle to the sun, regardless of the passage of time. Once more in the presence of light, she travels for a while along her intended path, and then stops, apparently confused and disoriented, with no idea where to proceed next.

In my case, the box was popped on Friday afternoon. From then until Tuesday morning, I had been unaware of the passage of time altogether. While I was in the Sun Box, time had stopped

for me, but the world itself had been turning as usual. When I re-emerged, a lot of things had transpired, but all I knew how to do was to go straight ahead in the same direction as always. It wasn't long before I began to find that direction wouldn't work at all. I was trying to navigate by a remembered light--the angles fixed from "before."

For the creature fresh out of the Sun Box, all normalcy is deception, there's no orient.

My house looked just as it should look if I had read myself to sleep, slept alone, and was now setting off to meet my Entomology 10 class.

Although everything was changed between Todd and me, I thought the best thing was to go about my job just as before. No matter what, we would need to continue to conduct ourselves as platonic, collegial, efficient, enthusiastic members of the insect colloquium. At least until some other option developed.

From my bedroom window everything was the same. The brave spring flowers were stretching up through the ground fog. Beyond the alley and the rooftops, the bay was a flat, bright ultramarine.

But, I wasn't leaving, I was arriving. (I had some turnaround time before class at nine. Enough time for a royal funk, in fact.)

Moreover, in the angel light of morning, the fact of having risked so much for a few days of carnal indulgence didn't seem very smart. That would have never happened in the Second Instar.

But, as I said, I had entered this unanticipated Moon Instar on Dragonfly Friday, and then four heavenly days in the Sun Box, and now everything looked the same and everything was out of whack.

Usually when I returned to my book-lined, plant-filled, sunny house on Le Conte Avenue, I felt like I had re-entered a sacred refuge. I'd talk to the flowers in the big window-boxes, let my eyes wander lovingly over my favorite possessions--the big Mexican Chest, the household Buddha, my butterfly collection.

But not that morning. For the first time, the house seemed lonely. I felt a sudden shock at the determined singleness displayed all around. I hardly recognized the self that had last watered the plants, cooked and ate a meal alone, slept in the virginal bed.

Before, I hadn't felt a sense of isolation; I had been solitary, but not lonely. So why did the house feel so empty that morning?

Ah, because of Rule One of the Irony of Love. The man who can clarify your own aloneness for you--and make the idea unbearable--is the one who will also make you feel lonely for the first time.

Hobbes once said that life was "mean, brutish, nasty, and short"; strange that he did not mention the lonely part.

I turned away from the window and surveyed my bags on the undisturbed bed. No desire to unpack. I grabbed my Berkeley teaching uniform--jean skirt, boots, black sweater--from the closet. Headed for the shower. Changed my mind.

I didn't want to undress. What was the matter?

In many insect species, the molt into a new instar causes such profound changes of form the individual wouldn't even recognize her previous self. The lovely cecropia of the scarlet and black wings and the huge feather antennae is supremely indifferent to the fat, bulging caterpillars around her. She, who will never even eat, merely sip nectar until she finds a mate, would be shocked to find she was once such a greedy, unlovely creature as the squat caterpillar. Nor could she be expected to anticipate that the product of her mating will be another fat, green thing.

The extent of my metamorphosis was becoming more and more evident. Snigger if you will, I'm tempted to myself, thinking about that morning. The truth was, I was newly in awe of being alone with my strange body. I know, the exact same body as the week before. But....more like the moth.

I wanted to take to my bed and, like Gregor Samsa, the anguished character in Metamorphosis, get familiar with the new Libby.

Once I did that, I reasoned, I could find a way to go on behaving just as I had before. But, the clock said I had just enough time to check in, shower, dress, and walk over to school.

The trick was to concentrate on normalcy.

I couldn't undo making love to Todd Duncan, but I could make this little lapse as inconspicuous as possible in the eyes of my colleagues. The sooner everyone forgot it, the better. I told myself that it was just a trivial fling, easily erased, as I headed through the living room-library-study to the study-study (the truth was, every room in my house looked like a study, then. Now everything looks like an orphanage from the bottom to waist high and still looks like a library above the waist). I checked my phone messages.

The tape reversed for a long time. I thought about excuses I might make to the research team. Maybe I could say we extended the trip because we didn't have classes (no), or because of the dragonflies (weak), or because something came up in LA (a big lie?), or none of your business (outrageous).

My mother's voice came on. "Just called to see you got in safely. We enjoyed meeting Todd. Anne and the children have found a house, so when you call I'll tell you all about it." Her voice was even, but I hadn't called, and she had been worried about me. I felt terrible.

The second was from Nancy Wilcox--not only best friend but watchful eye-in-the-sky. Her message was cryptic.

I played it over to see if I had missed anything. Nancy: "Libby, since you're still not home I guess you and Todd found the sack. Don't buy any green bananas. And I hope you hurry home quick--your ass is on the line more than you think--and not about nooky. News break--De Witt has cut a deal to make some big purchases--something else may be afoot. The underground says part of the Oxford Tract is going to be moved. See you at ten on the Terrace."

Move the formicary? This was just the news that I needed to avoid feeling guilty or thinking about Todd. If one line of thinking is unproductive, focus on another. I actually welcomed the flood of anger. I had spent nearly three years writing grants, begging equipment, negotiating for space, and making sure that we had everything in place for the Atta experiments. Working with live insects can't be done just anywhere, you have to be careful about every detail of the research. What if Allan De Witt had found a new place for us? A few of the consequences popped into my mind. All of them had to do with elaborate plans for moving the insects--right in the middle of mating time.

Worse case scenario: If the move got fouled up I might not get my results soon enough to finalize the Spinster Hypothesis before tenure review. Then, someone might insist our research was "insubstantial" or the data was "premature."

This was an awful time for De Witt to come along and interfere. Malcolm Evanson, my mentor, had arranged for me to

get appointed as Co-director of the Atta Research Group. He had backed my appointment because he wanted to protect the Atta project and because he liked me. But he had justified making me a full Director, on paper, because I had written the grants that purchased the lab space and the equipment. The location of the project was a big part of my job security.

I knew Nancy's voice was full of weight because she foresaw trouble. In academia, the "nest" and the means to secure that nest are crucial. Any clandestine action on De Witt's part to relocate us was a threat. Nancy has always looked out for me that way.

Back to try the shower again. As I crawled out of my night-worn clothes, I saw my own body in the mirror. There was no help for it. Instead of thinking about general health, my eyes sought only to see myself as he would see me. Were my legs too thin for my hips? My breasts the right size? You know what I mean--how your point of view changes.

Since I couldn't bear to think about my private life and its private parts--even in the shower--I allowed myself to get even more steamed about De Witt and the lab. I soaped my hair and worked up a lather.

"Just like him," I fumed, talking out loud to the shower head, "We go out of town for a stinking five days and he decides to move us who-knows-where in the interim."

Stepping out of the shower, I was moving into high fury--zooming in on the issue like a tarantula hawk. (I mention this mostly because my gut reaction that morning to De Witt's funny business ended up being right in the long run: no move was a good move.) As I combed my hair--thinking I wanted to have it cut and a henna rinse put on--I factored in the evidence that De Witt had again failed to consult me or, to my knowledge, anyone else, on the subject.

Without so much as a by-your-leave.

By the time I was walking to school the problem had compounded further in my mind to near-paranoia. I began to see De Witt as eminently sexist. Yes! That was the worst of it--he felt he could dismiss my input because I was a woman. I told myself that if the Co-Director had been a man he would have been consulted before anyone moved so much as a chair. (By now I know that power is more subtle than that--some men get ignored, some women get consulted.) I continued to rumble on in this fashion all the way down Le Conte through North Gate to my class.

All this anger served to cover the blatant irresponsibility of what I had done.

Then, in order to calm myself down before class, I told myself that this was getting all out of proportion and I chided myself for over-reacting. I reminded myself that during my Second Instar, I had thought that if I went into science, stayed in the academic cloister, I could avoid the kind of petty, sexual

office politics that I saw on TV. Tried to remember the less at stake, the fiercer the battle.

I entered the lecture room and greeted the patient students who had actually waited a full ten minutes (they probably weren't sure if I were a full professor or not.) Subject that day: Mayflies. Common river flies of short life cycle. Here today, somewhere else tomorrow. Shad fly, willow fly, cisco fly, trout fly, eel fly, day fly, spinner, drake, cocktail, yes and gad fly, too. One kind of mayfly reminded me particularly of De Witt, I thought, as I finished the slides and went on with my lecture: De Witt was a White Gloved Howdy. Sure enough. Having successfully transferred my anger from the real problem to a satisfying target, De Witt, I finished the lecture.

After class, I hurried down to the Terrace--a nice little cafeteria on campus where Nancy and I always meet.

She was waiting at a table outdoors.

I pulled a chair into the shade next to Nancy.

"So tell me about this news," I said.

Nancy shook her head. "Where have you been? I left that message on Saturday--like a long time ago. I'm sure the phone works in la-la land."

She pushed a dog-eared memo across the table. She was compact and energetic, with blond hair and dark, expressive brown eyes. She had a knack for knowing everything that was going on around campus--even though she juggled motherhood and a full

teaching schedule. By then, her marriage to Keith, a history prof, had dissolved into an amiable divorce. He lived down the hill and took Melissa some weekends. Nancy was raising her child and paddling her canoe in the treacherous waters of contract professorship. Lucky for her, she is a natural pathfinder.

She has a habit of rolling her eyes up in mock drama--and she gave me one of those looks. "Sooo???"

"It was great. It was the dragonflies." I knew I had on this sheepish smile.

"Right," she said, "you've lost your status as honorary virgin of the decade. Congrats."

"Just so I don't lose my honorary job."

"Yes, you might have thought of that. When you were trysting--where?"

"Mendocino."

She gave me a dark look.

"I'll bet you're going to tell me you've flipped for this Todd Duncan."

"It was a complete surprise."

"Yeah, and I'm a rutabaga. You might have been deluding yourself that he was just interesting, and blah, blah, blah. I've been smelling smoke for weeks." Nancy said.

"He wants me to go to the Amazon with him."

I tried to pretend I was absorbed in squeezing lemon into my iced tea.

"You have. Shit. So what is this about his wife moving out?"

The sun shifted another three degrees in its orbit. I was speechless.

"It's OK," she said, putting her arm around me, "I'll bet the guys at your lab wouldn't have said anything to me--but by yesterday everybody knew that Janice had left."

"How do you mean left?"

"Left as in gone, vanished, moved back to New Haven. Didn't Todd tell you--sort of as a prelude to bedding you?"

"He never mentioned it."

"And you didn't ask--like how she would take it if you came back four days late?" Nancy said.

"I know, dumb again. But I'd already thrown caution to the winds--and I figured his wife was his problem." This sounded preposterous to me as soon as it came back in my own ears.

What had I been thinking? Instar schminstar.

"I acted on instinct," I said lamely.

"Libby, god knows you deserve some love. What is it, three years since you've had a real date--since you started on the project?"

"Three years, four months, seventeen days...."

"Right, there's nothing wrong with your instinct, it's just a matter of timing," she said.

"But I'm thirty-four. It's not like I've had so many right times to chose from."

"So you got on the last train without a ticket, no questions asked," she said. "Who wouldn't?"

About then I began to notice that Margaret Huffaker from my department was sitting one table away and I could see her studying her roll sheets--which meant she was listening to us.

News travels as fast on a campus as chemical phermones in a cricket nest, and all of this would soon be on the antennae of the rest of the department as well, but Huffaker was on the dread tenure board. My tenure review board. I'd rather what she got be harmless third-hand gossip than first-hand juice.

You would have thought that Margaret and I would have been close since we are the only women in the Entomology Department. But she seemed to think my research was too "flashy," and I thought unshaven leg hair beneath one's panty hose was unnecessarily unfeminine--even for Berkeley.

Dean Sylvester had put her on the tenure board, he said, as a favor to me. I knew he'd done it because it would look good to the gender equity functionaries. I was fairly certain she wouldn't be out to do favors for me--sisterhood notwithstanding.

I gave Nancy a vamonos look and we left.

We walked in an unusual silence. I was in such confusion about Todd that I seemed to be seeing even the familiar landscape for the first time. It seemed important, somehow, to capture

each detail, to fix it in space, to verify reality. On the path to her office, you get the post card Berkeley. To the east, hills the color of crouching lions under a calm blue sky. Below the ridges, the deep canyons, fresh hunter green. Then the campus--the quaint Greek revival halls with pillars and sculpted friezes still bravely white, the Campanile, Wheeler, Sather Gate, the Fountain, Sproul Plaza. To the south, the jumbled tackiness of Telegraph Way, and off to the west, the Bay Bridge and the skyline of San Francisco, and still further, into future and memory at once, the Golden Gate Bridge, the Pacific, and somewhere far away but present in this spot, as a memory of the future, all the oceans, Africa, Cipango, South America.

On these spring days you feel the sense of possibility in the landscape. It isn't a "been" spot, it's a "becoming" place. The buildings and the natural terrain are full of tension: Aggressive Classical meets Early California rancho. The bridges span the bay as though next week they could leap across the Pacific. The commercial streets are always in a state of flux, half the owners boarding up patios and barring windows, the other half planting flowers and lawn chairs and reaching out to the "community." It seems like it's been the same since I was a child--always in transformation.

The people, too. It's too easy entirely to make fun of the steady stream of beatniks and hippies and yippies and love children and dead heads and so on. Perhaps the unwashed have

kept the campus washed clean of anyone who might come to Berkeley to sit still and be happy. I wondered if I would ever be happy again, here.

"What are you thinking about?" Nancy said.

"About this place, the people."

"Wow, Libby, you have progressed to major involvement with this pathogen. Here you are, in bed with Todd, in trouble with your research, and all you can do is moon about the scenery. I've never seen you like this."

At her office, Nancy closed the door behind us and sank into her ancient swivel chair.

I tried to pull myself together. "So tell me what you heard about moving the ants--about this memo."

"Boy--what a weird thing. I don't really know for sure. Keith's sister works in purchasing is all, and she found this order for two new ant colonies from South America--mixed up with some other stuff by mistake. I thought you were already overpopulated at Oxford. The moving part is just rumor, but where would you ever put two more formicaries?"

I shrugged, "I guess we double up, put new nests on a second level, but it's not likely. Have you talked to anyone else?"

"Actually, I've had the quite rare fortune of talking to De Witt, Waldheimer, and Pardee--who I have never seen unattached from his computer terminal--all in one day yesterday. But they weren't talking about new ant colonies. Every one of them made

it a point to wander over to my office to mention that you and Todd had not returned from U.C.L.A.--and drop the Janice info. De Witt seemed almost smug--like he was glad the spinster queen had dropped her guard. Of course, he was diplomatic enough to pretend he was only concerned for your safety."

Since Nancy's office was nearly half way across campus from the Tract, this was not particularly good news. They never went over to Life Sciences--even on their way somewhere else.

Nancy shook her head. "You made it look worse by not calling. You could have said told them you were staying over at your folks' in Burbank. No one would have peeped. Now you reek guilt."

"That's ridiculous, what we do is none of their business."

"You can wallow in all the raging justifiable anger you want, but I'm suggesting...." Nancy shrugged.

"How is it their business?"

"Let us make this more clear than ever--what are the three rules for getting ahead at the U?"

"Me, myself, and I," I repeated dutifully.

Nancy said. "A dame may not have to be twice as good as a guy--but she'd better be twice as careful."

"I'm careful with my work."

She nodded. "I know. I only mention it because you are the one who is so high on sexual ethics."

She was right. Principle. Discipline. I'd said so all along.

Getting involved just because of the dragonflies was so dumb of me, I thought. I had lost my grip. The thing to do was straighten it all out with Todd that afternoon.

"But De Witt was up to his tricks before we left, right?" I said.

"Yeah. I had slated the honorable professor De Witt as the type of fellow who would disappear with the grant money to another school the minute a sweeter deal came along," she said. "But this is a puzzlement."

"It still must involve free money," I said. For De Witt, the University procurement system was like a garage sale, ripe with untapped bargains.

The first thing was to make a ruse call to Buildings and Grounds to see if anyone had moving plans. Usually the maintenance crew knew about space utilization forms--i.e. who was relocating--and stuff like that--way before the academics did, and probably before most of the administrators. It was the male equivalent of "the secretaries run this place."

Nancy picked up the phone and dialed.

"Yeah, John there? Thanks. Hi John, this is Nancy Wilcox over in Biology...."

She raised her eyebrows a few times and then she winced. She wrote down the name of Dr. Lee Chiang.

"What gives? You know him?"

I'd heard the name, but not in connection with department business--instead maybe associated him with demonstrations, for some reason.

"John says there is a work order to remodel a basement in one of the buildings in Strawberry Canyon--including an expensive air conditioning system--invoice to go to Entomology. But he says it's all reporting to Chiang---De Witt's name isn't on the paperwork anywhere; neither is Sylvester's."

"Strawberry?" I was relieved we weren't going to Albany, halfway across town, but I couldn't think of an empty building in Strawberry Canyon. Nice and close to the swimming pool, though.

So, if there were to be a move, De Witt apparently intended to keep it secret for a while. That made things more difficult.

"I'm afraid," I told Nancy, "if I don't call his bluff, he won't mention a word of this until weeks from now when I am in the middle of mating season for the Atta--then he'll say we have to dismantle the computers and the nests and probably the entire formicary."

"Count on it," she said. "You want all that material for your Spinster paper, I guess?"

My tenure review was still more than a year away, but I needed to get a complete set of reproductive figures so I could publish before the committee started meeting.

"Yes. Step two--let's find out who Chiang is and who else knows about the Strawberry basement."

"Right," she reached for the phone again. "Hi, Lorraine, can you tap into the equipment database?"

So we moved on down the line. We tried to locate a work order for the equipment to move the ants and computers. We put out feelers about Chiang, we ordered a new printout of grant funds. We both felt like we were denizens of the information age, tooling along with technology.

Nancy not only knew the ropes, she wasn't afraid to be high profile--she didn't have anything to lose. She had been hired a few years before I was, but not a tenure-track position. She was working on a year-to-year contract, so unless she did something spectacularly good, she'd have to move on sometime. A tenured appointment hadn't mattered much to Nancy when she was first hired--Keith had tenure, she had a baby on the way. Now the lack of job security was a frustrating plexiglass ceiling. Bio Sci was more competitive than Entomology, too.

As a result, she was getting in the habit of going directly to the top. I still had to be sure no one noticed me in the wrong way.

When we had exhausted all the possibilities--tapped all the sources--Nancy cradled the phone resolutely:

"Nothing is showing up on the paperwork. The only thing we've got," she concluded, "is this wildcat order for colonies from South America."

"De Witt is still the key."

"So," she said, pulling open her little fridge and getting out some sandwiches and diet cokes, "work done, let's eat, and now I get to hear about your weekend in hog heaven."

* * * *

So why this powerful instinct between two sexes?

When we are catapulted into love, we cannot believe that it isn't the prime mover of the universe. But nothing in nature dictates that we need romantic love or tow sexes to keep on reproducing.

Coral reefs do fine without two sexes.

Not just simple-celled organisms. My own Atta ants are overwhelmingly female. There are males in the nest, and they mate with the queens once, but the spinster queens can produce their own fertile eggs if they want to. They don't. More to the point, black wasps go on for generations and never produce a male. No sexual love, no problems.

Whenever a species can gain a survival advantage by eliminating two sexes, it will do so. Nature is always economical, in the long run.

Sex is not necessary for survival.

It may be positively harmful.

After I told Nancy about the planned detour and the unexpected results, the dragonflies, and the bed-and-breakfast, I walked her to her one-o'clock class.

She turned to me outside the door.

"It was bound to happen sooner or later--love does."

"I know," I said, "later would have been better."

"No kidding. What did you use for birth control?"

"I didn't until the second day," I admitted. "I stopped taking the pill because I never...."

Nancy gave me a hug. "Never mind, that's probably the least of your problems. Good luck this afternoon."

* * * *

Just to keep things in perspective, I went to sit for a few minutes on the steps of that marvelous symbol of masculinity, the Campanile. There is a comfort in classic, square stone steps, the rough, eternal feel of concrete. To the west, looking out over the bay and the city of San Francisco, it seemed that mankind had made a great job of civilization. Order and purpose. Who would suspect that so many of us can't figure out how to love? Or even how to get laid?

If the call to sex is so clear, why do so many of us get garbled messages?

At the beginning of the Second Instar, I thought it all might be pretty simple. The expectations were spelled out. In the San Fernando Valley, in the early seventies, not much had changed in decades. The feminist revolution had not arrived. For the offspring of the moral middle class, the way ahead was still straight and narrow. The consensus was that two years of college was good, but the best degree was an MRS.

I saw the future and the future was appalling. My sister Anne's friends went one of three routes. One group got married and had children right away. Others got glamorous jobs as stews or secretaries at movie studios or went to college for a couple of years. On this road, too, though, by four years out of high school, they were wiping Gerber's carrots off high chairs. I guess we could say that these groups entered the Third Instar at the appropriate time, having successfully competed for and found a mate, then reproduced.

The whole tight little picture of marriage, kids in the Rambler station wagon, housework, hair in curlers in the market made me think of the firm, decisive clang of a heavy metal door slamming shut behind me.

My hopes lay with the role models who avoided that.

The most "progressive" group of Anne friends, and mine, too, represented the new kind of woman. They took their work seriously, delayed marriage, and postponed children.

But these women were not expected, nor did they themselves expect, to live forever in a kind of suspended Second Instar. They meant to eventually marry and bear children, to sort of ease into the Third Instar.

I did my level best to figure out how to succeed at this. If marriage was the terminal goal for women, who was I to object? Besides, at that point I wasn't as concerned with the future prison as I was with being left out in the cold. The goal was getting there. The chore--finding a mate.

So how does one succeed in the mating game?

I told myself, I'm a reasonably good-looking girl, intelligent, spirited, honest, willowy, long-legged, of pleasant, though not inflammatory proportions. But whatever I was naturally, it wasn't right, not in the sphere of sexual selection. That came clear quite soon.

Darwin loved the theory of sexual selection, he pointed with pride to the way sexual selection complemented his theory of "survival of the fittest." He spoke of the beauty and economy of sexual selection.

But what is it? Is it reasonable? Is it the best way? We can think it fine to say that a male moth hunts his mate by seeking out the strongest secretions, that the suitable female

cricket is cherished for her chirp interval, that the male butterfly cares not a whit about his lady's colors, he's only looking for the right flutter speed.

But does it follow that the female moth with the strongest odor has the best eggs? Does this mean that the female butterfly with the nicest wing rhythm has the finest genes? Not at all.

And how do you, I asked myself in my fifteenth summer, like the idea of being favored if the hairs on your arm are the right length? How do you like being chosen because you dance a certain rhythm at twilight? How is it your whole future rests in the shape of your shadow?

In any case, I didn't get asked to dance once at the ninth grade Cotton Hop. When I told my mother I had danced only with girls, she was crestfallen, "You are a lovely girl, don't forget that. Maybe next time you should go with a date," she said.

Anne had a more pedestrian view: "You have to hang out with the right group of girls--the ones who get asked to dance."

This kind of sexual selection had the mark of Darwin.

Unless my mating effort was going to be sealed in doom, I needed to get more information.

Closer research in the canon of periodicals--I still trusted Seventeen and Glamour and added Vogue--and later the Origin of Species itself--indicated cheerful and willowy wasn't nearly enough. You had to send the right clues.

Enter artifice.

I got an after-school job at a clothing store so I could buy the right outfits and make-up. I let my hair grow long. I hung out at baseball practices. Finally, the center-fielder asked me to the Junior Formal (an older man! to the Junior dance!) My father looked as though he could barely allow me out of the house in my strapless dress, but as it turned out, he needn't have worried.

On the way to the dance (we were in the back seat) the center fielder offered me a cocktail-in-a-can--a bourbon old-fashioned to be exact--and ran his hand way up my stockinged thigh. I demurred. The goal of the human mating game, according to my research, was not to seduce a male to intercourse right off, but to get him to stay around to raise the offspring. The center fielder didn't seem ready for this. I pushed him away, and, to cover my uneasiness, started making small talk about biology class.

"Sheet," he said under his breath in surprise, "the way you looked, I thought you was a regular girl."

The rest of the evening he acted like a bumblebee who had been lured into a wasp nest under false pretenses. We were both sapiens, but we might as well have been separate phyla. He deserted me at the post party for a blonde with a better flutter rate.

So what was going on? I wondered. First, a girl was encouraged to "Darwinize" to attract male attention. That done,

however, she was then supposed to spend the rest of her high school years keeping the courting males from rendering her unfit for marriage. Even though things were starting to get liberal, I knew the fluttery blonde was already considered a bit too easy. Moreover, you couldn't, apparently, get by with just looking like a bimbo, you had to be a bimbo.

All of this was painful. No one likes to find herself a sexual outcast, especially when she has been trying very hard. I was perfectly willing to alter my appearance to fit in--but I was hard pressed to see how to change my nature. The situation seemed grim.

So, I threw out my eye make-up and crop tops and went back to jeans and t-shirts. My senior year in high school, I went to the Senior Prom with a boy who had the booth next to mine at the Science Fair. I invited him. He was shy and didn't want to dance. We sat in the corner and talked about our projects. Our school had mounted a cloud chamber. His school had a wonderful, walk-in booth that contained a paper-wasp nest built against a glass division so you could see everything that was going on inside the nest, the beautiful yellow and black insects building and feeding and chewing pulp in their jaws and rotating it slowly in their forelegs.

We left the dance and sneaked into the building where our projects were and kissed in the blue-white lights of the cloud chamber.

I imagined the best.

After the dance he took me for supper. I liked him a lot; we had things in common. He said I was beautiful. He kissed me at the door and promised he'd call me the next day. He did call.

Two weeks later he left for summer school at M.I.T. The glow of this brief encounter sustained me for a long time. Through two or three years of lean times, I cherished the dream that he would, in one of his infrequent letters, announce that he couldn't live without me. This did not happen. He married a modern dancer while I was at Berkeley.

But the idea of the scientific man stayed alive.

The scientist and the wasps had given me a couple of clues. The scientist was interesting. And the wasps were even more interesting. They were female. They were alone. They were probably even intelligent, as wasps go.

I put the anguish of finding a mate on the back burner--but not out of range. More and more, I began to resemble a woman scientist, but whenever a suitable prospect presented itself, I brought out the hopes and the make-up and tried again. As the Second Instar dragged on, these dreams grew more and more remote. I wasn't a virginal hopeful any more, but I wasn't blooming into motherhood, either. I was on hold, and I became more and more solitary.

I decided to dedicate my life to Science. Entomology, I thought, was the perfect territory. And maybe there would be some unexpected, ultimate good luck.

* * * *

The two bells of the Campanile reminded me that I was due at the lab. The angle of the sun still seemed out of place, though. Perhaps this was the worst day of my life, or perhaps at long last my hopes had been resurrected. The return of the Scientific Man? Either Hell or Hallelujah and Eureka.

I rose and brushed off my jean skirt, started down the hill.

To find out what kind of writing was on the wall. Or if there was only the wall. To find out if Todd was still married.

Chapter 4

THE FORMICARY

Rather than descending from the steps of the Campanile in curiosity, I found myself slinking down to the lab, afraid to be seen by anyone and afraid to see Todd. Even though I had mail to pick up, phone messages to answer, I crept through the familiar hallways, avoiding my office and the possibility of curious stares from Margaret Huffaker, Dean Sylvester, and anyone else who might possibly be on my tenure committee. What if they could see the scarlet A?

The bright, innocent sunlight careening off the expanse of the blue bay and cascading through the trees filled me with longing and despair. As I walked, I cursed the transformation that would leave me unable to concentrate on my work, consigned for who-knows-how-long to that limbo of desire that, almost at the moment of satisfaction, immediately becomes a new vacuum of need.

Even though I'd never experienced this kind of love before (the high-school cloud chamber boy almost made it), I sensed how it would be from then on--call it instinct--call it genetic memory.

Desire and longing or not, I stopped in at the faculty rest rooms in the Psych building, not wanting to use ours in Wellman for fear of running into Todd before I'd checked my hair, reapplied make-up. One day into the Moon Instar and already prowling around like a convicted criminal.

Worrying about lipstick.

Then I went on down through the fragrant eucalyptus grove to the formicary.

According to my calculations, Todd wouldn't show up for another twenty minutes, so I would have a chance to talk to De Witt while I still had some composure left.

The Oxford Tract is offhand and maybe even a little junky from the outside, hanging off the edge of campus as it does. But, from the inside, it's pleasant enough.

As labs go, very nice. All too often, at other labs I've worked in, none of the male scientists have the housekeeping gene. You've probably seen a lab where this was the case--lots of dusty equipment piled about, beakers with rings of mysterious former contents, refrigerators growing new life forms and so on. Plus, nothing is ever where it's supposed to be and you can't even find basics like tubing or disposable gloves.

Our lab was the good kind. Even if I hadn't kept up my end, Waldheimer was meticulous and rode everyone else, too.

The lab was well-organized, clean, and even comfortable.

It had always been a place where I could relax and be absorbed in my work. Every so often, I'd remind myself to keep alerted to the realities of the human processes going on around me--to be on the watch for De Witt the White Gloved Howdy. But mostly the insectary was a refuge from the political doings of the campus.

The lab also had a certain mystique. Because the ant colony is a superorganism, just under the soft whir of the machinery, the formicary seems to have its own breathing rhythm--the ants hum like one large being. Something about the sound of the ant community at work was comforting, like a heartbeat in the womb, like a wordless communication from an unknown cosmos.

But that day the pounding of my own heart just at the thought of seeing Todd, and the deafening rush of my own ridiculously overheated blood, obliterated the softer, subtler presence of my Atta friend.

So I wondered if the lab would cease to be a refuge from the world from now on--because real world emotion had just taken up residence smack in the middle of the formicary. The leftover prude from Instar Two was appalled at what was going on--and a bit sick at heart. The passion puss of the Moon Instar was becoming increasingly uneasy, too. I was in danger of no longer being comfortable at home--a place gone from serene to lonely. And what would happen if I couldn't feel like my old self at work, either?

Yet everything the same.

Vince Pardee was at his computer crunching numbers for our charts on shifts in the Atta Queen egg-laying patterns. He had on his "favorite" shirt--a vintage sports shirt with a wide collar and serious buttons, white cotton with a faint yellow plaid running through. By my estimate, he had three shirts in his repertoire, but this was the one he usually wore. Also, by this time of day he had run his fingers through his coarse, dark hair so often that it stood in spikes across his quiet, thoughtful forehead. He can do just about anything with numerical data.

Waldheimer, too, was his usual self, titrating hormones from the Spinster Queens--happily surrounded by an assortment of spotless glassware and equipment that made him seem like the gourmet chef to the insect world. Waldheimer had a face that could have been taken from a sixteenth century German woodcut. He had blunt, large features, deep-set hazel eyes, and a thatch of heavy, wheat-colored hair. As I said, he was meticulous about his work space and his person--and saw to it that everyone else was, too.

And De Witt, who really didn't have a role in the "hands on" parts of the project, was in his favorite observation spot on the catwalk above the breeding site, a clipboard in one hand and his glass probe in the other.

He smiled and waved cheerfully when I came in, his smooth, flushed skin and striking, light green eyes visible even in the dim light.

The formicary for our Atta experiments was of quite adequate size, but there was no question we could use more room. Pardee was fond of saying that by ant standards, the ants were twice as crowded as the citizens of Tokyo. The cage was six feet long, six feet wide, and seven feet high. From the top, it looked like a giant's checkerboard, clear plastic squares alternating with black indentations around the edges. It had over 500 entrance holes that served 648 separate galleries, 230 of which were occupied by ants and fungus gardens. The weight of the formicary, not including the cage and observation walks, was 20,000 lbs. The colony of Atta sexdens was at that time four years old and well into producing sexual forms. We had fifteen thousand males and about two thousand virgin queens. (For whoever's counting, Todd would say.)

I walked over to the cage and stood below De Witt. In the red light (the chambers that housed the larvae brood are theoretically "dark"--but the ants can't see red light), the ants were, as usual, busy, busy, busy.

He was in the process of thrusting the slender glass straw into the nurses' brood chamber.

I noticed when he did this the worker ants would rub their mandibles together sending a nearly inaudible shriek throughout

the chambers. Allan claimed he couldn't hear it at all, but I knew that I heard it, and that it was some kind of alarm.

His explanation for his action was that he was testing the ants for crisis response. However, this wasn't technically part of our work, although other entomologists had done some interesting studies along this line. Allan De Witt just riled up the ants for his own amusement and to see if he could teach them to ignore the glass straw. I wished he'd quit it. Here was another of our primary points of dissent. De Witt considered the ants an interesting problem. To the rest of us, they were as good as some human beings.

The Atta sexdens are amazing little creatures. Our colony had about half a million workers. These ants live on a diet of leaves. The workers go out into the forest and cut little round pieces out of the green leaves with their mandibles. Then they all march back to the nest holding the leaf circles above their heads. They look like a parade of lady missionaries with umbrellas. Even in our formicary, we had a separate foraging site, and the ants would file through the plastic chambers as though they were threading their way beneath some stately jungle.

"Welcome back," De Witt said.

"Thanks," I tried to make my voice casual, "what's up?"

I didn't want to hear the little nurses so upset, so I walked over to the other end of the formicary and checked the activity in the underground farming chambers. Not only do the

Atta harvest leaves from the jungle trees in an orderly, orchestrated manner, they then bring back the leaf fragments and turn them into agriculture. The worker ants carry the leaf circlets underground. They chew the leaves to pulp and deposit it in special hygienic chambers. Almost immediately, from the ants' saliva, a fungus is "seeded" on the pulp. And then, even more amusing, the fungus generates bulbs that look like miniature kohlrabi. The ants don't eat anything but these special bulbs. At first we tried to grow the fungus artificially, but we never could get the bulbs to generate. The key ingredient is activated by the ants' saliva.

The whole question of how they could have evolved such a complicated nutrition was Waldheimer's domain. He sometimes "cooked up" concoctions for the ants to try--but they were adamant about their kohlrabi. Threatened with starvation, they would eat their own eggs rather than switch to another food source.

One thing about the little ants. They must have started out at the beginning of their evolution with every intention of having clearly-defined males and females, two sexes. All of their strange communal relationships, queens, unsexed workers, using their own eggs for food, disposable males--all of that evolved in a simple effort to survive.

Waldheimer's theory is that ants evolved from the tiphiid wasps during some period of tremendous stress. Both wasps and

bees have solitary species, mud dauber wasps and bumble bees are mainly solitary. Only the ants, among the hymenoptera, are totally social. All ants, so far as we know, live in colonies. (Perhaps, deep in the Brazilian jungle is the missing link Dad and Mom and Junior and Sis ant, but we haven't found them yet.)

The other thing is, the solitary wasps and bees prefer a diet of live insects for the larvae and pollen for the adults. So some radical alteration of the food supply must have forced the evolution of the ant species that relish fungus and dung. And put all their reproductive eggs in the same basket.

Waldheimer was interested in just how the ant nutrition worked--under what conditions they would change their diet. How the food distribution affected the production of queens and workers.

De Witt, of course, kept close watch in case something turned up that would suggest some kind of plant or chemical combination which would trick the Atta into starving themselves to death--some agricultural wonder product.

I was, of course, studying reproduction. My work was showing that the True Queens were not the only fertile females in the nest. There were backup Queens, "Spinster Queens", who didn't reproduce, although we were trying to demonstrate that they could.

De Witt was in a hearty, expansive mood.

" I had a call from the Farbers...."

He went on to explain that the Farber brothers had called to praise my "Spinster Hypothesis" preliminary report at U.C.L.A. They had invited us to present our findings at an upcoming conference in Baton Rouge. It might lead to publication, he said.

De Witt delivered the message and then stopped abruptly.

Waldheimer looked up but did not comment. I caught something in his look.

"I'm glad they liked my presentation," I said. "How did they want to arrange the next one?"

"Maybe we could do it together," De Witt said.

I made a mental note to be diligent about getting on the program. If De Witt did it alone, he'd get the publication credit--and I'd be sidelined.

Most people think of scientists as lonely genii (the plural of genius) working on limitless theory; not so. The game is to find a solvable problem, solve it very quickly, and publish even faster. And this goes on under constant competition and scrutiny from other scientists. The whole scientific community is crawling with gregarious creatures. Scientists are constantly seeking each other's opinion. Even if you don't want to endanger your own research by revealing stuff too early, you have to say something. The community is ripe with endless opportunity for communal work, group play, viable interpersonal intercourse, conferences, letter writing, presentations. But all of this is

really a kind of screen for what's really going on--trying to keep one's own work cryptic enough in the developmental stages that no one can steal it. All the interchange is not really opportunity, it's necessity. You try to stay as informed as possible about everyone else's work as you can, while keeping the information you share about you own as oblique as possible.

De Witt was just better at this part of science than most of us.

"Anything else?" I asked, moving around to the feeding area where the light was natural.

"You should take a look at the spinsters in nest three--I think we've got some suspicious eggs."

De Witt went along the catwalk and came down the stairs; he put the glass probe in the little clip Waldheimer had mounted for it.

He came up beside me.

He was such a strong presence, I thought of him as easily six feet tall. In reality, he was about five-eight, and we met nearly eye-to-eye.

"Two more pieces of good news." he said.

He headed across the room with his quick walk. He was always two valences ahead of everything.

He opened the door to the Conference Room and motioned me in. (This was not a Conference Room in the real sense. The only person who ever came in there who wasn't one of us was Dean

Sylvester--visiting us with orders from Above. It was a small lounge between our desk area and the storage rooms--a kitchenette and a table and a few upholstered chairs.)

"First," De Witt continued, "I got a leak from Sylvester that the administration has viewed our request favorably for ongoing field observers in Brazil."

He paused.

"That's good news for the program," I said evenly.

That meant Todd had his money to go to the Amazon--money to set up a lab and hire graduate students.

De Witt waited a full ten beats.

"Of course you'll want to be the one who tells him?" He said.

"Whatever." Why didn't he just ask me outright if we were sleeping together? "What about the Friendly Reds?"

Todd had prepared his request for the Brazil trip in two parts. The first part was for ant research--proliferation of Atta colonies in the wild, how queens and their sisters started a new colony.

The second part--one of the reasons he chose Brazil over Central America--had to do with his fascination with communal spider colonies--the spider equivalents of ants and bees. He wanted to get a look at a social spider species in the Amazon. The ones he had his sights on were called the "Friendly Reds"--but the area of the jungle where they had been found was

definitely not friendly. Taking time out for a side excursion would be costly, and the money would have to be earmarked. Still, I knew Todd had his heart set on finding his spiders.

I went to the cupboard for tea bags.

"Yale always intended to fund the spider research station separately. That's Duncan's affair. They're good for it." De Witt said.

Personally, I'm always uncomfortable with double-funded double projects. It's hard to keep clear about which job is being billed to whom. I thought I trusted Todd. Still, the Berkeley-Amazon funds were coming from our, my, budget.

I mentioned this to De Witt.

"Well maybe you'll have to go along to make sure the laundry is folded properly, all the t's are crossed." De Witt suggested.

"Someone might," I said, trying to sound non-committal. I fumbled with the tea stuff, banged the cups. A bundle of nerves. "It's our responsibility to make sure we buy something worthwhile there."

"And," he continued, "we have preliminary approval for the additional ant colonies. I think we should go ahead and prepare the paperwork and draft a requisition."

That was the telling bit. And, yes, things had been hopping whilst Todd and I were away. Before we left there had never been a mention of new colonies. Suddenly we were ready to order them. These would be the colonies Keith's sister had come across in the

computer files. Nancy and I hadn't been able to find the actual authorization slip, but new ants, it seemed, were on De Witt's agenda. Since we didn't have room for them, and didn't need them, he had to be empire-building.

"What new colonies?" I asked.

"The ones Pardee wanted."

I didn't think this sounded like Pardee's idea--he never wanted anything except computer equipment. Two new formicaries definitely meant a move was looming in the future. I was about to ask where we were going to put these ants when Todd walked in the door and the atmosphere changed.

The air temp in the room dropped ten degrees. My body temp shot up twenty. I came as close to fainting as I ever have.

Both Todd and De Witt looked at me.

My first instinct was to mumble something about the tea and busy myself there. Instead, I reported the Brazil money news and then quickly reminded Allan that he was just leaving.

He wasn't going to be got rid of so easily.

On the pretext of making sure that Todd was a full member of the team, De Witt covered every development of the week in minute detail.

In our field, when someone says they want you to be a full member of the team, it's because they don't, and you aren't.

Finally, De Witt secured his clip board under his arm, picked up his tea mug, and stepped to the door.

"You know, I generally frown on collegial, uh, informality, but in your case I'm sure it will work out just fine."

* * * *

Todd turned and gave me his winning smile.

You could say our eyes met, our gazes mingled with desire. But even in that long instant, my mind raced with questions. Would we go back to the way we were before, chaste friends, or would we be lovers now? Was his marriage over? How should I act? What should I expect?

In that moment, I scanned the past for clues, the way we will do, all the while knowing that none of it might be relevant any more.

What did I know? By the time of the Science Fair my senior year I was already spinning silk for the cocoon that was to be a quiet, unnaturally extended solitude. Despite faint hopes for love with the cloud chamber boy, I began making choices that led me further and further from the mainstream.

The turn to Science then--even though only a substitute life--held out hope of the truth that would show the way.

But was Darwin any help here? Despite the clear implications of his theories of evolution, maybe he continued to look only on the bright side. Didn't the Darwinian view really depend on the perfectibility of mankind? On the goodness of God

the Father? Evolution was held to be in a forward direction: things were getting better all the time.

What if I'm not part of some divine plan, but just a human female, in the wrong instar at the wrong time?

The truth is, Darwin didn't want to tell us what he must have suspected all along: that a creature survives if it can be done. And if survival is possible, the creature will survive in any mindless, humiliating, grotesque, unimaginable fashion that accident and effort can provide. The dragonfly larva thinks nothing of devouring half a dozen of his brothers and sisters for breakfast if he can catch them. Or, it must be said, if the larva accidentally hatches inside mother, it eats mother. And it is exactly this drive to eat whatever comes to hand and mouth that has kept the dragonfly around for 300 million years.

Or consider the sex drive. The female praying mantis eats away at her mate while he copulates with her. When the act is done, there's nothing left but his severed organ, still pumping the last few sperm into her egg sac. She wanders happily away, then, to lay her eggs for another round of blessed life.

Imagine the real difficulty with which most insects mate: their little bodies are not conducive to the missionary position; they have a hard time distinguishing potential lovers from potential meals--the male spider on the web is just meat to the female. Sex is such a hassle for them that some species have eliminated it altogether: the black wasps practice

parthenogenesis, no males are needed for the species to endure.

Given all the hazards and inconvenience of insect intercourse, it may have been the stubborn males who wouldn't take no for an answer--even at the cost of being eaten--that kept the species going. You can be sure that among the extinct creatures are ones whose males thought twice about the dangers of getting laid.

So it continues. Every warm day of every year fish, birds, mammals, reptiles, insects strew newly-fertilized eggs by the billions across the expanses of this earth with the perfect knowledge that only a handful will survive to adulthood. Eventually, anyway, the product of each egg will eat or be eaten by the products of some of the other eggs.

Evolution is the result of life feeding on life blindly, unevenly, wherever and whenever it's possible.

And the corollary is that everything must be, will be, tried.

In mating, too.

Divine or damned, life is out to take over the world.

* * * *

Todd had been standing just inside the door when De Witt went out. First the smile, then he turned easily and tripped the lock.

"I thought he'd never leave."

You know the old saying about your life flashing before you. This was simply a fast forward. In the briefest, charged moments, entire sagas of our lives can suddenly activate in our brains. The information doesn't occur in word-by-word fashion-- it's just there. The effect is much like switching on a light in a familiar room: you don't think, ah, bed, chair, desk, lamp--you don't even think bedroom--you just know which room it is.

And like that, right after the rerun of Darwin's argument, I had a sense of the whole past and the whole future. I knew that I could recognize Todd's soul in the dark, that we had always been together and always would be.

I saw my childhood bedroom and Africa, Nancy's office and the rain forest, the hill above the old Blind School, my grandmother's, a child's crib in the library on Le Conte, the scarlet and black cecropia, even as Todd, still smiling, took four long strides across the room and took my hand.

Chapter 5

FABRE'S FOLLY

Todd took my hand and pulled me with him to one of the chairs.

"I've been longing to see you all day," he said.

"Me too," I said. I was giggling a little because of the way he was kissing my neck.

I know how these scenes go in the romance books--it's the hands, the hair, the breath on the breastbone, hints of deeper pleasure. Swept away.

But you can almost predict what happens right away in the opposition of the two sexes. Within moments, we are not laughing.

I stop laughing first. He is kissing me and it seems all wrong. The order is all wrong. He had left me that morning with no more ceremony than someone dropping off a babysitter. Opened the trunk, moved the aqua blanket without comment, handed me my luggage. Walked me to the steps. Waved and went away.

In the interim, desire and longing and confusion. But, as soon as I actually was in his presence, I resented that the

entire day had been angst. I didn't even know which part to worry about. What did it mean that he was kissing me here?

Certainly, his playfulness should have counted for something. In my state of agitation, it did not count for assurance.

In some insect species, the male must present the female with a "mating gift"--if it is acceptable, the female amuses herself consuming the nicely-wrapped food while the act proceeds. If the gift isn't attractive enough, the male must go stalk and wrap another.

So, here, I found myself wanting exactly the right gift from Todd--flowers or a love poem would be the historic equivalent--best would be the right words from Todd--something to make all this mess right. He gave me a final kiss on the cheek.

"I thought about you all day."

"Because you had something to tell me?" I prompted.

We stared at each other for a long, awkward moment.

"No, because I wanted to see you. I kept thinking about making love to you." His voice was wary.

"Look, I don't care if we can't have a relationship or see each other, but you could be honest with me."

"I intend to be." He said.

"Good, why don't you start now." I stood up and walked to the sink.

"She left last Tuesday. A week ago." His eyes were shadowy and I couldn't read them.

A week seemed a long time ago. "We were in L.A. We went out to dinner with my parents that night."

"Yes."

"And you didn't mention it?" I asked.

"Didn't seem like the best subject for dinner conversation."

"Well, no, not with my parents so upset about Anne. She found a house, by the way."

"That's good. How much?" Todd said eagerly. He was going to pursue the house discussion as far as he could--the perfect reprieve from the wife conversation.

I redirected:

"But you could have told me later, on the way back to the hotel...." A refusal to be diverted by real estate.

He changed direction. "I guess I just assumed you knew."

"How could I have known if you didn't know until Tuesday?"

"Well, this wasn't that sudden. I knew it was coming, just a matter of when."

"You never said a word about trouble."

He was justifiably pained: "Jesus, Libby, all the time I was falling in love with you I certainly didn't want to go around talking about how my marriage was breaking up--like some soap opera, you know?" Flash of the gold tooth.

"You mean as in 'my wife doesn't understand me and we haven't had sex in a year'?"

"Yes. Even though both items are true." He stood up, strode to the sink. He started making a cup of package coffee-- which he doesn't even like.

"This isn't going very well," he observed.

I ignored him.

"Is your marriage breaking up?"

He sat down again. "I don't know. There's a lot going on I'm not sure about. Janice left because she didn't like it here and she couldn't find a house she could afford and if I go to Brazil, she doesn't want to be stuck on the west coast."

"None of those are divorce-making." I said.

"No, no they aren't. I don't understand you, either. Over the last weekend, when you thought Janice and I were still together, you said we wouldn't be able to sleep together. Now she's gone...doesn't that make things all right?"

From the sink at the Conference Room at the Oxford tract, the windows face south. In the late spring afternoon, the light filtered in through the afternoon fog, cool and impersonal and diffuse. I paced back and forth.

When the little ant worker is released from the Sun Box, she at first proceeds confidently, certain of her orientation and direction. After a few minutes, though, she realizes that she is not on the path home. You have probably seen this in your own

kitchen, the lone ant separated from her fellows. For awhile, she wanders about, touching the ground and objects carefully with her antennae. She is looking for chemical traces of the colony. Then she will stand alone, waving her antennae in the air forlornly, trying to read the polarized light.

"I'm not sure. I see that you are telling me things that are indisputably true. But we're a long way from honest. Sins of omission."

Todd got up again and dumped his untouched coffee.

He put his arms around me.

"Libby, I wish you'd talk to me instead of trying to figure things out. I'm sorry Janice is gone. I don't really want a divorce and I don't want to lose Jake."

"And...?"

"And what?"

"And you want to see me?"

"Yes, of course."

The fact that he didn't understand these conditions as mutually exclusive was baffling and infuriating. And, though I couldn't put my finger on why, I was vaguely hurt. On second thought, I was crushed.

"I just can't sort out the tiniest reason why I got myself into this." I said.

"You're not flying solo, Libby." He kissed me tenderly. "If it makes you feel better to assume that Janice and I are separated, that's all right. Maybe we are."

In a minute Waldheimer was banging on the door.

Todd swung the door open with an innocent how-the-hell-did-that-door-get-locked look.

Waldheimer entered the room gingerly. He wasn't talkative under the jolliest of circumstances. He looked gravely from Todd's face to my face.

"I'm interrupting?"

"Not at all," I said weakly. "In fact, Todd and I were just talking about something we need to take up with you."

Todd smiled. Waldheimer smiled.

I took a pen out of my purse and tried to look businesslike.

"I think De Witt has pulled a fast one on us," I said.

Since romance as a subject was undoubtedly taboo for awhile, I thought it was about time we did conference in the Conference Room. The subject: moving the laboratory. I wondered how much Lars Waldheimer and Pardee knew and when they knew it. I proposed a private little conference, sans De Witt, since he seemed to want to avoid the issue.

Todd got Pardee in with us and I popped the question. It turned out that none of the others had heard anything about a move and new ant colonies. Even Todd, since I hadn't had time, in the rush of passion, to fill him in, either.

So I told them the little bit Nancy and I had been able to ferret out about the Strawberry Building and about the requisitions for South American ants. Todd recognized the name of Dr. Lee Chiang as one of the Assistant Directors of the Radiation Lab in Strawberry Canyon. (That's why I had associated him with demonstrations--he was the spokesperson for the Lawrence Radiation Lab when groups were picketing in protest.)

This meant that the prospective site of the new insectary would have to be the basement of one of the buildings near the Rad Lab.

Waldheimer and Pardee were a bit disgruntled that things might have progressed this far without them. Pardee wanted to go find De Witt right away, but Waldheimer suggested that we make a trek up the hill to look the place over first.

"Maybe it's a good deal. We have to see if it's clean." He said.

I volunteered to try to get some keys.

The talk turned to the Amazon expedition. There was still some daylight left, so I said I was going for a walk and slipped out.

* * * *

The university in the late afternoon is a good place to walk, the air is medieval, the feeling closed and introspective.

My destination was beyond the other end of the campus. I was heading to my thinking spot on the grassy hill above the old Blind School. It's actually called the Clark Kerr Center now, but the view is the same, the shrouded sweep of the bay and the bridges, and most important, the house my mother grew up in, my grandmother's house.

Touch base.

Down the hill somewhere were wind chimes and the air smelled of soap as it will on an onshore breeze.

So. First option was never to sleep with him again.

This scenario held all the promise of high drama. Picture the lovers, star-crossed, chaste in their white lab coats. A heavy secret lies between them. Daily they labor in the fecund recesses of the Oxford Lab, themselves forever....

I did not rule it out.

Second. I could refuse to see him except on the condition that he get a divorce.

If he said no...back to option one.

If he said yes.

Well, he wouldn't. And I really didn't want him to, either. He cared about his son, wanted to be a full-time father. Besides, what kind of a man walked out on a wife he cared for? Not a good solution.

I was painting myself into the coffin corner.

Final scenario: The two scientists carry on a normal professional relationship by day--transform by night into passionate secret lovers.

None of the above.

In science, if you can't find the answer you want, you re-frame the question. It occurred to me that the problem was improperly framed. I was trying to solve this problem by looking at love.

Better to approach it from the paradigm of sex.

If you take it just from the sexual viewpoint, I thought, the question is more about what we can do than about what we want to do. Love can let you float around in imaginary worlds. Worlds without real consequences.

Sex brings you hard against survival.

But not my survival. The sexual instinct doesn't care a bit about survival for the individual, no matter how much we like to think it does. Sexual patterns in all creatures are there for the survival of the species into the future. Rather, the perpetuation of the genetic material of the species, thank you Darwin, et al. The theory is that the assertion of the sexual genetic code will take precedence over all other behavior at crucial points in the life cycle.

But even the survival of the species doesn't depend on the notion that males and females will have the same sexual aims. It seems they are often at odds.

Men. Sexual instinct, survival of our species, dictates that men should have as many sexual encounters as possible. We're a widely-ranging, complex species--we need a big gene pool. And the genes of any one man are most likely to endure if they are passed on to as many new members as possible.

Women. Females, being responsible for the nurturance of infants, increase the fitness of their genes and the race by having only as many children as they can bring to adulthood.

So there's this constant friction. Men increase their "fitness" by having many partners, multiple offspring. Women increase their "fitness" by persuading one partner to stay with them, limiting offspring.

A man like Todd.

No matter how socialized, the sexual instinct that is his heritage, hard wired into his brain perhaps, had to be telling him that he had tied up all his reproductive energy in one woman for twelve years and had only one offspring. Time being a-wasting, his most effective survival move would be to play the field and impregnate as many females as possible. Or, at the very least he should take up with a family-type woman who wanted lots of kids.

Not a woman named Libby.

She is already well past prime child-bearing years. She might not want to have a child. If she did, she would still be

reluctant to give up her participation in the "man's" world--that meant he would have to assume more child-related duties.

But for a woman like Libby, this might be the main chance. Despite a long delaying action in the Second Instar, her sexual instincts have become suddenly demanding. She needs to find an unattached man and reproduce. Her best bet, single and childless, would be to do everything she could to see that he didn't reunite with his wife--up to and including promising to be a mother. Further, she ought to grab him and cement the relationship before some other equally-needy female snagged him.

This was another way of putting the problem, but it didn't seem to clarify the direction for Todd and I. After all, we should resist any temptation to slip into some set of impersonal sexual-opportunity statistics. Even if they really translate into what we call instinct.

We had all the logic of civilization to guide us.

The Reasonable Drs. Duncan and Despars:

Would never have let it happen.

And should a moment of passion intrude on the scientific life, one is perfectly capable of dismissing such foolishness thereafter.

Anyway, reason said it was getting late and the hills were not a safe place alone at night.

I went down the hill in the triple-crossed twilight. Took the busiest streets home. The people on Telegraph were restless

and abstracted, trying, no doubt, to thread their way between love, sex and reason.

Todd was waiting for me on my front porch. He was wearing his Jimmy Carter T-shirt, a relic I had once admired. His face flooded with relief.

"Finally," he said, "I thought you'd want to talk or something."

* * * *

I guess the sign I had been waiting for was that he be waiting for me on the steps in the dark.

We women tend to read a lot into signs like that. I did.

We drank some wine and talked like people will. We made love. Talked some more. How this happens I don't know. I can remember some things well. But I have memory of only the sensory stuff that night. The jewelled wine glasses. My jean skirt draped over the living room chair. The gold tooth in the bright light from the kitchen.

I don't remember what he said beyond: "So have you got it all figured out now?" I don't remember what I said.

But we were resolved on a course so simple I had just missed it: we would have an affair.

* * * *

"An affair!" Nancy practically yelled when I talked to her later.

"We're going to keep seeing each other while he's separated from Janice. I guess that's an affair." I explained.

"Sweet Jesus."

"Actually, I thought it was very noble of him to spare me the details--not expect me to play sympathetic mistress. He let me sleep with him regardless of his status." I offered.

"A prince among swine." Nancy said.

"He doesn't want to hurt me but he doesn't want to lose me, either." I defended.

"You should have known enough, Libby, to know when a man says he doesn't want to hurt you, you better stock up on medical supplies."

But, as we know, hearing is the second casualty in the wars between the sexes.

Chapter 6

ROOT BEER HONEY

It wouldn't be fair to share the insects and the angst with you, without sharing also the good times. But, as Milton found out when he tried to write Paradise Regained, it's much harder to write about heaven. Paradise Lost is a piece of cake, the words fairly drip from the pen like blood into a bottle. But heaven? Hard to do. Everybody revels in Dante's Inferno and nobody has read Paradiso since 1500 A.D. (The publishers go on dutifully printing the whole Divine Comedy anyway.)

I know about this because English is right next to Entomology in the book stores. Every semester I have to check the Union and the independent shops on Telegraph to see that the books I've ordered for my classes are in and that the editions are correct. It was easy to get sidetracked by the books ordered for the Literature students. Pretty soon I started actually buying them. In the long evenings at the end of the Second Instar, I'd assign myself a special holiday from science and read about tragic love.

Come to think of it, it was Dante who put lustful adulterous lovers in the Second Circle of Hell. He has Paolo's lady,

Francesca, say: "There is no greater pain/than to recall a happy time in misery/and this your teacher knows."

Quite fitting.

But that's after the fact. One surmises that the lovers of the Second Circle had a heavenly enough time while it lasted.

And so did we.

Sometimes it's the whimsical little things you remember. One morning, about the second week of the it-goes-without-saying delight of waking up in his arms, I was drying off from the shower. Todd was staring intently out the back window.

From the window above my bed you have a view onto the small slope of my yard, the alley beyond, and then a rectangular slice of the bay. I don't have a formal garden, but every few months I sow packets of wildflower mix and seeds like nasturtium, lobelia, and alyssum--all the ready volunteers. In June there's always a jumble of color.

"What day does the garbage man come?" Todd asked.

"Thought you'd never ask. Tomorrow, Thursday."

"For sure I'm anxious to start taking out the trash," he said, "but come see this."

I went and sat beside him on the bed.

"Take a look at the flowers, then at the trash bins, and notice where all the bees are."

I looked for the bees.

A few bees flitted among the seductive blossoms, but they were positively swarming the cans.

"I've been watching them every morning. Always more at the trash than in the flowers, but the last two days before collection, they have a mob scene. I think they've sorted out when the pickings are best."

"They've found a better flower." Why not get their sugar already refined for them by Pepsico or Sara Lee? Easier than doing it by fanning the hive.

"How soon do you think we'll be able to find root beer honey in our health food store?"

"Certainly not before we've finished making love."

Things like that.

* * * *

Time was a part of my ideal fantasy. I liked making love in the morning--kind of before and after a sinful breakfast in bed (maybe eggs benedict) and a leisurely read of the Sunday papers. So we did that.

Todd retained his particular fondness for place--the great outdoors.

We went to Mount Tam and found lovely, piney slopes overlooking the Pacific. We revisited the secret cove we had discovered in Mendocino. Our out-of-doors love making was a bit

of a bussman's holiday, too. All the time we were together we spent long afternoons of pond-watching, and love, bee-hive tracking, and love, butterfly chasing, and love, stream-skimming, and love.

I thought all during this time that our love of nature was a unique bond between us--one that I had glimpsed with the cloud chamber boy, and one that Todd had never had with a woman before. Nature, shared work, excellent passion: I believed these would bind me to Todd through whatever lay ahead. Todd confessed that Janice would hardly let herself be touched in any less than the Hearst Castle.

This was part of the story of his marriage that gradually came out: essentially, he was trapped in the modern version of social Darwinism. Without directly criticizing her, he admitted that she just plain wanted to move up. The salary of a college professor had looked acceptable when they were starting out. But, by the mid-eighties, it was a ticket to her idea of barely-respectable poverty. The spectre of living on less money a year than her friends spent on their automobiles was too depressing. And she was used to wealth. So she saw no reason why her father shouldn't help them out generously and often. Todd couldn't either, really. Money was just money. But they fought about it anyway.

The move to Berkeley had raised new problems. Todd had turned down a corporate job on the East Coast. (To be fair, the

"big" job was working for Janice's father's company.) Todd said he might have accepted it some other time, but here was the Amazon opportunity right in front of him. Also, Todd loved his science and was good at it.

The issue of two people in a marriage having different goals--surely related to the problem of two sexes having different goals--can result in divorce but it may not.

Todd loved Janice and missed Jake. I think they might have parted without bitterness if it weren't for Jake. As it turned out, none of the reasons, talk, analysis had much to do with their divorce when it finally came. But I was wrapped up in the psychology of it all, determined to find the truth in terms of what I knew of love. The truth wasn't there at all.

* * * *

Other things about the beginning.

The steamy fires of lust do tend to sculpt your body in just the right way.

For my friends, a new romance was the finest possible way to drop ten pounds. My sister, Anne, had a brief fling after her divorce and she looked better than she had in years. Her life was falling apart, but, believe me, she looked terrific.

For me, it was the reverse. I gained a little. Todd said he liked the new little curve to my hip; I knew what he really meant.

My teeth are always set on edge when a certain type of man says, "What that gal needs is a good lay." But there's always an edge of truth in even the most obnoxious axiom.

The outer well-being came from an inner happiness. There, in the midst of a perfectly ordinary and perhaps squalid academic sexual liaison, I felt radiant. The dragonfly wedding night, the gossamer flight of the butterfly, the bridal dance of the Atta Queen. The very moment. It no longer seemed strange that other creatures directed so much of their life strategy toward this.

This.

As we all could have predicted, would have foreseen, my joie de vive extended to my job--that happens. And in this case, Todd was a part of it. My attention span was about that of a bee's visit to a flower. Everything seemed fun. I found myself a part of the momentum. I couldn't get anything done.

Speaking of which, the De Witt-rigged move to a bigger lab began to gather its own speed.

A few days after Sun Box Tuesday, when Todd had sort of moved in, he and Waldheimer and Pardee and I went up to investigate the place.

De Witt was off somewhere. Pardee had actually closed a file. I had keys. Todd suggested we walk up.

Pardee mentioned driving.

"He wants to see it, but he doesn't think it's worth going to see." Walheimer said. He always wore berkenstocks and hiking pants under his lab coat, so he was prepared.

We walked. Up past the tennis courts and the Founder's Rock and Stern Hall and on up Cyclotron Drive. The sun was moving toward the summer solstice, so the twilight was the color of fire ants for a long time.

The building was actually up the road and across from part of the Rad Lab facilities, and apparently administered by them. I'd never really noticed it; I had no idea what went on there. It sat there in the curve of the canyon, a solid-looking block of concrete with narrow slit windows on the ground floor that looked like medieval battlements. The gate was closed but not locked, and except for a few lights in the offices on the second and third floors, the place seemed deserted.

A stairway led to the second floor where the main doors were. One of my keys worked. To the right was a stairway that led back down to the ground floor. That would be the "basement"--our maybe future basement. We all trooped down the stairs like characters from the Wizard of Oz or something.

We'd hardly got inside and were trying to find the lights when a security guard showed up. He was lonely and therefore chatty and full of information. When he figured out we didn't know anything, he offered to show us around. He explained that

the former tenants--involved in some super-secret government research--had been relocated to Arizona. We were all willing to believe the folklore--clandestine, quasi-military stuff, hidden budgets, surprise disappearances. Mostly the place just looked like the occupants had vanished in a hurry. Dumped printouts, soiled hanging folders and dead pens, food left in office refrigerators.

What was hard to believe was that the facility revealed itself to be so much bigger from the inside. Half of it was under the hill. The huge, cavernous basement ran the entire length of the building above, but went back far deeper. The expanse of floor space jogged around sturdy, square pillars and through braces of shiny pipes.

The ceiling clearance had to be at least forty feet.

"A perfect bomb shelter," Todd said, "can't imagine how the Arizona folks could bear to leave it. Peace must have broken out."

"Trust it to Allan De Witt to be on top of something like this." I said. It was an excellent space, and I knew everyone would be keen on moving in.

Pardee was busy examining the power outlets where the bank of computers had been. Waldheimer was tsk-tsking about the trash but also figuring out how much work to haul it all away.

Everything about the place was peachy, except moving the ants. I felt I would look like I was selfishly considering only

my research if I objected. (I have since learned that you can't really afford to be that altruistic. Self interest is not sin.)

"No question there's room for three formicaries," Todd said to me.

I nodded.

"And that means Allan can triple your empire and grab some valuable nest space."

He was tempering his enthusiasm for my sake.

"Right." I said. There was nothing for it but to consider it a done deal. Accept it with grace. Everything would work out all right.

Back outside, it was night. Pardee and Waldheimer hurried home, and Todd and I decided to walk to the top of the rise. Further up the road we found a secluded little spot where we could watch the sun set on the last leg of his journey to the summer solstice. (Yes, Cyclotron Road, too.)

We navigated our way down in the dark, soft air. The lights sparkled in the distance, down the slope to the bay, over the bridges, into the city beyond, and finally merged with the twinkling stars.

Very close to heaven.

Chapter 7

THE SPINSTER HYPOTHESIS

I knew I was pregnant before I missed a period. In early June, one morning I awoke with cantaloupe on my mind. Not just thinking how good it would be for breakfast, but actually obsessing on the concept of cantaloupe. Its orange-pinkness, its sweetness, the smooth feel of a spoonful on the tongue. Its rightness in the universe.

I woke Todd.

"Cantaloupe for breakfast."

"I'm at your service, but, don't you have a final to give this morning?"

I remembered that I did. Everything about the everyday tasks of life, these days, was an afterthought. There was never just time to run to the market. Most people, I'm sure, can successfully manage happiness and real life--but I had been with Todd less than a month and already I was losing track of classes; I'd hardly written anything on my spinster paper.

"How about I buy some for our picnic tomorrow?" He was charming that way. The department had planned a picnic the next

day in Strawberry Canyon to "celebrate" the new lab site and the end of finals.

"Good, good. Could you get some soft drinks, too. I might be held up a while this afternoon."

"It's nice that you are so dedicated to your students," he said with a mock pout.

"Dearest Todd, the reason I'm so disorganized is because I'm so dedicated to you."

The truth was this time I needed to detour by Nancy's office. I knew the women in her department had concocted a secret-formula, early-warning pregnancy test.

Right after my final, I beelined to her office.

She was hunkered in her swivel chair, making out grades.

I told her what I needed.

"Balls," she said.

"Close enough."

"Didn't you promise me you were using everything --after the first weekend?"

"I did."

"Even in the woods?"

"Scout's honor--even in the woods--ever since the second day in Mendocino."

"Well," she sighed, "Nothing's one hundred per cent--and the pill wouldn't have kicked in right away."

"I don't know for sure," I said, "but it kind of feels for sure."

"It's not so damned surprising. I bet every egg in your ovaries was ready to jump ship at the thought of all Todd's cute sperm to play with. Besides, it's no problem."

My mind went blank for a moment.

"You're not thinking of having it," she whispered, "are you?"

I hadn't had time to get that far. Lots of professional women wouldn't dream of spoiling a perfectly good career with a perfectly good baby.

But enforced celibacy had freed me from considering the choices. Abortion had seemed like a reasonable solution to friends of mine. And it was an absolute necessity for my sister Anne when she found herself three months pregnant two months after her ex moved out.

If I had to actually make the decision, what would the solution be?

"I just want to find out for sure, quick," I said.

"Dear Libby, I know this is a rough one, and I'll be here for you to talk about it for as long as you need to. And it's your call, not Todd's. You'll always have the responsibility--no matter what he does."

And Todd, it seemed, sweet as he was, never met a problem he couldn't run around.

She went to the file cabinet and pulled out a folder. I guessed it was the special "Women's Health Network" info.

"Oh, shit." she said, "I'll try not to influence you--after all, I'm only your best friend. But you just can't have a kid now. Especially not single. You need to know it's a schlep since Keith left. All the time."

I had noticed that since the divorce the equal-load agreement they had sworn to had frayed a bit. They had joint custody of Melissa, which meant that Keith took her on alternate weekends and parts of vacations. But working or non-working, married or single, Nancy still had the sickroom-chauffeur-custodial duties. Just less time and money. Especially money. Especially time.

Nancy maintained that all primate males paid less attention to their female offspring than to males. This was scientific jargon for letting him off the hook.

"I'll get the test for you," she said gently, "and the other, just in case."

Of course. Nancy's friends also had a handy little black magic number made from ergot and a few other spices for spontaneous abortion.

In much the same way, females have always had a thriving black market in gender-specific products that the established medical profession either never got around to making or outright disapproved of. The charitable thing to assume is that these

products weren't officially available because they didn't concern men very much. But we must also keep in mind the burning-at-the-stake and throwing-in-the-lake episodes when the men really disapproved of women making medicine for themselves.

Carrying on the sacred tradition was a little less hazardous now that women had legitimate access to equipment and supplies.

I knew Nancy always picked Melissa up at three.

"Can you be back by two-thirty?" She added, "The sooner you find out, the easier it will be to abort."

* * * *

With nearly two hours to kill, and in no mood to do any productive work, I returned to the hill above the old Blind School.

I crossed over to Telegraph and threaded my way through the hot pretzel vendors and jewelry sellers. On the broken sidewalks of Channing I resolved to have reached a decision before telling Todd. Going up past the Buddhist shrine in the back yard of the old Delt house, I wondered if that was entirely fair. He certainly had a right to know if he was going to be a father again--decide whether he wanted to or not. By the time I reached the smooth, emerald grass at the top of the hill, abortion seemed the clear way out.

Below me was my grandmother's house, mother's childhood house, shabby with long years of struggle. It was a brown-shingled, two-story salt box, the next block down from the School. The rear of the house, easily visible, was a screen porch. The upper level was the old sleeping porch--for my mother and her five sisters. (Baby Frank had the bedroom.) Downstairs, a laundry room for the endless wash.

My grandmother had been selfless in the mission of raising her children. The mother's sacrifice.

But what about the spinster's sacrifice? Bees and wasps, and my ants, of course, don't all reproduce, as I've said, even when they can. Species that co-operate have less and less need for everybody to reproduce.

I know this sounds like some kind of droll, arcane nonsense, not appropriate to pregnancy at all, but I somehow had the impression that the selfish altruism of the spinster queen in the ant superorganism held a clue to my predicament.

In the worlds of the social ants, bees, and wasps, reproduction is expensive, a luxury. All the workers and spinsters live narrow, reduced lives so that the fertile queens can be free from work or the search for food. Every individual in the insect society knows her role--even if she doesn't understand that the group's survival depends on it. When one of my Atta spinsters started laying eggs near the queen, the colony tore her apart.

Looking at the grids of streets, the rubble of cities carefully arranged on the Bay Area hills, the cars trundling along, the mothers in their station wagons, I wondered how were we so different? Like any good superorganism, over the centuries, human society has always tried to define who could mate, who could not.

Monks, Nuns, spinsters, castrati, younger brothers without land--all these groups were part of society's strategies to define reproductive rights. These rights were aggressively protected by those who controlled them--a younger prince who dipped into his brother's harem would have been put to death.

Meanwhile the restricted individuals lived with full knowledge of what had been denied them. Humbly, we might say. I thought especially of the maiden aunts of the last century, who, having missed out on the narrow window of reproductive opportunity, or chosen not to have children, or were simply appalled by the idea of sex with a man, were relegated to raising their sister's children. Jane Austin. My own Great Aunt Elizabeth.

She stayed a virgin so far as we know. I once asked my mother how young Elizabeth was--a little girl or an adult--when she discovered society was selecting her for spinsterhood. (All three of my grandmother's other sisters had wed before twenty.)

"Oh," my mother had said, puzzled, "I think they always knew. They sent her to school, you know, normal school for teachers."

So great-aunt Elizabeth was different, set aside, expected early on not to be probable marriage material and therefore in need of an education. After that, it was assumed she would not mate. She was the plainest, the most outspoken. School was her only chance.

Throughout most of history, a single woman had virtually no chance of rearing offspring to successful adulthood. The penalties were fairly heavy for the ones who tried. (Some of them got pregnant anyway, to their personal and social peril; the language has reflected this: bastard, orphan, fallen woman.) The smart old maids, unmarried women in their mid-twenties, the ones that resisted seduction and survived unsmearred, went childless.

While they may have been rebellious at first (there is certainly the stamp of suppressed rebellion in Austin and the Brontes), sooner or later they became resigned to their fate, made peace with their families. They thereby bettered the prospects of their fertile sisters--more help at home--and probably contributed to stronger communities. Doubtless Anne, Nancy, and certainly I would welcome an aunt to mind the children.

Societies did not take the breach of breeding rights lightly in the past. Nor do they now.

So there was part of my answer.

In human terms, married women had babies. Unmarried ones did not. Our society would not tear anyone limb from limb for this, or stone one in the public square (at least not in California), but one still paid a price. No matter how many resources, protections, any one person might have, single motherhood is costly. The child pays, too.

In my case, Todd was not a sure thing. Faced with the risk of having to raise a child alone, the prudent move, the reasonable move, was not to.

I was again struck with the cunning, contradictory nature of instinct. Instinct mis-timed, that is.

It is certainly true that the instinct to reproduce is healthy, necessary. And my instinct, further, said my biological clock was running out. You have a right to a baby if you want one. In fact, it insisted I did want one--even though I wasn't sure.

But on the hill that afternoon, all the evidence weighed against having a child.

The house on Haste St. had come under the shadow of the tall pines in the side yard. The angle of the sun on the shingles told me I had just time enough to get back to Nancy's office.

* * * *

Todd was crestfallen when I asked him to stay away that night.

"I thought you'd come over to the apartment with me," he said. He was giving up the place he and Janice and Jake had shared--he never used it any more. "It'll only take a couple hours. There are a few house plants you could rescue."

"I really don't want her plants. Would you mind sleeping there, tonight?"

"What's the matter?" Todd said.

"I think I might be pregnant."

Ten beats. "Is that good?"

"I don't know." I said.

"Soo," he said gently, "have you been up to the Blind School this afternoon?"

I smiled, was touched.

"I hope someday," he said, "when we've loved each other long enough, you'll include me somewhere in your figuring out process."

I told him about the kit from Nancy.

"I'd like to be there with you. But if you want to send me away." He shrugged. "I hate to sleep alone." Gold tooth.

Funny how a man who would think nothing of taking off for ten months to the wilds of Borneo--and was planning another ten

months in the Amazon jungle--would hesitate to spend a night alone in his own rented apartment. But we are such creatures of situation. I assumed he was being silly then, but the credit goes to him. He was better at loving.

In this, the habits of my former, solitary life persisted: Joy was a together thing. Suffering was to be done alone.

I wonder every so often how the ants manage to suffer. So many of them, crawling over each other.

"I'll meet you tomorrow at noon--we can go directly to the picnic," I said.

Todd grabbed a few things and slunk to the door. "I hope you enjoy the cantaloupe."

It was time to follow the directions--hand written by Nancy--in the little kit. The kit was a collection of stopper-bottles, a tongue depressor, and a petri dish. Unlike the drugstore models of the old days, it worked very quickly.

Positive.

In the afternoon, on the hill above the old Blind School, reason had dominated most of the air time. Back at home that night, submerged in a mimosa bubble bath, I let instinct have her side of the argument. (Why is instinct a she? I don't know, you'll have to ask her.)

Instinct presented the case of Africa.

In the investigation of why love, why two sexes, I have said some pretty harsh words about Charlie Darwin, and aired some

serious despair about the particulars of sexual arrangements, and even claimed that there is no absolute morality to survival--but that does not mean that the natural world is not in itself a beautiful and awe-inspiring place.

We aren't convinced of that every day. It takes a superhuman concentration to feel yourself a part of an enfolding, cosmic unity when you are maneuvering through traffic on University Avenue or shopping in the mall in Glendale.

From time to time, though, if you are paying close attention, you get intimations of a stupendous earthly beauty. A beauty that amounts, in itself, to a sacred language. The dragonfly wedding, the giant orchids in the rain forests of Brazil, the San Francisco Bay from a Berkeley hill on a hot night in October--black, orange and sapphire, the sight of the Atta topped with parasols parading ceremoniously through the bush, a black and scarlet cecropia flying into the flame, the floating city of the communal spiders, a half of cantaloupe.

But these are only glimpses, snatches of song; they just make you wonder why the original author made liverwort when he knew how to make gardenias, why Libya when he could have the Kona Coast, why Flatbush when everything could look like Malibu.

Other times you can actually get the rhythm of a place, and feel like you knew the words all along.

That was Africa for me.

I went for a term as a graduate student.

Malcolm Evanson, my mentor, was leading the group. All of the other students were attending a seminar at a local university, but Evanson and I had planned to strike out on our own in the Kalahari once we got there. (Not to worry about my virginity in the solitary Second Instar. He was, and is, married: he is also gay.)

Evanson and I rented a small quonset hut affair with canvas walls and managed to get it moved out to the site of a spectacular ant and termite site in the Okavango Delta.

Perhaps one of the things that let me hear so clearly the encompassing melody of nature was the counterpoint--our own pitiful attempts at retaining civilization in the face of the flux all around us.

Evanson, for example, was an amusement of civilization. He really did love field work, but he complained about the hut. He said the dirty canvas made his asthma act up. I never did see any signs of asthma, though, while we were bellying through the pig-sticking bush or nosing through the dirt.

I think it offended his exceptionally cultivated nature to reside in what was essentially a tent. Scientific work was one thing, lifestyle was another.

In the evenings, when we were transcribing notes, he liked to sit out on plastic sheeting he called the porch, pull down the netting from the overhead awning, and pretend he was at home in Oakland.

He'd brought the comforts of home, his favorite brands of port and cognac and B and B. I tell you this as an aside, because when we were done with work, we'd have a glass or two and he would tell me about himself--how he landed up being married with three kids and never desiring women.

And we'd watch the fireflies. One night we went out and trapped a few in a mason jar. When we examined them we realized we actually had been watching different species. One of the ones we caught was a Photuris versicolor--a large, cannibalistic female. Fireflies give mating calls by their flash (hello Charlie Darwin). The male firefly finds the female of his species by sending out his own characteristic flash signal. When he spots an answering signal that matches his own, he flies to that female and mates with her. Unless, that is, he received his signal from the P. versicolor. The female of this species mimics the flash of a female of another species to attract prey. When the deluded male flies to his expected mate, he is seized and eaten. The female is always bigger than the males she preys on. The tricked males are sadly and universally outclassed.

One night, when we were watching the signals (P. versicolor can mimic the signals of four species and change patterns at will), I asked Malcolm about homosexuals and mating signals. He said no, no mix up. He knew from the time he was a boy that there was something different about him. The mix up was when he tried to pretend he didn't. Looking back now, he was describing

his entry into his Second Instar. An entry that brought the knowledge he was somehow "unfit" for the normal course of selection.

He said he no longer looked to science for the answer to such mysteries. And I don't think he has, since.

But science is still the only way I know to translate the script of nature.

The African spring was like a great, white egg. From the inside.

The urge to grow pushed everything towards the huge, astonished sky with a force that threatened to crack it open. The grass would grow several feet in a couple of days, after a torrential downpour. The land itself promised to be bigger. It swelled daily, bursting open old folds into raw gorges and canyons. The new rifts were not visible from a distance, but driving or hiking across the plains, we would suddenly fall upon a new wash, carved a moment before out of the underearth, and see that its steep sides were rutted and licked by the fast water that was already a memory.

It was enough.

The gorge was a special environment. One swath of water nourished a tentative, breathless, bushy world that crouched in disbelief, hidden in the crack, eluding the horizon for a time, until the quick trees would pulse upward, feathering the landscape with spoken green rivulets of African spring.

The life under the trees broke into being with equal suddenness. Water bugs and tadpoles were instantly stirring in the briefest shallow pond, arisen like ghosts where there had not been a trace of larvae or frog. Ground animals, splashes of tiny birds, paused to wonder at the stands of game and beast that pounded the new mud wherever the gorges flattened into real water holes. It was spontaneous generation.

The creatures from underground came to the surface, too, to participate in the spring rites. I spent those pleasant days following endless stream beds, running into the cool, sudden pools, tracking the sunken country where the roots of the grass were head-high above me, breaking the banks in their effort to suck the new water, and the ripening grains of next year's grass were six feet above that. I traced the creek beds where the water was cool and shallow, splaying my feet in the grateful mud.

And we watched the creatures. I was just getting familiar with the social insects. We studied the ants when they were up and about.

And we made friends with the termites.

The termite workers had tunneled up to the surface of their mounds after the long dry season, patiently blocking the new exits against sudden rains. Now and then a curious, red-mouthed soldier would poke an inquiring, near-blind, translucent eye toward the unfamiliar sunlight.

The new queens and princes were ready to fly. As soon as the ground was soft enough, whole swarms of the fertile pioneers were carried on white bridal wings into the light air.

I liked the termites.

I looked on their nests as a somehow quaintly romantic form of social organization. For one thing, the termites represent a very primitive form of social evolution. They were a species that branched from a very low-level limb on the family tree of insects. The male is not viciously ejected after fornication--as with the bees and wasps--he stays with his huge, billowing African Queen for life. Tiny, like the rest of his kind, almost invisible at his mate's swelling, egg-distended side, but there.

Termites might make a nice meal for a chimpanzee, or weaken a house, but they are a kind of earthy, earnest species when compared to the efficient machine of the Atta. Since the termites were more of a "feeding community"--not into stringent genetic control--they seemed like a homey kind of critter.

When the rains were over, the system balanced itself. Unhampered by mankind, it exercised perfect homeostatic control. Each new termite queen went underground, grew large with eggs, became unable to move alone, sat swollen and stretched, accepted the job of laying thousands of eggs a day. She became the willing slave to her colony of willed slaves.

The rest of the creatures went underground, too, or vanished without a footprint in the ripples of dry creek air that invaded

the land, evaporating the green into dark puddles of vegetation, bones of the thirsty: the breast of yellow land withered, shriveled, and then died. Pinched into extinction by the white, eggshell, boiling summer sky.

But there was something in this cycle I could understand.

The land and its inhabitants were resplendent in their own cycle of birth and death. Given the possibility of birth, all of the beasties and green life rushed to take advantage of the spring while it lasted.

By the time we were to leave, the rhythm was sunk into my soul.

Our leave-taking solidified the experience in my mind.

We had some work to finish, mainly with the ants. But even in the dry season, the flamingo, barren clouds would cover the yellow sky. They made a tantalizing pledge of rain that would be denied by morning. They were also full of long-term promise: a solemn contract between father cosmos and mother earth. The only word that will be kept--the rhythm of life and death.

That being the given, I chose life.

Chapter 8

SCHWANZELTANZE

Having chosen life, it was also necessary to choose living. The next day, Wednesday, I arrived early at my office in Wellman. This is my "real" office--we just have desks and file cabinets at the Oxford Lab. I keep all my teaching stuff here--it has my student records and textbooks, and ceiling-high bookshelves with the fiction library I've acquired at the bookstores and borrowed from Anne. A good place to work. I was determined to finish my grading before Todd came at noon for the end-of-school picnic with the graduate students.

For the first time since I had entered the Moon Instar, I felt calm and resolved. There was no telling what was ahead, but I believed that a way existed and that together, Todd and I would find it. It was a cause for celebration, calling, maybe, for trumpets, violins, people breaking into waltz.

Todd did not break into a waltz, however, early or late. At noon sharp, I saw him through the window of the door, (which I had probably been staring at for ten minutes) and let him in.

"Soo, what's up?"

I felt my body stiffen. "What?"

"Are you or aren't you?"

I'd forged far into the jungle of sorting this out, come out the other side; I had forgotten that he hadn't been privy to any of the imaginary Darwinian debate.

"Yes," I grinned. "Yes."

"Why are we smiling?" He was already starting to pace, preparatory to jumping out the window, it looked like.

My heart started to ooze vital fluids, shriveling a little. "I don't know, I'm just happy." I sunk into my chair.

Twenty beats. Then he knelt beside me.

"I'm sorry, Libby. I was only thinking how hard it would be on you. I don't want to live without you--so I surely want you to be happy."

I loved this, loved hearing it, loved living it. Not even the best steamy romance compared to this. (Well, the locations were slightly more desirable in the fictional books--hardly anyone you read about has a heavy petting session in a formicary, for example, or, even though offices are popular, a cubbyhole as humble as mine.) I supposed that since we were thusly transported with lover's joy even in the lab with its pale red glow and the hum and heartbeat of the Atta, our love was all the more genuine. Any two bodies can feel like Romeo and Juliet or Paolo and Francesca at the Royal Hawaiian or on the beach in Papua. Only a true love is sustainable in the press of the ordinary, mess of blue books, odor of the ants.

And I didn't want to spoil this feeling. Though it was never evident what exactly was missing during my dreary Second Instar, I'd spent a long, long time without love. Now I wanted to keep hold of it more than any one thing in the world. Except perhaps one other.

In the Rosemary Rogers romances, the heroine is found to be "carrying" the hero's child toward the very end. This knowledge bonds the characters, deepens their love.

We are encouraged to believe that the hero is as happy about the child as his lady is. But the book always ends in the next five pages, so we never really get to find out how exactly happy he is.

I had my doubts about babies and real-life romance.

All of this was washing through my head as we kissed. Todd had restored my peace of mind by accepting the idea of a child, but it wasn't going to be the African spring, either.

"I don't know what possessed us to meet here," he said. "We should be spending the morning in bed. Do you still feel like going to the picnic?"

"Not really," I confessed. "I haven't finished my grades."

"Oh, you've got three weeks. It's not like being pregnant will incapacitate you."

He gave me a questioning look. "Will it?"

"I don't know, I've never been through this before, you have."

He sat down in the student chair. "In a manner of speaking." He let that pass. "I just went by the lab. De Witt has picked a place in Tilden Park--we're going to take cars. But you and I could ditch."

"I don't think Waldheimer and Pardee would forgive us, somehow. We'll find a place to talk?"

Actually, as it turned out, Lars and Pardee wouldn't have cared. Usually, the end-of-term department picnic with the graduate students is a subdued affair. Not that picnic. Everyone knew there were spots open to go to the Amazon, so there was a halo of excitement. De Witt had taken over the organizational function from Dean Sylvester. He volunteered our parking lot as the assembly area, so graduate students from all over the department were bringing food and sports equipment sufficient to outfit the next Olympics. Another big source of excitement was created by Sylvester's new graduate assistant, Rhoda Wheeler. She showed up in a tight tee shirt and skimpy shorts with a thong-affair bathing suit underneath. Since she is very handsome and tall with waist-length, copper hair, she stimulated an undercurrent of competition among the men. Even Pardee was jolly about loading soft drinks in Waldheimer's beat-up Volvo wagon and going off two hours early to help "set up" the party. He managed to sit in the front seat with Rhoda. Todd and I followed. De Witt had even provided everyone with maps to the streamside picnic area.

The spot was shaded with old acacias and cottonwoods and had a nice, grassy bank that sloped down to a cluster of large, flat rocks that lined the stream. Our group played host as the rest of the faculty and grad students arrived. It was hot. Some of the kids stripped to swim suits and went upstream to a little swimming beach. Others started a pick-up volleyball game.

Todd was busy talking to students who were anxious to go to Brazil with him. Doug Huang and Patrick Moran seemed determined not to let him out of their sight. They were the top choices for the trip anyway--and that left one more opening. The one that Todd had saved in his mind for me.

Sylvester was playing ping pong with Margaret Huffaker. People who scarcely spoke on campus were yelling "great shot." You had to hand it to De Witt.

The only cloud, party-wise, was the cake. De Witt had ordered a cake to celebrate our move to the Strawberry Lab. With a picture of the new building on it. Excessive.

Waldheimer was cooking, and Pardee was involved with a group, including Rhoda, tramping around in the surrounding underbrush and up a nearby hillside--trying to locate a beehive.

As a stray bee alighted on a patch of clover or a wild daisy, one of the group would mark the angle of the bee's return flight to the nest with a toothpick arrow. First one would shout "I have one." Then another would get a bearing. Soon they had a series of markings on the "staging area" they had laid out on the

grass. The vectors appeared to converge at a point across the canyon and upstream a bit. About six of the students prepared to set off to locate the hive.

Rhoda came around inviting people to go on the hive-hunt. She invited Todd--Doug and Patrick tagged along. She called to Margaret and Sylvester, but they wanted to finish their game. I didn't wait to be asked. When she got to our table, I jumped up, ready. Waldheimer was still feeding the bathers and volleyball players, but he said he'd follow.

Off we went, shoes in hand, Pardee in the lead. It made me happy to see him having fun--at first timidly dipping his pale feet in the icy creek water--reacting with surprise as small bubbles of air held his instep hairs aloft in the water--much as the hair on his head stood up at the end of a long day at the computer. Then more or less forgetting himself--he became immersed in the adventure.

That's another thing I love about science. Despite all of what Nancy calls academic bullshit, grantsmanship, tedious documentation and so on, there is, in the pursuit, something still informed by a childlike curiosity--a sense that there is mystery and message in the natural world. At their best, scientists can forget career and cant and just get lost in the wonder of discovery. I imagine things are that way for writers, too. I hope so.

Todd and I brought up the rear--crossed the stream and followed the merry little band up the slope.

Soon Pardee's jubilation echoed across the canyon.

"We've found it!"

When we got to the hive, a couple of students were preparing to trap a few bees.

They were hanging over the outcropping that sheltered the hive. The nest was built into a cavity under a sandstone ledge and the group had already determined it couldn't be reached from below. Pardee was situated in the most precarious spot of all, right above the hive, having a great old time.

At first everything looked normal. Nice bees, nice cave, nice day.

"Root beer honey." Todd whispered in my ear.

He squeezed my hand.

Root beer, Sara Lee, or whatever, this hive was doing quite well. In fact, soon the bees began swarming out of the hive, hundreds of them, and settling on tree branches, bushes, and handy scientists. Mild panic and a few stings ensued as everyone scrambled down from the cliff to a safer spot.

Everyone but Pardee, who was stuck on his little tussock, surrounded by the bees. And Rhoda, who edged back up to help him. She made a pretty sight. Pardee, being a card-carrying hymenoptera (winged insects) specialist, was not afraid, technically. But he was afraid to move, it appeared.

We all took up residence on a nearby slope across a little gorge--at a respectful distance. Rhoda kept coaching Pardee, trying to tell him which foot to move, where the hand-holds appeared to be. When he didn't answer, and didn't move either, she turned around, crawled back into the swarming bees, climbed the ledge above the hive, pulled Pardee from his perch, and carried him down out of the swarm.

The students cheered. Todd raised his eyebrows and looked at me.

"And not the less impressive in that outfit," I agreed.

"Has she applied for a berth on the Amazon expedition?" He asked.

"Yes, but Sylvester probably won't part with her."

"She'd be good there, if you can't go with me." Todd said.

I was stung, and puzzled, and profoundly aware of how one crucial choice would begin to eliminate others. My dream of love was infused with many fantasies--not the least of which was the two of us in the rainforest. But the facts of love were producing some unanticipated outcomes. I had decided to have this baby; that meant giving up the chance for Brazil. It also meant someone else would go. But I was unwilling to believe that had anything to do with our relationship.

"Well, you won't hear me say no--I think women should be encouraged to do field work." I said bravely.

"I was hoping you'd say you were going to Brazil--no matter what." He said.

When Pardee was safely retrieved, we soon established that the hive was in full swarm because the bees were in need of larger quarters. The colony must have come through the mild winter without major damage--so overpopulation was forcing them to colonize new territory. The society would split--some of the members following a newly-designated queen to a new home.

The reason why the bees all came into this sort of outdoor amphitheater is because the Apis mellifera make a "democratic" decision about nest sites. This surprises most people who think a beehive operates like a monarchy--as in other things, the workers in the hive actually run the show.

The reason Pardee and his band had found the hive so fast was because the bee scouts were out all over looking for a place to found the new community. When a bee scout discovered a new nesting place, she returned to the hive, "danced" her information to the other workers--an agitated dance for a good site, a sluggish one if the location was questionable. Scientists used to think that the bees' schwanzeltanze was only to tell the other workers where the best flowers were--now we know that the bees can communicate several kinds of messages with their "dance talk."

We watched for a while as the bees whirred and droned through the leaves, danced together on the ledges, waggled their

tails, and conferred about what to do. Then, hunger drove us to return to the picnic.

Back at the picnic, people made room for us at the tables. They made room for Todd and me, together. It was a relief to realize that, by this time, everyone in the department seemed to accept that we were a couple. The subtle versions of social disapproval I had expected, had not materialized. Except for Sylvester, who gave us a few pointed stares, our colleagues carried on as if we had always been a pair.

While I chafed to steal away with Todd to begin the baby discussion, De Witt drew all of us into one of his confrontive, urgent little talks about what might be accomplished on the Amazon trip.

I had learned to stay clear of these discussions--always ending up frustrated by them. There's a certain kind of abstract, theoretical style of argument that has a we've-always-agreed-to-this-fact quality which precludes new suggestion. Heaven forbid you should say, well, that theory doesn't feel right to me--it doesn't confirm my experience, doesn't reflect what I've observed. "Who is your authority?" the mini-authority will ask. Of course you can't name an acceptable "authority" because all of the established predecessors were trained to look at things in the same way, trained to entertain the same brand of selective blindness.

(That's not to say that the intuitive approach doesn't contain an equal amount of selective blindness--it's just that females who depend on intuition are regarded with more suspicion than men who might.)

Still, De Witt's traditional position was particularly annoying. He came from an abstract area of science anyway--his background was population dynamics. He was most familiar, really, with theoretical models. And, he had come to be fascinated, more and more, with the idea of controlling reproduction in large social societies. In the case of the social bees, that was a positive thing. Mankind has always wanted more bees to the hive: more bees, more honey. In the case of ants, the human goal was to have fewer, of course. He was, at the time, tempted with the prospect that lots of people would be interested in genetic or natural methods for of controlling ant populations. What a great idea that would be for the commercial profits of developing tropical nations, he would say.

"I'm sure it would, at the start," Todd said.

"We're not talking about cutting jungle," De Witt insisted, his eyes shining, "we are talking about land already under cultivation. Millions of dollars in South America alone."

"Some of that to us, I suppose," Todd suggested.

"Yes, but more important, jobs, food for the people." De Witt said.

About this point, Margaret Huffaker came over to the table with some slices of cake. I declined in favor of more cantaloupe. De Witt explained the purpose of the cake to Margaret in case she hadn't guessed. She smiled and sat down. De Witt continued.

"What I'm thinking of is a natural substance, something the ants themselves secrete--a way to alter that so that colony communication is disturbed. Maybe depress the rate of establishment of new colonies." De Witt turned to me. "You might have some ideas here, Libby."

"You'll be the first to know when I get a clue," I said.

Margaret caught the drift of the discussion, but she said nothing. Her eyes focused on the middle distance.

Either one of us could have reminded De Witt that ants were a key source of topsoil for these farms that were going to be "helped", but it was futile to argue against the specter of up-front jobs, a few more bushels of corn for a couple more years.

Maybe we should have continued to argue then, continue to argue in the future. Maybe not. In any case, women in science haven't necessarily been agents of change, really. By the time we are certified as able to compete in the male academic world, we have, by definition, been dissuaded from taking non-traditional approaches to problem-solving.

Somewhere along the line we reluctantly give up our visionary ideas, adopt a conservative judiciousness called the scientific method, and then cling to the comfort created by all of us agreeing to conform to the system--and pretty soon it's hard to imagine what a "creative" approach even is any more. (I know, such compromise isn't just found in science, it's the basis of life itself.) So I try to do my work and let the results create their own authority.

The Spinster Hypothesis is a kind of accommodation in that way. The theory is controversial, but the work is being done in the proper manner. Still risky business, though, I'm sure you'll agree.

Margaret and I continued to listen to the discussion in silence.

* * *

After we returned from Africa, my mentor, Malcolm Evanson, and I were even closer friends than ever. This was good for both of us. He had made some rather elegant discoveries in Africa about mutualistic associations and was reaping no-so-minor-glory for them among the insect ecologists. He had his regular graduate students do all of his computer graphs and charts, but I wrote the narrative for his papers. (Helpful for him.) He on

the other hand, was a much more useful mentor for me as a quasi-celebrity. My doctoral thesis was approved in record time.

I bring this part up to show you what I learned about profile (a different kind of profile problem than the mating one in high school--but an issue of survival, nonetheless).

Anyway, on one particular day, we attended a faculty meeting--system-wide--for the professors in Natural Resources from all the UC California campuses. After the big meeting in Wheeler Auditorium, "interest" groups were scheduled to have dinner together. We had a banquet room at the Durant Hotel. Malcolm was there, and Dean Sylvester, Margaret Huffaker and some other professors from UCLA and Santa Barbara.

The conversation drifted around to evolution and which of the social insects were more advanced. Everyone agreed that the honeybee, because of the sophisticated waggle dance to recruit workers to food, got the crown.

I ventured to ask if perhaps the bees were given high priority because their waggle dance falls into our communication mode--it is visual. Could it be we ignore how beautifully evolved the ants are because we can't read their communication? Even though the ants communicate by smell, by chemical exchange, I said, there's lots of evidence of their evolutionary success and complexity. Maybe the ants take scientific back seat because we haven't looked closely enough at them.

One of the professors from insect ecology sized me up.

"But you don't have any evidence about the precise nature of that communication, do you?" He said.

"Not yet, but...." In the presence of these bee-snobs, I was actually going to use the conventional arguments about species development--the fact that all ants are social, the complexity of ant specialization, the wide distribution of the ants, their abundance. Evanson gave me a murderous look and I shut up.

The insect ecologist went on to urge that in our attempts to regulate agricultural pests, we should be very careful of the social bees because of their level of advancement.

I graciously agreed that the "helpful" honeybee deserved our special protection. Evanson smiled with relief.

What I did not say was that I sensed the presence of another, more sinister assumption inherent in his position. And it's an essentially human-centered one. First we define what "advanced" is (Anything that is Like Mankind or is Useful for Mankind). So far so good. Then we declare that lesser-advanced creatures have a proportionally lesser right to live. (In the case of humans beings, even some scientists still maintain that certain races represent an inferior evolutionary product. Women are no longer thought to be inferior physically, only in behavior.)

What a strange perversion of nature! It's as though we had concluded that the process of evolution was designed to lead in

only one direction, a monograph for creation to reach the pinnacle of evolution, the top of the only important life pyramid--the only sacred being--man.

It's as though some people expected ants, one of these days, to shed two legs, stand upright, get lots bigger, and join the human race--at which time they would have "arrived" in terms of evolution.

I don't mean to protest this kind of evolutionary fallacy lightly, either. We have sincere folks out there protecting the whales and dolphins--they are "mammals" and "intelligent." How many people are dedicated to protecting the termites? Nobody. We think we can do without them because they aren't even at the "top" of insect evolution.

I'm tempted to regard any system that respects the variety of life with a certain affection. The termites, the bees, the ants have all evolved differently, but there's no question that each one is excellently adapted to its own niche. Equally deserving of survival.

Taking this position doesn't mean I know how we are to go about establishing biological harmony on the earth. I like the ants but not in my kitchen. Spiders--even the Friendly Reds--still frighten me. I'm not sure non-competitive harmony is possible in nature--red as she is in tooth and claw. But I sure hate the thought of us wiping out all but a few "trophy" insects--let's see, we'll keep the honeybee, dump the ant, keep

the ladybug, dump the aphid, keep the butterfly, dump the caterpillar--you see how that goes.

After the second cup of coffee, the group broke up and we all returned to our several offices, promising to get together more often.

Malcolm Evanson followed me to my office and closed the door.

"Libby," he said, "you must be careful to separate content from process."

I knew what he was talking about--that's why I was taken aback.

"Wait a minute, Malcolm, women know all about process, but we agree to abandon it for the sake of the scientific method."

It's more complicated than that, he went on to explain. I knew he wanted only the best for me, so I listened.

He maintained that the question of insect evolution had never been the point of the discussion at the hotel. He said the purpose of the interaction was for colleagues to mutually assure one another that their views were orthodox. He warned that it was unseemly for a neophyte, especially a woman, to think that male discourse was an opportunity to challenge accepted facts.

"You need to keep a low profile," he told me.

I protested that I believed rational discussion was exactly the way to raise questions. If you couldn't raise honest

questions that challenged authority or advanced new ideas in rational argument, just how could you raise them?

Malcolm chose not to respond to that.

"Did you notice Margaret rocking the boat?"

"No."

"She used to. Several years ago she was appointed to a state commission in the earliest stages of the fruit fly problem. They--the University and the government--wanted her to rubber stamp the spraying. She stood up and said spraying was only a temporary solution and would perhaps cause serious problems as the insects bred new strains, immune to our pesticides. No one wanted to hear that--they wanted to hear something was being done. She nearly lost her job."

"It didn't help."

"Exactly. Not only do I not want you to hurt your own career, I can't tolerate you hurting mine."

"I guess you'll do that yourself," I said as gently as possible. Malcolm was in the process of coming out of the closet--and even in the 1980's, at Berkeley, some people would feel this was an inconvenience. Especially his wife and three children. He was about to risk a great deal by being honest.

Malcolm nodded. He was thumbing through my copy of Pride and Prejudice. "Let's be very careful about which limbs we go out on, otherwise you'll be reduced to writing stuff like this fiction you waste time on."

Malcolm's advice made sense, and I resolved to practice it. It was the final step in my attempt to be "one of the boys." In the latter years of my Second Instar, in addition to quitting the search for a mate, giving up on the idea of children, settling into a tolerable solitary life, making my way in the male world, I earnestly followed the professional rules of the game. I was, for all purposes, what I had wanted in the beginning--an almost-real boy. Notwithstanding, as a woman in science, I had only a tenuous relationship with the power. I was in a man's position. But, I was treated like a boy. An invisible boy.

The persistence of this strange invisibility is still astonishing.

* * * *

While Margaret and I were still being quiet, content to be safely ignored, Doug and Patrick joined us at the table. They were in high spirits, wet from swimming.

"Wow, where do you think Sylvester found that Rhoda," Doug said. "She's something else."

A murmur of assent. Someone told a joke about breasts. As if there were no women at the table.

The picnic took a long time to wind down. Everyone agreed it was a tremendous success, made plans to have another one soon--all the signs of a good social gathering.

Later, when Waldheimer's station wagon was repacked and everyone else was heading off, Todd asked me if I wanted to go back and see how the bees were doing. His invitation to talk....

The bee scouts had thinned out. It appeared that only two dancers were still in contention for the agreement of the rest of the hive. The scouts danced on. Now and then one scout would fly off with a delegation to inspect one of the favored spots. When she returned, her new converts would dance her pattern, advertise her site, trying to persuade enough of the hive to make a decision. Evidently neither scout had the full support of the colony because they stayed put, buzzing and proselytizing and debating.

Todd hugged me inside his jacket. The afternoon was waning and a chill wind began to blow.

"It's a pisser, isn't it," Todd observed.

"Yes," I checked my watch, "about twenty minutes and ten degrees."

This hive, having been so successful, was now about to pay the price of indecision--a side effect of big democracy. Unless the bees made a choice soon, they would stay outside all night, mired in their argument. If it got cold enough, and that was quite possible, they would die of exposure out there.

"They wasted too much time this afternoon," Todd observed. "Too many individuals, too much information, they can't even take a course of action any more."

"Or like the dragonflies--an innocent mistake."

We watched silently for a few minutes as the sun began to drop behind the lacy cedars across the stream.

"I hope they hurry," he said. "A shame to be dead by morning. Speaking of which...."

"I wasn't plotting the overthrow of the ant kingdom in Brazil."

"Neither was I. People don't take De Witt seriously," Todd said.

"Oh but they do. We're moving to Strawberry. The University has an agenda for Brazil. They surely do."

"But if you're going to have the baby and all, it's not so important, is it?"

I shivered.

Not important? How so? Just contemplating motherhood made all forms of life appear more important. And my career was more important, too.

He started to remind me we had plenty of warm places to discuss this, but I interrupted.

"It's just like the bees," I said with more agitation than I had expected. "You can't wait forever. I've decided to have it."

"I know that, and I respect that," Todd said with elaborate patience. Three beats. "And I presume, since you are confiding in me, I have something to do with this."

End stop. I studied his face in the last of the light. He was smiling, but he was hurt.

He was entitled, too. If he had made a solo decision about something that important to me--and only told me later, I would have been crushed.

On the one hand, as a lover, I felt that my connection to Todd was absolute. I was bound to him by the strength of physical intimacy, first. And then, we had shared the doubt and hurt of our backstories, and had grown intimate in other ways, and still loved each other.

But there was the daunting paradox of love and survival. As a prospective mother, on the other hand, he seemed a stranger. It was my body. My child. My inconvenience. My future.

"I'm sorry," I said, "let me start over."

"OK," he said, "but try not to underestimate me."

"You know how hard this is--you still married and all."

"I know."

"After the cantaloupe thing...." I told him all about the Nancy and the pregnancy test and the abortion tonic and reason on the hill and instinct in the bubble bath and the spring in Africa.

When I had finished, he stood up, lifting me with him.

The bees had fallen silent, were motionless among the leaves, quiet along the shelter of the cliff.

"We can talk about this where it's warm and light. We don't want mother to get a cold."

At the car, Todd got the aqua blanket from the trunk and helped me in the car.

When we reached the crest of the hill coming out of the park, the dark was complete. A pair of headlights crept toward us and I thought briefly that maybe Waldheimer had come back to see why we weren't back yet--but the lights reached us and went on--the car was filled with the usual students out for an evening of partying. We passed the trail to our hilltop lookout.

"Are you happy about this?" I asked.

"Jesus, Libby. Happy isn't the operative word. You do what you need to do. I'll do what I can. Staying in touch is operative--I find it hard to take the way you compartmentalize your life. I never know which one I'm allowed in to." His voice was miserable.

"Maybe you don't understand. If you were planning on getting a divorce, then it would be our decision. As it is...."

"Are you asking me to get a divorce?"

"Would you ask me to have an abortion?"

We continued in silence.

So this was why I had wisely chosen science over life in the Second Instar. Then, I could observe the misjudgment of the dragonflies, the confusion of the sun box ant, the plight of the mellifera bee colony, note them down and proceed on to the next

interesting problem. If a theory proved wrong, you simply recalculated. Reformulated the problem.

Science was easier than life.

"You know," Todd said after a time, "I guess I believed all along that your first choice would be to come to Brazil with me."

Ahead of us the lights sparkled like every other night in the Berkeley hills, across the bridges, and into the city beyond. The twilight was gone, the moon was high and on the wane, and a cool shadow had settled in behind us.

Chapter 9

AND BUTTERFLY PERFUME

Two weeks later was the Baton Rouge International Conference on Social Insects.

Nancy kept marvelling over the fact that it was being held in Baton Rouge.

"I've never heard of a conference in a place like that--it's barbaric. I didn't know we even let foreigners into the hole."

"It's just a small group. I think it was the Europeans who wanted it there--so they could hang out in New Orleans."

"Then hold it in New Orleans."

"This looks better on the paperwork, don't you think?"

"I guess. When is your session?"

"The second day--I still have some writing to do on the plane."

"What are you going to wear?"

Just another question for which I didn't have the answer.

"Too much," she added, surveying my closet.

And it was. Although the conference was a minor one, I had made sure to be on the billing with De Witt. This meant looking good.

Nancy was over at my house, helping me pack. Melissa was watering the flowers in the back yard. This was her "job" whenever I traveled. Nancy liked it that Melissa could earn her own spending money, have a small responsibility. I think Melissa just liked my back yard--liked to imagine herself in some ancient jungle. Nancy watered the house plants for free.

"Sounds like you've got too many balls in the air," Nancy said, holding up a red sundress for my approval.

I shook my head. "Think loose-fitting."

"You don't look like you've gained much weight yet," she said, stepping around Todd's luggage on her way back to the closet.

I hadn't, but for some reason the idea of anything even snug was unbearable.

"I think this is fat-making, but it will pass for ethnic." Nancy said, returning with a long, full skirt and oversized blouse. "How's plans for the move?"

"We had yet another meeting about it a couple of days ago-- De Witt wanted a vote, so we had one. I abstained. But it was pro forma, the decision has already been made, the party hosted, the cake consumed."

"You're allowed to change your mind." She went to my scarf rack and began ruffling through the silk.

"Nothing left to change." Mind, that was. The incredible shrinking mind. Any one of the impending disasters I could tackle by itself. Any two. Any three. Any four. But after a while I had begun to feel like Gulliver with the Lilliputians. Every time I managed to move to just a little more comfortable position, the ropes were pulled tighter. The baby, Todd leaving, Todd staying married, the dreadful tenure business, my Spinster paper, the lab, the Atta and so on. Thinking seemed to make it worse.

I went into the bathroom and started throwing cosmetics in my case.

"You're right," I said, "too many balls in the air. One is sure to drop."

"You don't know how many," Nancy said. "I wish you could hear what you sound like when you say: 'So, we'll move the lab, Todd will go to Brazil, I'll have the baby, I'll finish my paper, I'll get my own lab assistants to finish my work, I'll face the tenure review board, and then Todd will come home or not come home and we'll see.'"

She said this all in a kind of cheerleader-dedicating-a-rock-record-over-the-radio voice: i'd liketadedicate thisong tomyboyfriend scottandallmyfrensathome....

"I hear you, but I can't figure out anything else but to just go forward."

Nancy pulled a blue lace nightie from my second drawer and slipped it into the suitcase.

"Sometimes that's all you can do," she agreed, "but remember how fragile love is." She went to the window and tapped on it. When Melissa looked up, she waved.

She sighed. "There's this other thing. You need to accept your own loss of fitness."

"The body is fine," I said. But she was referring to another kind of fitness--Charlie Darwin's kind of fitness.

"Your ant queens have a free ride. You don't even know if you'll get the normal support. Like, is your insurance good for pregnancy if you aren't married? What about maternity leave? I hear they aren't granting any parental at all. Have you checked to see if you get time off, if you'll get paid? Human mothers have to compete for resources along with everyone else. Despite the handicap, and the playing field slanting and like that."

"I'll just have to work harder." I said. But even then I knew that was impossible--I already cared more about the baby than my job.

"Oh shit, yes, Libby, work harder. There's an idea." Nancy folded my jean skirt in on top. "Look, let's call Melissa in and have some lemonade."

Todd arrived twenty minutes later, ready to go to the airport.

He brought flowers for Nancy, little garden gloves for Melissa, and a prettily-wrapped package for me. Inside was a small, diamond-studded dragonfly pin. A baby dragonfly. A gift of hope.

On the way out, Nancy whispered, "Gifts are good--but don't discount another diamond trinket--like a ring."

She waved us off.

"I'll lock up for you."

* * *

Once we were in Baton Rouge, the choice of cities was even more a mystery. Louisiana State was sponsoring the meeting--but the conferees were billeted in a less-than-impressive lodge called the Embassy House. A variety of presentations were on campus, and the main meetings were to take place in a combination dining room and meeting hall at Embassy House. I was grateful that Todd and I had rooms in the same wing, but that was only because we had sent in our early registration packets at the same time.

Also in Baton Rouge, we found an on-going battle between the scientists and the mosquitoes: the mosquitoes were winning.

I had been feeling good so far, no morning sickness, no fatigue, but I hadn't counted on the impact of the Louisiana heat. Or the peculiarities of sex and survival.

The opening dinner was held in the old dining room at the Embassy--with the emphasis on old. The first thing I noticed on the way down the narrow, magenta-carpeted stairway was that the promenade had the scent of the male grayling butterfly--sandalwood with an ancient, oily undertone. When the carpet changed color, at the entrance to the dining room, it changed smell, too, to the spicy odor of the monarch butterfly.

The room was close and crowded. The dinner was refried chicken. The air conditioning was out. As soon as we could decently escape, Todd and I, De Witt, Malcolm Evanson, Boswell Reutinger (a member of my tenure review board), Carlo Marchesi, and the Farbers slipped out the side door.

Outside, the air was no cooler, but more humid. From an oven to a sauna bath.

"My vote is for some real Cajun food," Carlo Marchesi said. He knew a place a few blocks away.

"Maybe we could get a cab," I suggested, regarding my now-grotesquely-swollen feet.

"Not you, Libby," De Witt said, "the original outdoors girl."

"Oh let's walk." Bill (Beetle) Farber said. Both Farbers had managed to eat their dinners.

"Then we can catch a cab to the Cotton Club," Reutinger said. They were out to make a night of it. "Which way?"

"Would you rather we go somewhere else?" Todd asked me softly.

It didn't matter. One food sounded as unappetizing as the next. There was an outside chance that Chinese food would sit all right, but not in Baton Rouge.

The inside of the restaurant confirmed the worst. The walls were old orange and grease. The booths were fleas and cracked leather. Our group piled into two adjoining booths. The smoke from the range had left lengthy, liquid streaks on the copper hoods and hung in the dim light of the copper ceiling lamps. I sat straight, not trusting to put my hands on the formica table, studying the wax roses in the planter behind the bussing counter.

"This is one of the most authentic places in the state," Carlo informed us.

While we waited for our food, he regaled us with the results of his latest research. Carlo's work with was the cockroach. Fitting, I thought. He had found that if he sprayed a cage full of males with female mating essence, the males attempted to copulate with the filter paper and with each other. The male secretion, "seducin", caused similarly bizarre behavior in the female roaches. Normally, Carlo explained, pouring another glass of beer, the female consumes the "seducin" from the body cavities of the male during the hour or two it takes for copulation. If

one cuts the nerve to the vulva of a female roach, however, so that she cannot feel the presence of the sperm packet in her vagina, she will mate repeatedly, unaware that she has already been fertilized, for the sheer joy of consuming the seducin.

The waiters brought plates of salad, Cajun rice, blackened fish, and spiced, spiny lobster.

I looked at the pale, bruised tomato in my salad.

De Witt leaned over into our booth and offered the unwelcome information that the lobster wasn't really a crustacean, it was an ancient, watery offshoot of the insect family.

I practically rolled out of the booth and struggled to the bathroom. Only a moment to check that it was not occupied before the full nausea hit. The rough cement tore my stockings when I knelt down; tried to keep my eyes fixed on the litter of paper on the floor and the small green jar of ant poison in the corner and not on the pink, chipped toilet seat. In a few minutes I stood up and opened the small window to the back alley. Through the window came a puff of night air, damp asphalt and ginger blossoms. Better. Washed my face when the water had brought up the coolness from underground.

"Libby, are you all right?" Todd was outside the door.

He had paid our part of the check and brought my purse and briefcase.

We went out the back entrance and around to a side street.

He had called a cab.

Back in my room, Todd dipped a wash cloth in the pitcher of ice water and wrung it out.

"That's drinking water," I protested. He said the tap water was too hot, we'd get more, pressing the cool cloth to my forehead and running it down my forearms, washing my hands.

"I'm so worried about you," he said.

"It's temporary." I said.

"If Baton Rouge affects you like this, I guess you wouldn't have liked the Amazon."

"I'm not delicate, just morning sick."

I tried to tell him it was normal. I asked him to find my medicine in my overnight bag. Nancy had provided me with some super morning sickness pills--courtesy of the bio lab women. Todd called room service for more water.

The thing is, I remember him saying, everyone would be sympathetic if they knew you were just pregnant. They'd be happy, in fact. But now everyone is wondering what's wrong with you.

This remark rang sour, but I didn't have the spunk to reply. When the water came, I took one of Nancy's pills and after a while felt a little better.

"I have to go back to my room for a few minutes;" Todd said, "let me take the key and I'll let myself back in. You sleep."

"Can't you just stay?"

"I promised I'd call Jake."

"Do you talk to Janice when you call?"

"Sometimes. I'll be right back."

* * * *

I spent the next two days of the conference in bed.

The magic pills made me feel better, but not much. Todd came over between sessions to bring me 7-up and cold milk and lots of ice water. Even with the air conditioner on full blast the room was sweltering.

In between naps and spells of nausea and splashing in a sink of cold water, I contemplated the evolutionary significance of morning sickness.

Perhaps morning sickness was advantageous to reproduction because in societies where women did most of the heavy work, they would be actually forced to take it easy during the first, critical months of pregnancy. On the other hand, were migratory tribes accustomed to leaving their pregnant women behind? Alone and sick? It was a scary thought, so I slept some more and then read fiction: Love in the Ruins. That day melted into the next.

When he came back at three o'clock the next afternoon, Todd said he was skipping the last few sessions.

He offered to give me an all-over sponge bath with ice water. That sounded good.

"I have to get suited up for this," he said, taking off his clothes.

He asked me if I was planning on getting up for dinner.

I didn't think so.

"I guess you've been lying here all this time wondering how to tell the world you're going to have a baby." He brought a hand towel soaked in cool water and began smoothing it over my shoulders and breasts.

"It crossed my consciousness. By the way, how did De Witt do?"

"He did fine with his own stuff. I don't want you to worry about this now--but he scarcely mentioned the spinster ants," Todd said.

"Bloody deed." This was awful, but who could expect anything else? De Witt wouldn't share air time if he didn't have to.

"It was awkward all around. The flu sounded so lame. I wish I could have just said you were pregnant." He ran the cool cloth over my thighs down my calves, cooled my feet.

"The reason you felt awkward is because everyone knew you were lying. We're just a global back fence around here. Everyone knows what anyone knows."

He shrugged, rinsed the cloth and soaked it in ice water again.

He crept into bed beside me and kicked the covers further back.

"I just want to be close to you. Screw what other people think. How about baby? Is baby hot?"

I nodded, and he began stroking my stomach.

"You'll be branded a bigamist." I fretted.

"You'll swear we've always been Latter Day Saints." Todd joked.

"Sick or not, this is one I can put off." I said.

"It's your decision."

This was a direct reference to my making my mind up about the baby--without discussing the issue with him. I remembered the look in his eyes that day in Strawberry Canyon as we watched the bee hive freeze in the approaching darkness. He hadn't ever brought it up again. But he hadn't forgotten.

Still, I kept asking myself honestly, could he have convinced me not to have an abortion if I wanted one? Could he have convinced me to have an abortion against my will? Finally, who would probably bear most of the burden of our baby? Married to Janice, not married to Janice and not married to me, married to me. It was all the same. He could choose to support and love a child, or choose not to. In any case, the end responsibility rested with me.

"What about you--were you planning to announce the father-- or is this supposed to be a virgin birth?" I said.

He was silent. He ran the cloth under the small of my back. That felt good, too.

"Um?"

"I'm working on that," he said.

What I see, looking back, was that I kept believing, even with the clear evidence of Todd's ambivalence, that he would start moving in the direction of divorce, or something to ease the situation. And that would have been sweet of him--but it would have been unnatural in the Darwinian sense. I was considerably more desirable as a mate if I might get pregnant. Once pregnant, his instinctual, evolutionary job was accomplished. It was only the altruism of human love that kept him around at all.

Nausea.

Todd shifted his weight in the bed. "But I have a stake here. Let me know before you go public so I can warn Janice."

I gathered that he had been talking to her frequently.

"What have you been telling her so far?"

"I've been trying to get her to see the wisdom of a friendly divorce--one where I can see Jake as much as possible. I think my chances of keeping this civilized are better if she doesn't know I've got another child on the way."

Ten beats.

He added: "She's already much more reluctant to talk about divorce since I told her I was in love with you."

Rule Two in the Irony of Love: A love object is always more desirable if someone else wants it, too. Janice would have been content to stay away forever if she could be certain that Todd was alone and suffering. With another woman on the scene, why not take a little time to be sure she might not want him back?

"But you think she'll do it, eventually?"

"I guess so. But not right now. I don't think I can get this resolved in time for us to get married--for the baby to have a legal father."

This almost sounded like a backhanded proposal, but the whole situation was so loaded that it seemed useless to mention to Todd that the problem was considerably more complicated than not having a person to name as the father of this baby.

Things were starting to get difficult all over. It was perfectly fine for the wife of a prominent professor to come along on a conference and have a visible case of morning sickness. All of the attendees would be interested briefly, express good wishes, and move on to discussions of cockroach secretions and insect nutrition. Quite another thing to have a woman, up for tenure, scheduled to speak, in bed with morning sickness all the time.

The common response would be, well, they can't possibly hold that against you. Of course not, not officially. Not in a perfect world. But evolution shows that even the slightest disadvantage can interfere with survival. The more competitive

the situation, the more devastating even a seemingly insignificant handicap. Between two candidates, evenly matched in all other respects, the one who isn't throwing up all the time will win out.

And if I had to raise my child alone, a secure job was even more important.

"I just love you," he said.

I knew that. What I didn't know was what it meant. Even if Todd would willingly break with Janice, which he didn't seem to be hastening to do, he would not want to be estranged from Jake. Any move on my part that threatened to lose his son for him would fail, sooner or later. The thing about love in the Moon Instar was that all of our best motives were at cross-purposes, tangled.

We slept as close together as the heat would allow that night, but we did not have intercourse.

The next morning I dressed carefully in the red sundress Nancy had packed at the last minute, topped it with a white jacket, squeezed on my heels, and made an appearance.

* * * *

Outside the breakfast hall, I pulled Todd aside.

"Can you get me a tape of De Witt's presentation yesterday?"

He nodded. "I think so. Are you ready for him?"

"Absolutely."

De Witt must have been lying in wait because he pounced on us the minute we entered the room.

"We've all been so worried about you, Libby. Good to see you among the living. Missed you at the Cotton Club."

"I heard. And I'm so sorry to leave you to do our session all alone. Thank you for covering my half."

"Think nothing of it."

"Perhaps I won't," I said, but softly, so he wouldn't hear me as he turned to get his scrambled eggs.

Todd was getting juice at the next table.

De Witt gave him a hostile I-bet-you've-been-fucking-all-night look and went on to the coffee area.

"I thought you'd chastise him." Todd said when we were finally alone at a small table in a magnolia-shaded corner of a courtyard adjoining the dining room.

"All we have to do is show the tape to Waldheimer and Pardee. They'll do it."

Later in the day though, I got some surprising information that persuaded me to reconsider.

At the lunch break, Todd was scheduled to have a meeting with the Insect Ecology people. I'd made plans to see Malcolm Evanson.

Malcolm and I took a cab down to a small, elegant French restaurant by the Mississippi. You could see the river sliding

by, almost taste the heavy air that must have hovered over the place when it was a plantation outpost.

He ordered wine. I had water.

He didn't waste any time.

"So you're pregnant with Todd's child."

I blanched.

"Dear Libby. Don't be surprised. I know you more intimately than he does, not physically....the mud of Africa."

He smiled. That was so like him.

"It was a mistake, but I want to have the baby."

"I'd imagine you would. Children are a great joy. I've done everything I can to preserve my relationship with my children."

He wasn't bitter, and he had done almost "everything"--everything but lie about his homosexuality. He'd left his position at Berkeley to take a job with a heavy teaching load at the University of Minnesota. He was away from San Francisco, and supposedly away from temptation, though I didn't see that as necessarily so; still, his wife agreed to have him back. His career was stalled.

"What do you suppose I should do?" I asked.

"I'm sorry, can't imagine. But there are a couple of things I want you to remember."

Trust Malcolm.

He was a true mentor--even at a distance.

"First, I can't do as much from Minnesota as I could at Berkeley, but I'm not asking for many favors now either. If you get in job trouble, let me know."

I nodded. "Hope it doesn't come to that."

"It might. Next, if Allan De Witt is causing you trouble, I can help there, maybe."

"How is this?"

"We were lovers, years ago." Malcolm said.

How dumb could I be? "Did you get him on the Atta Project?"

He gave me a look that asked for forgiveness.

"No, no Libby. He waited until after I left and then got himself appointed. Sylvester was in on it. I didn't know about it at the time. But we have been friends."

He gave me a few moments to absorb this. We ate in silence. I suddenly had a strong appetite.

"So, herr doctor, what does De Witt want?" I said.

He answered me obliquely.

"De Witt is not particularly fond of women as women, but he respects you as a good scientist. As long as you give him room, you'll have a career at Berkeley. He's of an opportunistic species, a mover, an empire builder, a coalition maker. He will probably have to build empires at a couple of universities to be properly appreciated. But he has to build the first one."

That told me about his career trajectory. "So what does he want?" I prompted.

Malcolm smiled. "I guess he's just like the rest of us, Libby, he wants to figure out how to live in the world as a sexual outcast. No place for him."

"I have sympathy with that."

"You will do fine," Malcolm said, "if you remember the things you have in common are greater than the differences."

"Hard to believe right now. I guess you heard his talk?"

"You'll get another chance, I hope. You would have been a curiosity in any case; no one would have been there to hear about the Spinster Ants--they would have come to see the Spinster Ice Queen in love."

"It's a dilemma," I said.

"Not necessarily. But frankly I'm surprised. All the time you were my assistant, you were a vestal virgin, or so we thought. Hardly even the occasional Assistant Professor. It was unnatural. I'm not sure what this present situation bespeaks."

I explained about the dragonflies and the Moon Instar.

"Then I'm in my Fourth Instar," Malcolm sighed.

"Meaning?"

"I think it's the time of life when you content yourself with what's left of the breakage...."

He described the arrangement he had reached with his family. He lived at home. His wife knew he was gay. He had a steady lover on the side for awhile, but the lover had moved away. His

children didn't know he was gay. He would tell them later. He loved them very much and cared deeply for his wife.

He concluded: "At some point I decided that all the rules about gender roles, sexuality, what the world says we should feel, how we should arrange our families, truth, and respectable lies might have to be abandoned to keep what we love."

I agreed. "It's been hard for you."

"It's hard for everyone. Your situation...."

Malcolm poured another glass of wine and continued. "De Witt tells me he's going through a small crisis now. He has a new partner."

"At Berkeley? Are you sure?" If we hadn't heard about it, how could it be going on?

"Of course I'm sure. Do you know Lee Chiang?"

* * * *

Todd and I screened the tape when we got home. There was one very bizarre section. De Witt was lecturing in his usual, careful way, following his notes. Then for some reason, he decided to launch off into an unaccustomed showmanship--visual aids and all.

He had the waiters wheel in a table with three large glass jars--ant colonies.

De Witt picked up one of the glass jars and displayed it to the audience like a magician showing an empty hat. Then, after a pseudo-dramatic pause, he shook it gently and then described as the ants began to dig with excited movements, fighting blindly against, as he put it, "the unknown potentate shaking the glass orb of their known world."

Then, accompanied by more vaudeville stuff, he picked up the second jar and shook it. The ants responded more slowly, he pointed out; some ants finally started blocking tunnels and digging new air shafts after a period of several seconds. It was impossible to see this on the tape; the audience must have taken his word for it.

He shook the third jar. The ants in this jar responded with indecision, De Witt maintained; most of them simply planted their six legs in the shifting earth and began an elaborate procedure of self grooming--combing their antennae, cleaning their mandibles.

"What the hell was he up to there?" Todd asked me.

"Playing to the cameras?" I said. This was something else.

"I have divided these three jars of ants carefully," De Witt's voice continued. "Over a period of time I've been segregating the elite members of the colony from the average workers. The first jar contains the naturally elite. These ants have an immediate effect on their nestmates whenever a job needs to be done or danger threatens. The elite ants have a

consistently higher metabolic rate, they will starve to death faster, they will dry out faster in heat and light, and I can poison them faster with chloroform or ether fumes.

"The second jar is relatively unimportant. It contains what I call the secondary elite. As you saw, this group wasn't elite to begin with. But, in the absence of stronger leadership, they rose to the occasion. They take a long time to respond and they don't do a very thorough job.

"The third jar, the one with such strange and unreasonable alarm behavior--immobilization and self-grooming--is comprised of the followers. They were left over from repeated segregations. The followers will rouse themselves to activity if they are in the presence of superior organizational ability--the presence of the naturally elite. In the presence of the secondary elite--and this is significant--they respond slowly and even tend to be a retardant force: they merely get in the way of the real work going on.

"Thus, without a naturally elite leadership the followers are incapable of any kind of effective response to danger. They are paralyzed; they sit about self grooming; they must imagine the trouble is all in their heads, perhaps."

Todd shifted impatiently in his chair. "This isn't any better the second time."

"There's a message here. Maybe this is why he's always alarming the nurse ants, disturbing them with his glass probe all the time."

The tape ran on.

"The real elite is the class, then, that spurs group effort. They are the 'activity starters.' They assume the burden of a high level of activity throughout their lives, and they stir the rest of the nest to constructive production.

"This leads us to the question of the role of elites in a successful nest," De Witt began his conclusion. "Does the percentage of elites influence the splitting of colonies, provide a reason for them to divide? From my research, one inference is paramount. The larger the colony, the fewer natural elite are produced. For reasons we can only guess at: fewer workers assume the elite role in crowded conditions. As a colony--or any superorganism--grows in size, there is a real point at which the lack of leadership becomes acute. If the colony didn't split, it would be obliterated anyway because the messages from the few remaining leaders would be too weak to allow the colony to function at all."

The tape ended.

I was torn between being irate at being left out and being grateful I wasn't associated with it.

"I wonder if he thinks the elites are the key to reproduction?" Todd said.

"That may be--it's an interesting theory. But it isn't what we've been researching at all, at all."

Chapter 10

THE ARMY ON THE MARCH

On summer days the air is in motion like random memory. The bay can take on the color of blue bottle-glass, and the surface of the water is faceted with a million silver arrowheads.

On days like that, I am plunged again into those first weeks of that summer when I was pregnant with the child that was to become Lorna.

In early July, the days were warm and sunny, the bay swept with chipped facets. The air haunted with the smell of star jasmine. The bells of the Campanile floating across the hills. The cosmos flowers in the garden infused with the deepest lavender.

We greeted the morning root beer bees. I would walk Todd down to the lab. He had a room in one of the adjoining buildings where the Brazil team was working. The members had been finalized: Doug Huang, Patrick Moran, and Rhoda Wheeler. Patrick was always hard at work, his freckled face intent on the arrangement of equipment, documentation of supplies. Doug would be there, too, shooting the breeze and clowning around, his round face shining with anticipation. I rarely saw Rhoda--except when

she breezed in late--clad in another fetching safari outfit. I once suggested to Todd that he might tell her she could only take a duffel bag anyway--but he shrugged. The field, he said, was always a learning experience. You couldn't tell anyone what it was really like ahead of time. Everything for the expedition was falling nicely into place, and Todd was very optimistic.

After visiting with the Atta for a couple of hours, I would take a long walk, perhaps to the Blind School Hill, rest a while, feeling the way the baby grew, noting the suggestive swellings and subtle movements, come home and garden a bit, nap, work on my paper. In this way, the days were full and felt complete.

After Malcolm in Baton Rouge, no one commented on my pregnancy. It was a case of non-disclosure. One day when I was just getting up the nerve to tell about it, everyone important seemed to know already. I had revealed the situation to my mother gently, more or less as I had come to know what I intended to do. She was not happy about the situation, but she was all ready to welcome a child. My sister declared me mad and offered me child-raising equipment. I assumed everyone at work knew--they acted as if they did; they did not ask questions. I told Nancy I thought it was going to be a non-disclosure, non-event. She said it wasn't over and that anyone who wanted to use it against me still had plenty of time. Not with a bang but a whimper.

The morning sickness had ended as suddenly as it had begun. My summer clothes still fit. The child felt like a secret baby. A secret thing that changed the meaning of life in some way I did not understand. It made me hyper-aware of the sensory things-- the feel of clean linen, the petal of a flower. I was very happy.

On the days Todd stayed at school late, Nancy and Melissa would come by. Nancy and I would drink sun tea on the back porch, and Melissa would play make-believe in the garden.

Sometimes we talked about "life without Keith" and sometimes "life with Todd" or "life without Todd." Nancy was encouraged by Todd's show of solidarity, but she kept urging me to make contingency plans.

"What exactly has he agreed to? What have you agreed to?" She asked one afternoon.

"He finally told her I was pregnant."

"And?" Nancy said. She tossed some cookie crumbs to a big Jay that had landed on the deck railing.

"From what he says, that set her in cement even worse. No divorce. But we are planning on getting married, eventually."

"I'm going to believe that when it happens. But even if it doesn't Libby, the problem never was keeping up your work without a husband. The real problem is keeping up with your work and your baby. So what is he going to do about you in the meantime?" She asked.

"Nothing, I guess. He's leaving, I'm staying and having the baby. That's it." When it came to the future, I had a failure of the imagination. Moon Instaritis.

"I know it sounds crass, but you ought to pin him down, financial support, stuff like that." Several Jays had come to the deck; their blue-black wings made cool sweeps in the hot, late afternoon air.

"Yes."

"On the other hand," Nancy continued, tossing some cookies down to Melissa so she could feed the birds, too, "it's good that Todd is going. If he isn't going to help, then you need to help yourself. It kills me to say it--but that means doing what you said before--working harder."

"If I don't finish the paper, I can put off the tenure review." I said.

"I wouldn't. That better be your first priority," she said. "you've got lots of competition coming up behind you. The tricky thing about being pregnant," she said "is that when your body demands what it needs to protect the baby, it's not just calcium, it's peace and rest and luxury. You get involved in the tactile moment--but everyone around you is still clawing their way to whatever the top is."

Too true. It was harder and harder to work up that teeth-clenched, driving spirit that had characterized my Second Instar. Walking and gardening and communing with my secret baby

seemed like perfect activities to be engaged in. Let them succeed, let them all succeed. I was content with puttering, the baby, and Todd.

Nancy said: "The reason why they call it competition is because someone wins and someone loses."

Nancy had lost, in similar circumstances, so I could only ignore her at my peril. The year that she had been under consideration for a full-time, tenure track job in Biology, Melissa, only two, had gotten chicken pox. Nancy decided to wait for the next job opening and teach one more year part time. The next time a job opened up, she found herself in line behind three younger, more prestigiously-published men. She'd missed a key move in her career. Keith was in his right place. She was in academic soup.

"If you don't believe me, go talk to your Margaret Huffaker," she said, "in fact, you should do that anyway."

Not my favorite thing to do--go hat-in-hand to Margaret--given the nature of our relationship then, but I would need her support more than ever on the tenure review committee.

Margaret and I might find common ground, I thought. Most of the time when people imagine themselves to be enemies there is good reason--real philosophical difference. But Margaret and I weren't at philosophic or scientific odds--we had just been too wary for too many years about one another's personal style to be

friends. That little lapse didn't threaten her well being, but it might threaten mine.

Time to cut a gate.

"Margaret won't be back from vacation until the first week of school," I said.

"That will give you time to get something together to show her," Nancy said.

Yet, in the day-to-day, things kept sliding. A matter of attitude.

Looking back now, it's easy to see that. I excused myself from controversy at the formicary. De Witt's speech in Baton Rouge did not make for a happy bunch back at the Oxford Research Tract. Todd brought the tape of the proceedings to school and played it for Waldheimer and Pardee. They complained and asked me to talk to Sylvester. I kept putting it off, long enough that other, more pressing events overtook us.

I also retreated from the mumbo jumbo about the proposed lab relocation. Even when the list of troubles started piling up. The new ant colonies from South America appeared to be lost in transit somewhere--maybe Florida.

Even though they are only ants, they are very valuable. I hated to think of them dying, trapped in a box in an airport warehouse. But....

I let De Witt take charge. I figured he'd be fine dealing with the logistics. With regard to the lost ants, the customs

officers were suspicious of the cargo from the beginning. The government's attitude was that America had enough pests around without importing more. When he finally located the paperwork for the Atta colonies, we knew something was amiss. The records showed that the ant shipment had already come through Miami and had been forwarded by mistake somewhere else--or maybe two colleges had ordered colonies. Also, the species name was wrong on the delivery order. Or so we assumed.

In any case, our ants were lost. Maybe they were in Colorado, we were told. That meant that Federal Express somewhere in the midst of Colorado had 500,000 ants extra.

It also meant that we did not push forward on a date for moving into the Cyclotron Road building in Strawberry. De Witt insisted that we should time the move with the arrival of the new ants. It was the most efficient, a way to save money and time. I was uneasy about this, but not properly alarmed.

Certainly not as worried as I should have been, because delaying the moving date put all of my research in danger. Our Atta sexdens colony in Nest #1 was maturing quickly and the sexual forms--males and virgin queens--were moving closer and closer to mating flights. It was possible to transport the colonies before they mated. Or much later. But we wouldn't want them flying while we were trying to relocate.

We had to accommodate their life cycle. They would mate when their internal cue told them to. The mating period was

crucial to my studies. I needed to know if the "old" Spinster Queens left the nest, if they participated in colony founding, if the new queens ever took helpers.

In the germination stage, too, the colonies were at risk. The new, young queen gathers the sperm to fertilize her lifetime of eggs in the mating flight. After insemination, she burrows into the ground and begins the difficult task of "founding" a new colony. For safety, she seals the entrance to the nest. Then she lays a few eggs and begins to tend them. Because the nest is sealed, she cannot get food, so she actually subsumes her wing muscles and uses that as a source of nutrition for herself and her brood during the early weeks. Only when the first eggs have gone through the larval and pupal instar stages and are adults is the nest opened and foraging begun. By this time, the queen is distended with eggs and unable to move from the burrow. Many new colonies do not survive. We didn't want to move the nests during this phase.

Besides, all of this had to be observed in a stable, controlled environment. My response to the threat of chaos was not to micro-manage the situation, as it should have been. Instead, I left the supervising to De Witt and the packing and heavy work to the graduate students. Todd spent most of his time over at the Brazil room. It was impossible to get any work done, so I stopped even staying at the lab very long.

Nancy called it the nesting instinct--and it was. Walking, gardening, talking to the baby, and doing little things to welcome Todd home.

As in our home. He'd already moved all of his things over when he gave up his apartment. Gradually, his objects began to move out of the hall closet and take up residence as joint tenants--his shower caddy in the bathroom, his espresso-maker in the kitchen.

The end of July was chilly for California. Todd would join me in bed in the late afternoon on days when the fog moved in early, and the cool, moist air would waft in the open windows and create a secret world of sea smells and garden musk, hush and the moans of foghorns. Some nights we'd cook together. Some nights he'd go back to the lab to finish up, and I'd write. Other nights, we'd find a movie or go to the bookstores and look at books about the Amazon. Or Todd would fetch Thai dinner and we'd not go out at all.

For me, that period was a revelation. All my adult life I had worried constantly about my career. That summer, it was hard to remember why. I kept saying to myself, so this is what having a steady mate is all about! So this is the joy of motherhood! I can't believe how much I've missed!

In the early years at Berkeley, during all the time I was buried in the bewilderment of the endless, gone-awry Second Instar, this was what all those other happy couples were

experiencing, the ones holding hands in restaurants, browsing together in the bookstores of a summer evening, shopping for mushrooms at the Co-op, waiting in line together for movies.

As the fog tumbled across the bay, Todd would hold me and we would talk about the future as if there would be one. We talked confidently in the future subjunctive. He felt the best thing was to let Janice make any decision that was to be made about a divorce. Let her make whatever adjustments, follow the steps her psychologist suggested. He felt sure that if a divorce were finally her idea, like it was supposed to have been in the first place when she left California, they could avoid a damaging fight over custody and visitation.

As soon as he and Janice got things worked out, Jake could spend summers with us. Todd pointed out that it shouldn't matter to us what a piece of paper said. He was Janice's husband in name, but he was dedicated to me and our child. This sounded both facile and like a 1940's movie; I was not entirely clear that all of this wasn't fancy talk for bigamy. After all, he was committed to Jake, too. But he did his best to reassure me in the foggy, foggy dew.

He didn't see any reason why he couldn't come home for the birth in January. Brazil was not the end of the world; planes went in and out every day. Maybe we could even meet in Rio for Christmas. He suggested I apply right away for parental leave from classes for spring semester. I could even postpone the

tenure business and instead visit the Amazon and see the Friendly Reds. He was so earnest and so hopeful I began to believe that all of it just might work.

And so passed valuable time. It wasn't until the fourth of August that De Witt got assurance that the missing ants were scheduled to arrive the following Monday. Now we had to really finish the job of packing up the insectary. Waldheimer promised me he would save dismantling the big nest for last--so we'd disturb the ants as little as possible. We planned to spend the weekend with the graduate students and a crew of workers transferring the huge colony into portable crates. All I could do was hope against hope that the colonies would delay mating a little longer.

The next day, on Friday, Todd came home with a long, cardboard tube--the kind you mail posters in.

"Wait 'til you see this," he said, looking around for a blank stretch of wall. There wasn't one, so he taped it up on the front of the bookcase in the library.

It was a photograph, grainy and creased at the edges. I could make out the leaves of bright, large tropical trees around the edges. The center was a dark swath with tiny bright spots. I moved closer.

"It's a picture of the Friendly Reds. Taken with an infrared camera!" Todd announced.

"Terrific."

"See, the light parts are the warmest, the leaves, the spiders on the web. It was taken from the air."

I examined the photo. It made more sense now that I knew what it was. Except for the forest border, it looked like a city viewed from an airplane at night. The bright points of little spider bodies formed an intricate grid across the black web. It was unearthly.

Todd glanced at me. "I won't leave it hanging up here. I'll take it to Jake."

"When...?"

"I thought I'd take a trip back to New Haven before I leave for the Amazon. There are some papers I need, and I want to see Jake, anyhow."

Lousy news. I only had a two weeks left with him, and he was going to spend part of it back east. Still, it made sense, and I didn't want to sound like a whining mistress.

"You'll miss the moving of the Atta?" I said.

"Yes, but I wouldn't be much help on that. And you'll be really busy too, so it works out fine. I'm leaving Tuesday."

Fine.

* * * *

That weekend, we prepared the ant sub-colonies for the move. They were boxed in special, temperature-control chambers, assured

of a food supply, handled with care. Thousands of delicate little beings. Everything was ready.

The phone rang on Monday morning at seven. Todd answered it in the kitchen. I could hear surprise in his greeting--De Witt never called me at home. A minute later he slammed into the bedroom.

"The ants are out." At first I thought it was my Atta in danger. As I threw on some clothes, Todd explained that it was the new ant shipment--delivered to Strawberry a day early, and the wrong species.

When we got to the basement lab on Cyclotron Road, De Witt was sitting on the one folding chair in the huge area. The place was empty but for the packing crate and a large, plastic trash can.

And the ants.

De Witt held his head in his hands, he looked up with a watery smile. His eyes were dark green.

The sight in front of him was awesome.

Circling around the trash can were the members of a colony of Eciton hamata, army ants. Someone else's army ants.

The ants formed a continuous, widening circle around the plastic barrel in the middle of the floor.

Todd and I moved a little closer--the march involved the complete colony: a queen, workers and soldiers, nurses and

larvae. Being used to the small size of the Atta, I was shocked by how big they were, almost three times as big. So real.

I had heard stories of the army ants marching around in circles, following the same trail over and over again, until the whole colony died. But that had only been in experimental conditions, in a formicary, with the ants trapped on every side, forced, more or less, to march over each other.

What appeared at first to be the majority of the Eciton ants were going around in circles. A few were wandering off to where someone, probably De Witt, had placed an unfinished sandwich just off the path of the ants in an attempt to lure them back to the packing case.

Then I noticed another large stream of ants had veered off and was threading its way past the packing case, up a nearby column, and into an air vent.

"I tried to get them to lay a scent trail back to the box," De Witt offered.

"Holy shit. How long?" Todd asked. I could see he was figuring how much of the colony had been lost. The number of dead ants indicated that they had been on the move for hours.

"The security guard says a truck arrived with the ants around noon yesterday. He brought the crate in because there was nothing else to do."

Todd said. "Well, let's get busy; we can save some of them."

De Witt shook his head.

"The ants down here aren't the problem," he said. He meant, of course, the ones that had gone upstairs.

Todd and I looked up the pillar into the air duct.

"What's up there?" I asked.

Todd shrugged. "We'll know soon enough."

Army ants move about three miles an hour, which meant they could have moved through all of the upstairs offices already. When I stared into the black and yellow swirl on the ground, it seemed they were moving much faster, plunging into the vortex of a dense, imaginary hole. I felt like I was being sucked into the cyclone center.

The ants continued to die. When one dropped, the next soldier in line forgot that the dead one was recently a member of the tribe. The soldier would pause to dismember his fellow with huge, black, sickle-shaped mandibles and tarsal claws. He would crush the dead sister or brother in his jaws and then move absently on. The next worker would see only rent pieces of food, fresh and ready for eating, and stop to devour the carcass. The following ant would crawl hurriedly over the diner and the corpse.

The dead that were not eaten formed in piles, black legs threading out at impossible angles. The workers locked their agile legs together and formed bridges over the debris. The acrobats, the Eciton acrobats.

The rest of the colony pressed on, speeding over the living bridges. I could see the ungainly queen, her huge abdomen extended with eggs, bumping along, surrounded by her retinue. She didn't know, either, that they were not going to find a safe place to camp with the brood, that the terrain they had been marching over was abysmally familiar, that the world for them had turned into a flat floor in the basement of a building dedicated to producing bombs, and in that world remaining, the dictates of their own instinct would be sufficient only to lure them into making a big, black doughnut of their colony.

It was probably useless to try to lure them back to the box. But what could we do with them?

I looked at De Witt. "Why don't you just start stepping on them?"

He looked stricken. "I would have. But I never realized before how it is to actually kill an ant colony--to crush them. Their life is so strange."

Todd was searching for something to deflect the ants that were streaming up to the air vent. Although hundreds of ants were dead, each minute there seemed to be as many as there were before. I moved gingerly to see what kind of damage to the packing box had started the trouble--to see if the flow could at least be slowed.

"I already checked it," De Witt said. He was right; where the paper was torn off, you could see one entire side of the

packing crate had rotted away--not only the wire mesh air holes but the wood, itself.

"I figure the box must have sustained some severe water damage--and then they just re-wrapped it and sent it on." De Witt said.

I tore away the paper from another side. It was the same. To stop their exodus, we'd have to board up the whole box tight. Suffocate the rest of them.

It was just a freak occurrence. Normally, shipping live insects is tricky under the best of conditions. Even with a guaranteed food supply the ants can get upset. And army ants go on the march every few weeks or so anyway, depending on their reproductive cycle. But these ants had run out of food weeks ago.

"O.K., Pandora, what next?" Todd said to De Witt. "This is a holy mess."

"Well we can feed the ones that are still here." I pointed out, watching the ants still tumbling out of the packing box in hairy bundles.

In the wild this infantry might be formidable. They could, when they were on the march, strip a dead or dying jaguar bare in a few hours. Once on the move, the habit of the army ants is to eat through anything in their path. Nothing stops them--the workers even form elaborate body-bridges over streams and gullies. But most creatures can run away.

"Steak. Or fried chicken." Todd said.

So there we were in the middle of Berkeley, in the middle of an innocent summer, in a gigantic basement, surrounded by a ravenous swarm of army ants--one group grimly marching over the bodies of their own in endless circles on the cement floor, the other pushing steadily skyward in the search for food.

Todd tried once more to block off the air duct without success. Then he went to phone Waldhiemer down at the Oxford lab to bring up food for the ants, insecticide for the escapees, plastic boxes for the survivors.

Many more ants were dying. I felt mesmerized by the pulse and swirl of their push nowhere. The minims, small, pale half-caste workers, were the second-favorite food, after the larvae. The pieces of abandoned soldiers made a shiny, hairy carpet. And the ones that were still going were unaware, despite the bodies beneath them, that they marked the same ground over and over, that they had been following the scent trail they themselves had laid down the previous time around.

I tried to imagine myself in their place, blind, lost in a strange, smooth place, following a path by smell. Tried to imagine that the path was trod and bumpy with groups of other humans, dead now, their rotting bodies piling up in confusing, mountainous obstacles. Tried to imagine being able to smell the bodies but not see them. A condensed history of the species.

De Witt announced that he was going upstairs to see if the army ants had emerged up there.

I went back to contemplating the ants.

It wasn't that they were beastly creatures that didn't care. Ants--even the army ants of South America--or their cousins the driver ants of Africa (who can devour an elephant in no time)--care demonstrably for their own. Ants are very considerate creatures. The higher species nurse and protect their old; the workers carry the queen gently from one bivouac to the next; the army ants make strong bridges across what are to them yawning canyons and sustain the loss of hardly an ant life.

Perhaps their regard for each other is only instinct, the instinct for community survival, for the superorganism. But even so, the members of the colony have special importance to each other. As long as they remember and can recognize each other. As soon as they get tired or hungry or distracted, though, they seem to forget they are related. It's funny.

What this community's survival instinct didn't count on, evidently, was a trip to the U.S., weeks of imprisonment and starvation, and escape onto a smooth floor without landmarks in an alien land.

In the field, in the jungle, there would be almost no chance that a colony leader would double back on his own rear guard. And, if it should happen, there would be the even greater chance that a stray member would wander off in a flanking direction,

setting up a new trail (like the one to the air vent). But the basement floor, and the trash can with the tantalizing scent of vanished food, was a speedway with no landmarks and no exits.

The scent trail was all the ants had to go by. They had followed it to the best of their determined ability. In affirmation, I watched one of the workers pause to devour a succulent baby larva that still clung hopefully to the breast of a dead nurse ant. Then the worker went blindly after the trail again.

The trail of the ants began to look like a miniature battlefield--like some ancient Greek drawing of a war.

* * * *

Todd came back with De Witt, the security guard, and the elusive Lee Chiang (the selfsame one from the memos, the one Malcolm said was De Witt's partner) in tow.

They were accompanied by three campus police.

The police persons, two men and one woman, made a thorough reconnaissance of the basement before saying anything or asking anyone questions.

The security guard, whose name was Bob as his badge advertised, was asked to tell his story, officially.

The first policeman started to hassle Bob the security guard about letting in an unauthorized shipment in a "sensitive" area.

Chiang stepped in to deflect the talk of restricted area. He was a soft-spoken, slender man, with a large, shiny forehead. He was calm and seemed almost amused. He explained that the army ants had greatly disturbed the staff and scientists upon their (the staff's) arrival on the second floor for work on Monday morning. The air shaft out of the basement led fairly directly, it seemed, into the employee lunch room.

Even though Chiang was smooth and assured the police that nothing irregular had happened, I surmised from the drift of the talk that there was bound to be more agitation later on. Chiang said the employees were upset at the "size" of the ants-- but they hadn't guessed what kind they were.

The woman suggested we immediately call the city pest and disease control center. They would tent the entire building and exasperate [sic] the problem.

Todd said he hoped that wouldn't be necessary. (If the cement walls of the basement were permeated with pesticide, we wouldn't be able to move in for weeks. Precisely what would kill the unwanted ants upstairs would keep on killing our Atta downstairs.)

De Witt promised that this was a one-time accident. We'd send some people to clean up right away. He offered to spray the area of the lunchroom and adjoining offices to make sure there were no remnants of the ants.

I realized this was the first time I had ever heard De Witt apologize.

The other policeman pointed out that the employees could not be expected to have to work in toxic conditions. He recommended against fumigating the lunch room.

"You're saying that enough poison to do the whole building is all right, just doing the lunch room is not?" Todd was getting impatient with all this. I wondered if he was going to lose his temper over it.

As we all stood around in the big, empty basement, at a respectful distance from the circling ants, the men's voices echoing hard off the great cement slab walls, my heart began to sink. It's times like this--when everything seems so unreal that it can't be happening--that produce lasting consequences. The scene was so unlikely, the narrow strip of bright, morning light streaming in from the entryway windows, then terminating abruptly as it met the dim, artificial light from the interior, the dying ants, the single trash can, the one folding chair, the polite Dr. Chiang--in fact everyone being elaborately polite and speaking in television-tragedy-ese--De Witt looking apologetic, Todd with a two-day growth, me in a muu-muu and sandals. Well.

The consequences:

The lost ants. A few ants here or there, no sweat. But the entire colony is different. It's a being.

The expense. And the difficulty of asking for so much more money to cover such a weird mistake--in writing.

Our lease here. Any lunch room could suffer an incursion of ants--albeit not such large ones. What Chiang's colleagues would object to in the end would be the permanent presence of ants in the basement. This was probably the first time the people upstairs had been aware of who, exactly, their new tenants were. (Personally, I found it slightly objectionable to work beneath an organization whose prime function was to supply the world's war machine. But that was only moral pollution.)

The fact was, if this accident hadn't happened, no one would have ever cared what we were doing in the basement. We could be raising zombies or something. Once the ants invaded the lunchroom, our activities were at issue.

And might remain at issue interminably. University administrations are good at many things; settling inter-departmental disputes is not one of them.

My Spinster Project: Our Oxford Tract lab was all packed up with no place to go, and might not have any place to go for months. A simple accident that could delay my tenure appointment for years.

The discussion continued about what to do with the ants upstairs.

Todd said he could understand everyone's objection to a chemical solution. (You see what I mean by television-

tragedy-ese: Todd, even, was already sucked into that euphemistic jargon--bug spray had become a "chemical solution.") He went on to explain to the police that without a viable colony, the ants would quickly die. Todd promised that all the ants would be gone in a matter of hours. The people in the offices could wait a few days and then sweep out whatever ants remained. Without a queen and without food, the ants would certainly not be able to start up a new colonial life in the offices of the nuclear scientists or their staff.

Todd's conciliatory words sounded fine. But that's just what they were--nice words. Our ant research showed that lots of female ants were potential queens. A reasonable chance existed that the army ants were similar. If any one of the spinster queens had gone off with the crowd that invaded the lunch room, she could begin laying fertile eggs as soon as she was out of the sphere of the dominant queen. Todd was probably correct that the ants weren't likely to survive in an office building; however, insects have been known to carve out fantastic ecological niches. Maybe the reason we don't have army ants in high rises is because they've never been admitted. (Ants thrive on cruise ships.)

The nice words served their purpose, nevertheless.

We were left to fill out an Unusual Occurrence Report.

The policeman began with the short questions and then proceeded to the description. "What kind of creatures are

these?" He said this as though they weren't ants at all but some kind of undocumented alien non-life form.

Todd answered, but he was still irritated. I guessed he felt that "those kind of creatures" are always just beneath us--we chose not to notice. We build marble floors and install pile carpet to distance ourselves from the life beneath us--in fact, all around us.

The police gave him a steady look and went on to the next question. "What action was taken?"

The Bob security guard--in a helpful way--suggested that we just sterilize the lab itself. Not the lunch room, not the whole building, the lab, he said, as if surprised no one had thought of it. Kill anything for a long time.

I said the lab was intended for insects.

He gave me a funny look. It was the first time he had truly realized that the ants might be here on purpose.

The report filing went on and on. More ants died; the black doughnut ringing the trash can seemed to be barely moving. The troupe on the way to the lunch room was still going strong, though. Waldheimer arrived with some steak and traps and chemical lures and set about stopping the heavenward migration.

What was clear, as the last ant died and the sun set on Monday afternoon, was that the invasion of the army ants would have many consequences. In fact, we might never be welcome in the Strawberry Canyon complex.

Back at the Oxford Tract, in a few days, the young queens and males back in the packing boxes would stage their mating flights--with nowhere to fly and no place to land.

* * * *

We spent the rest of the day physically cleaning up the army ant disaster. It took much longer to clean up the human consequences. When we were finally home, and assessing the damage, I brought up the subject of Todd's trip east. He was just coming out of the shower.

"I wish you would stay here this week," I said.

Since we weren't going to be able to move the formicary, and the Atta were still in their temporary boxes, there wasn't much he could do here, but the moral support would have been welcome. a visit.

"I'm sorry, Libby, but it's only a week."

"But then you'll be gone again, so soon, and things are so upset with the labs." His shoulders were outlined against the mirror.

"Well, make sure Doug and Rhoda get cracking, then I'll be able to spend a little time with you...."

It was awful to hear the whine in my own voice: "According to my calculations, that puts me a distant third on your agenda?"

He came into the bedroom and took my face between his hands. "Libby, I don't know about love in the modern world. But according to my calculations, that's where I stand with you, too. In some ways we met at the wrong time--both of us already had lives in progress, you know, history, responsibility."

"You can change your priorities."

"Not so easily. Even you. In the long run, your child and your work will always come before me. I'm sorry, I'll be back soon. I'm very sorry."

As soon as Todd left the next morning, I called Nancy.

"Is he right?"

"You can do the math yourself," she said.

"I feel so lonely. What can I do?"

"Go home to mom," she said.

Chapter 11

ZOO

I took my griefs, monsters the size of African wild animals, and packed them off to where they belonged--the nice, suburban zoo where I keep the rest of my griefs and sports of nature: my old bedroom at my parents' home in Burbank.

Some of them still pace in the shadows, ravenous for blood, crafty, escape-minded. Others hunker down in the darkness, study their paws in the moonlight. Their eyes glow yellow with memories. Some are little, odd regrets, like the tiny woe hatched when I was just eighteen and discovered that I liked fried eggs, a dish I had detested in childhood. Another creature fashioned from the pieces of juvenile inviolability--remnants of the First Instar.

In the light, of course, my girlhood bedroom looked very much like other bedrooms in homes where the children have grown and gone and return in a blue moon. The furniture was the same--twin beds, dresser, desk and chair. The room had new blue and white nautical-striped bedspreads; bright, new, guest room wallpaper--blue anchors; shutters instead of frilly curtains. The closets held bulky leather golf bags and fishing gear. The

only personal things of mine were at the far end of the big closet: a garment bag with my old "formal" dresses--the dress from the Junior Prom, the black dress I wore with the cloud chamber boy, the baby-blue bridesmaid's dress from Anne's wedding--and my lavender-butterfly quilt. Also in the closet was the port-a-crib for Anne's babies--soon to be Lorna's.

In certain other places, it was still my room. My high school books in the shelves under the window-seat, my old charm bracelets in the musical jewelry box on the dresser, my old diaries in the nightstand drawer.

On that evening I arrived home from Berkeley, pining for Todd, upset about the ants, the hot, August heat permeated everything, even the walls were warm to the touch. A Southern California, San Fernando Valley heat. My mother and I sat companionably on the twin beds and drank iced tea--just like the old days when we would talk about high school times, Anne's dates, and my hoped-for ones, classes and clothes.

It was pleasant to sit with my mother like that. I told myself I ought to do it more often. When I had better news.

We talked about she and dad were up to, about Anne, about grandma when she was alive, and about the baby to come.

Her face was flushed in the heat. She had a tan from helping Anne plant a garden in the back yard at the new house. Beneath the tan and the rose, her face was shattered with fine white wrinkles. She sat cross-legged on the bed.

Her hands, too, were tanned, and she held on to her tea glass as a bird holds onto a fence. She was up on all the little details about Anne's children, the cousins, Aunt Caroline and Punky.

There was nothing to say about Todd, so I didn't. I wanted to protect her from that. To protect me.

"I have a feeling, I told your father so." She said.

"Over the phone, you knew?" I laughed.

She was hurt.

"So how did you?"

"Never mind. Now that I see you, I'm sure it's a girl."

"Maybe she'll be born on grandma's birthday."

My mother smiled. Although she was not the kind who had made a big push to be a grandmother, she had slipped into a second motherhood taking care of Anne's children after the divorce. She liked that.

"Do you think we'll survive?" I asked.

My father's voice wafted in from the patio. "You ladies should come out here. It's actually cool. There's a breeze."

Mother got up, gave me a hug, took my glass and headed for the kitchen. "In a little while Forrest. We're having girl talk." She stopped to visit with him.

Even with all the lights on, alone in my old bedroom, I could feel the shadows alive. There was this restlessness, just at the edge of reality.

She returned still smiling, but her cheekbones had a dull flush.

"Your father...." She absently straightened the bedspread. "Did I understand you to say Todd is married?"

Of course my father would want to know if Todd were going to make an "honest woman" of me. I tried to put together, mentally, a version of my predicament that left the question open. But the pause was too long. Her eyes told me so. I wanted to protect her, but I could not lie to her.

"He's still married."

"Oh. But the two of you?"

I went over to her bed and sat with her. "There's just nothing to soften it. He's married and separated--and I don't know what will happen with us. I really wanted to have the child."

"I'm just glad I don't have to be a young woman again in your world. Women are making it hard on themselves."

From her point of view, it must have seemed that way. Still, who had been "hard" on whom? In Anne's case, even continuing in a stale marriage would have been easier, but her husband had asked for the divorce. There might have been an outside chance that Anne could have chosen to put up with his wanderings for a while. But how long and what kind of choice was that, anyway? In my case, she might be accurate. And my father wasn't so far off the mark, either.

"I know it won't be easy." I said.

"Oh, Libby, it won't be. But you've always been so independent. And we're here to help. You'll have to let me think about what to tell your father, though."

My father called again from the yard: "Virginia, you and Libby are missing all the cold air."

"I'll bet you have a big sleep debt," she said to me.

It was a firm conviction of hers that anyone returning home from the outside world must be in need of a long sleep. Usually, I spent most of the first few days home sleeping. This was allowed. Ever since I'd gone away to college, after a comforting meal of something mild and warm--even in the summer she'd fix me a baked potato--and a catch-up chat, she'd suggest I probably wanted a nap. Almost always I did.

I got a nightgown from my suitcase.

"I'm on my way," my mother said out the window, "Libby's going to bed."

She got my quilt from the closet. "I've got some fresh cantaloupe for your breakfast tomorrow."

"Thank you. I love you, too."

In this way began a deeper dialogue between my mother and myself. It is part of the eusociality of our species, the overlap of generations, the interface of motherhood.

Among the ghostly beasts, there was gratitude and relief. But not all quiet.

* * * *

The room was almost cool, so I closed the shutters, spread out my quilt with the lavender butterflies, put on my nightgown, and slid between the sheets. Had to get up again to turn off the light.

In the darkness, I set free the new griefs. "Pregnant Without a Husband" and "Research Project Wrecked" slunk into the blackness, momentarily subdued. The beasts of other, older griefs gathered in the darkness. One of them was "Abandonment."

Despite the evidence of a long and dreadful Second Instar, I, Libby Despars had not given up easily. The mismatch with the baseball star and the defection of the cloud chamber lover were setbacks. But not enough to belly up and die over.

What I did was vow that the next time opportunity presented itself, I would not flub it. After all, I could have slept with the first, followed the second to Boston. The failure of every relationship so far, I concluded at nineteen, was my fault.

Opportunity was an Assistant Professor named Jacobs--a T.A. in my History Class. I was a sophomore. The rule always is that professors are not supposed to date students. I thought the faculty observed these rules, so I felt doubly sought out and flattered when he asked me to dinner at a real restaurant. We had fun, we dated off campus, in the City, concerts--I can't bear

to think of it. I did everything one was supposed to do to keep a relationship going. I was mysterious. I was possessed of new, lacy underwear. I cultivated a toss of hair. I cooked and sent flirtatious cards. Everything. I was bonkers over him and, well, you know.

This was the hell of it--I know not in what circle he belongs--it wasn't just that he stood me up. He did stand me up. It was that later, when I confronted him (in most recommended Mademoiselle fashion), he was surprised.

"Hey, Libby-friend, you didn't have any of those kind of expectations about us did you, I mean...."

Translation: I think translation: you're a really nice girl and smart and ok looking but not the kind to marry, too angular, or serious, or just different, you know, and a student....You didn't think I could be that way about?

Having said that, he asked me out again and stood me up again.

That elephant grief again.

* * * *

Returning to Berkeley at the end of a restful week in beautiful Burbank, I left the griefs behind. I was unburdened of those at least, for a time. And Todd had returned from the East.

Chapter 12

FROG IN THE WATER CLASSIC

"I think we can call man a creature of several options, but not all options. There may be many, many solutions to any given problem, we see a very small percentage."

Dean Sylvester leaned back in his chair and smiled, pleased with his observation. He glanced around his office, piled with books and papers--he is of the species that saves up a whole year's worth of one magazine--N. geographicus.

"I always like to visit with my Professors," he'd say, moving a pile of magazines from the chair. "Much better than pushing administrative paper. The places to be are in the lab and in the classroom!" Of course, the minute anyone did anything seriously wrong around the department, they were threatened with being buried in the lab or being sent "back to the classroom."

Despite his professed open door policy, I hardly ever visited him just to shoot the breeze about the ants. We weren't on that kind of intimate terms. I didn't mind. I understood him well enough. If he was crossed, he was dangerous. But if he thought he was getting his way, he was at ease. I treated him

like a tyrannical father, remembering to approach him first with cheerfulness and optimism. No matter what.

On the way down to his office I tried to shake the feeling that had gripped me as soon as I returned to Berkeley. Since I'd left the big worries behind, put them aside for a while, I had expected to begin feeling at ease--being back at the University, back at my own house on Le Conte, about to begin the usual school routine. Normally I looked forward to the beginning of classes, clean new roll sheets, the bustle of the bookstores, the familiar clutter of academic life.

But that year felt so strange. Not bad, just an edge of anticipation, unsettledness. It wasn't the weather. The weather was behaving perfectly. I kept hoping the seasonal clues would jolt me into harmony. There had been the August heat wave. Then the cold snap. Now the settling in of endless California Indian summer.

So if it wasn't the weather, it must be the departure of Todd. As soon as he leaves, I'll get on with my life, I reasoned.

Or maybe being pregnant. I'm just feeling awkward because I'm pregnant, I told myself. Hard to imagine standing up again in front of 200 students and lecturing on the social insects.

Or maybe the Atta ants, cramped and bewildered in their travelling boxes with no place to go.

Or maybe it was the Moon Instar altogether.

A spinster masquerading as a queen. I dreaded facing Sylvester.

Difficult to be cheerful--impossible to act childlike. He wasn't going to like any of this--the Atta ants were in trouble. The army ant fracas had not settled down--if anything, it had intensified.

And childlike, well, how was he to keep thinking of me as childlike when I asked him about obtaining parental leave?

Although this visit was necessary and delicate, but nothing to come unglued about, really, by the time I got to the door, I was so nervous my stomach was contracting in regular waves.

Of course it wouldn't do to mention any of these trepidations, so I tried to appear casual when he said he would be happy to help me with any problems I might have.

"Well, I didn't really need to bring up any problems," I said, "just a couple of things to clear up."

"How can I help you?"

Going to see Sylvester was the first step of the game plan Nancy and I had devised. It wasn't really a game plan. Because we had no idea what the touchdown might be or where the goal posts were. The plan was made before the army ant fiasco.

I began by explaining to Dean Sylvester why the publication of the first installment of my "Spinster Hypothesis" would be delayed. Perhaps if man was a creature of several options (but

not all options) Dean Sylvester might see a few options that hadn't occurred to me.

I shifted in my chair and sat up straighter.

"I expected to have the results I needed in the next few months," I said, surprised at the hollow tone of my own voice, "but the difficulty with the lab move has interfered with our time table."

He nodded. "So how are you proceeding?"

"We have divided the main Atta colony into eight large, temporary housings. We have varied the numbers of members in each of the sub-colonies. Half of them have queens--half do not."

"That's a very creative solution," he said.

I established eye contact. "I think this will prove interesting. Some of the colonies may not accept or support a new queen. The colonies that are robust enough to fully mature will develop new queens on their own--at least if our theory is correct."

He shifted some papers on his desk. "Isn't the usual process to provide queens for subdivided colonies? I remember when we could purchase bee queens from Sears and Roebuck." He was another bee snob.

"Not much of a market for ant queens," I said.

"Where will the new queens come from in the queenless colonies?" He asked.

"The Spinster Queens."

"Isn't that different from what you were doing before?"

I attempted to put the best possible light on this. "Yes," I said, "but my original research was based on stable colonies--unfortunately, we no longer have stable conditions. And the ants are mating now."

Sylvester rubbed his chin. "What if your colonies die off? What kind of controls do you have?"

This was the rub. "None," I admitted. "We are treating this much like field research. If the colonies don't survive, we won't learn much except that they didn't figure out how to work it. We won't have any reliable way of proving why. They'll just die out, be extinct."

"You will have proven that ants don't like to be cooped up in boxes, even well-ventilated ones?" Sylvester suggested.

"Not even that." All ants really needed was a fertile queen and a food source. Starting from scratch. Dividing a big colony artificially was another thing.

"So, now, with the traumatization and break up of the colony, you are more or less trying to salvage what you can."

"In a way."

Sylvester got up and walked to the window. He appeared to be engrossed in the treetops outside.

"You know the Department can hardly endorse a fishing expedition."

"Well then," I said levelly, "perhaps you can help us with the lab space issue--before more time is lost. Each time the colony is traumatized, as you point out, we have to backtrack."

Sylvester looked vague. "I've spoken to the Strawberry people several times about the Cyclotron Road building...." He made no move to tell me what he said to the Strawberry people. I wondered if he was dealing with the same people we were--he might be negotiating with Chiang, or he might be in contact with someone higher up. He was not forthcoming.

"I gather there are still some groups reluctant to have us there?" I said.

"Ummm." I hated it when Sylvester got non-committal. He would have heard about the demonstrations up there--all the building personnel carrying signs demanding that ants be banned.

"Well," I said cheerfully, "the army ants should be about gone from the lunch room by now, and when the ants are gone, the opposition will evaporate."

"Ummm...." He said turning from the window and studying the way his finger tips met. Shoot. I was the only one making the conversation. I felt like a doodle bug digging herself deeper and deeper into the sand.

Nothing to do but toss up another handful.

"Is there any thought of us just staying at Oxford?" I asked. Sylvester keeps a bowl of lemon drops on his desk. (Candy on the desk is a specific form of management style.) In

all the years I had been at Berkeley, in and out of his office semi-monthly, I had never felt the need to suck on a lemon drop in the presence of the Dean. Now I was ravenous and dry-mouthed and only a lemon drop would do. I waited for his answer.

"Your Oxford space may be required for another school commitment soon."

Choke.

The easiest way to kill a program is to suddenly not have any facilities to house it. The "sorry, no space" game--usually a part of a squeeze play.

Yet, I couldn't imagine Sylvester failing to support us now that we had the possibility of an Amazon station. Also, De Witt wouldn't let that happen.

Still, this didn't sound good. I'd come to Sylvester's office asking for a grace period on my results. Now I was having to defend the entire project.

Actually, I was prepared to do that. In academia there's no reason to give up without a fight. Lots of things are possible, options, whatever you call them.

I took the lemon drop out of my mouth and dropped it in the trash. Not a cool move, but I had to plead my case.

I finessed the facility problem by ignoring it.

I re-framed my description of the Atta Experiment. Moved from reality to pro-activity. Save the ants.

"As soon as we are settled, we can expand on the idea of colony foundation. We can further divide the nests and introduce a spinster queen who was unsuccessful in the presence of a true queen. We can see if these 'secondary' queens can maintain colonies under optimum conditions." I rambled on about a plan for the future that was economically sound and would generate many new colonies.

"And then you could expand your work to infertile queens." Sylvester finished.

There it was again. Sitting at the bottom of the lab space controversy. When Sylvester, certainly De Witt, and who-knows-who-else wanted something, they kept at it. They wanted our experimental direction to include pest control. Sexy pest control, if possible. There are hardly any success stories with these efforts, long term, though researchers have been working on the concept of infertile sexual forms for years.

However, some people may be banking on the fact that, unlike the primitive solitary species, social insects are easier to manage. Apiculture (beekeeping) has been practiced by man for centuries. In the case of bees, it has been to our advantage to make more colonies. In the case of the ants, we would want fewer. You wouldn't even have to make the queens barren, just make them incapable of laying diploid eggs--that is, they couldn't produce males. It might be done. I didn't want to do it.

"Possibly."

"Ummm....MM" This ummm was more unsettling, with a rise at the end.

I considered another lemon drop. I looked out the window at the mild Indian summer's morning, already balmy, promising a perfect day. The office was stuffy, my belly kept jumping. I waited, not sure where we were headed in this one-sided discussion.

"If we can settle the space question soon," I reiterated, "then De Witt and Waldheimer can see to the propagation of the colonies and get that written up--for next year's proposal."

"Yes, the funding; we may have to re-apply in January, what with the Brazil expenses." Sylvester said.

I couldn't remember a year since I'd been in the U.C. system when we weren't experiencing budget cutbacks. But not mid-year. This didn't sound good, either.

"But I don't need to tell you we are very high on the Brazil prospects." He used the royal "we". "And Duncan leaves tomorrow, I believe?"

I nodded.

Sylvester stood and extended his hand in a genial fashion as if we were supposed to have been engaged in a really nice, convivial little talk.

"I had one more thing I wanted to bring up," I said hastily, "my spring teaching load...."

He looked at me curiously. "Work load?"

"Yes, the baby is due in January. I thought...."

"Oh, of course, Libby. But, you certainly don't want to abandon your efforts just now." He smiled in what he must have thought was kindly fashion.

"A few weeks?"

"That's a union matter, contract. You'll have to see the personnel office."

Second end stop. I had come to him, for one thing, asking for help with the Atta project. Had very shortly found myself defending the life of the research itself. Second, I'd come to ask for parental leave. And his exit line was he was washing his hands of the matter.

I stood, too, and gave him a tight smile.

"Let's talk about it when we get the ants placed."

"You know, Libby," Sylvester went on in his closing-anecdote voice, "I'm reminded of the classic frog in the classic hot pot. If you throw a frog into boiling water he will immediately jump out to save himself. Whereas, if you put him in a cold pot and then raise the water temperature ever so slowly, a degree or so at a time, until you reach boiling, a frog will cook to death, having accustomed himself to the hotter water at each increase in temperature. I don't think you've checked the water lately, have you?"

Frog in the pot.

I thanked Dean Sylvester and left the office.

* * * *

In the Brazilian wild, the Atta sexdens colonies divide at the beginning of the rainy season. In Brazil, they begin mating flights in November and continue them through January. The Atta mating ritual is a finely tuned, complex social phenomenon that involves the whole colony for most of the year.

The visible part, the public climax, is the mating flight of the new virgin queens and the males. The virgin queen, surrounded by her retinue of workers, comes to the open nest hole. Then, with an unseemly haste, in order to evade the males that are already pressing through the crowds of workers, she takes flight. She flies straight up, out of sight in the canopy of the rain forest. Primed and excited, the males rise into the air and drift surely into the trailing phermones of the redolent virgin. She waits for them to catch her--we know that. Studies have shown that the Atta queens can show evidence of intercourse with five or more males during the flight.

Finally, possessed of eggs and sperm enough to last a lifetime, the no-longer-virgin queen drops back to earth, burrows into the ground, and begins the process all over again.

This whole affair sounds like the important functionaries in the colony are the new queens and the males. But everyone participates, really.

The workers start it, if anything circular can be said to have a beginning.

We can determine one important benchmark of the cycle when we see the workers becoming crowded. For reasons we don't know, a colony keeps on producing mostly workers as long as they have room for more galleries. The "big" fertilized eggs that might develop into queens are bitten and starved until they hatch into stunted workers. The fertilized male eggs are simply fed to the other larvae, or the queen, or eaten by the workers.

At some point, though, the nurses decide to allow sexual forms to develop into larvae and finally pupate.

The timing of this switch to sexual forms is delicate and baffling in its complication.

Here are the factors that may or may not prompt a colony to begin the reproductive process:

The age of the queen. The presence of a powerful, fertile queen in the nest will keep the nurses raising other nurses or sterile forager-workers in all galleries in proximity. (Our estimates are that some Atta queens can live up to 10-12 years. The colony continues to divide during this time, but it splits off from galleries far from the laying queen.)

Food Supply. As the colony gets bigger and bigger, the food supply gets further away and more scarce, putting pressure on the group to split.

Temperature. As much as a 2-degree change in temperature can accelerate or reverse the mating process.

Ground humidity. The amount of moisture in the soil in the tropics is closely associated with the timing of mating flights.

When these factors conjoin in the correct way, the colony begins to rear fewer workers and spends its energy, instead, raising queens and males. At around this point, the nurse workers seem to agree to let a few "big" fertilized eggs grow into queens. The queen, herself, lays male eggs and encourages the others, we think, not to eat them.

Once past pupation, the sexual forms lounge around the nest, do not work or tend the fungus garden. They solicit food from the nurses and the workers. After a while, they become a positive burden to the frayed, worn working class. Soon after that, the virgin queens fly, and any males that don't follow, that try to return to the nest, are studiously ignored by the nurses and foragers.

Meanwhile, the little virgin queen, who appears to be raised for a life of leisure, is getting ready for her part.

Before the virgin queen leaves the nest to mate, she "knows" (how is this possible?) what she's got to do. Before she goes she tucks a little bit of the fungus from the kohlrabi culture

into her chest cavity so that she can start a garden as soon as she begins her own colony. (I think of this like a daughter going off to her new marriage with her mother's "starter" for french bread or something.)

On the gala, festive day, the workers and nurses accompany the virgin queen to an appropriate hump of dirt, keep the males from dragging her down, and help her launch into the air.

With the nasty economy of natural selection, she's dusted in a matter of minutes--her sex life forever over.

The no-longer-a-virgin queen burrows her way into the ground with the ability to generate hundreds of eggs a day and sperm enough to fertilize all the ones she wants to. (The queen may have up to 50,000 sperm stored.)

All alone in her little dirt dugout, the new queen lays a few worker eggs, feeds them from her own reserves but does not eat herself, and begins to cultivate her garden. In a few weeks, her daughters begin caring for her, and she retires to a life of laying eggs for the colony.

Despite all of these variables, you could just about set the Greenwich time on the regularity of Atta flights in established areas. The ants fly, the rains come.

The success of laboratory ant research depends on this self-regulating rhythm of the ants. They must be cared for properly, but, within reason, they can thrive in surprising conditions as long as their basic rhythms function undisturbed.

They usually do.

So everyone had a theory about what was wrong with our Atta ants. By the time I got back to Berkeley from the San Fernando Valley, the first two colonies had already died.

After my talk with Sylvester, I wandered by the lab to see if there were any new developments.

Waldheimer and Pardee had chairs pulled up next to the coffin-sized nests and might have had hats on their knees, faces grave for a funeral.

One of the nests, sub Colony #5, had been the site of a mating flight. Way too early in the year, but we had been aware that parts of the big colony were already primed in August.

The cramped little open space of the box was lethal to the winged, sexual forms that were programmed to fly high and hard into the jungle sky. But even if the nestmates had lost their sexual forms, that didn't account for the death of the whole colony.

Sub Colony #3 was gone, also. No mating flight there, but not an egg left uneaten in the nest, either.

As I said, there were plenty of theories about what had befallen the nests. Waldheimer said it was the disruption of the food supply. Pardee thought we hadn't regulated the humidity of the dirt carefully enough. De Witt voted for temperature. The cold snap and then the heat wave.

I kind of thought the problem was that they didn't have any room to take their honeymoon. Maybe they died of broken hearts. I had enough sense not to share these hypotheses with my colleagues.

Where did one bury one's favorite ants?

Chapter 13

HYMENOPTERA

I started walking slowly back to my little house on Le Conte. I knew that Todd was there, making phone calls and re-packing his suitcases. I didn't want to see him just then.

My street angles off to the left as you walk uphill on Hearst Avenue. I passed it by. The air was now body-temperature. You could scarcely tell where your skin ended and space began.

Students were coming out of North Gate and their first eleven-o'clock Monday classes and swarming over the sidewalks on Hearst Ave.

I kept walking along, merging with this crowd, feeling a part of the excitement and promise and wonder and pizza and popcorn and noise. The air was salt and pine and sage and grease. The bells of the Campanile were playing "Hail to California." The ghetto blaster on the corner was offering The Grateful Dead. Kids were hanging out of open windows and checking the action or passing beers to friends. Their music was going. The sun had turned the colors of the day to pastel autumn--olive green, goldenrod, teal blue, white like the stamen

of a new flower. With a beat. Signs of life in the universe.
The Autumn Equinox. The last rhythm of love.

Going left on Euclid, I remembered that I needed to get a tape recorder for Todd. The electronics store was mobbed--all the students putting the finishing touches on their sound systems, the mainstay of our tribal mating ritual. I got a sturdy mini-recorder and blank cassettes. Testimony of where Todd and I were in the mating ritual process.

When I came out again onto Euclid, it was like a different planet. The street was emptied. It looked shabby and old. Bars on the windows. Trash. Just that fast.

I found Todd in my kitchen. Looking, no doubt, for his espresso maker.

"Here you are!" He cried. "Are you all right? You're so late!"

"Are you looking for something?"

"I called Sylvester's office. They said you left there over an hour ago--where have you been?"

"I stopped to buy you a present."

He looked at me blankly.

"In the kitchen?" I asked.

"Oh, yes, I thought I'd take my espresso maker. I'm almost done packing."

Bummer.

"I put it away in the cupboard under the oven. You had such a short turnaround time. Are you taking that?" I said.

"Jesus Libby. You look so pale. But I have to talk to you."

He plumped the pillows, helped me lie down, and took off my shoes.

He pulled grandma's old rocker up beside the bed, sat down and took my hand. A death-bed scene. My heart almost stopped beating, my stomach cramped.

"Please listen to me. This is a miserable son-of-a-bitch. We can't say good-bye this way. You have to know how much I love you."

I nodded. There was the curve of his shoulder, his gold tooth. I wrapped my arms across the small mound of my belly. I could feel the baby's feet under my rib cage.

"No, not just like that. I mean really love you. I can't stand to see you look at me like I'm abandoning you. I can't take that. I'll always love you. When I get back we'll be married. I've pretty much worked it out with Janice."

My ears were wet.

"On the way home," I started, "the streets were dancing. It was like the dragonflies in a way, the attraction, you know, the excitement of the beginning of school...." I went on to explain how just a few minutes later, when I came out of the store, it was over. By this time I was probably sobbing, sure I

was, and said how I had missed that as a young woman, awkward and inept and lonely and dedicated, and then we, he and I, had only a few weeks of sunlight love and passion and music and root beer honey before that was all over and I wanted it back.

"I don't see why love has to be so brief, for us." I said. A few minutes at noon, a few days, a few weeks of significant joy. And the stretch of wasted time before and after."

Todd smiled a little. "The before part was a sad stretch, for us, but the after part won't be. Not as long as we have each other."

"And baby and Janice and Jake."

"It's not like that," he pleaded. "It's different. You and I will love our baby. I love Jake. I love Janice. But I'm in love--jesus that sounds so stupid. How can I say it? You're the one who keeps the world alive for me now."

I nodded again, because I thought I knew what he meant. Despite my wish that he didn't have to go, despite the prospect of a long wait before we would be reunited, before everything would be settled, I believed in the truth of his intentions. We just didn't have any words for it.

"I'm going to miss you." Redux. Didn't I know how to say anything else?

"I know. But you have lots to do--take care of the baby, the ants, and keep on fighting for paid leave--then you can come to see me."

The thought of the session with Sylvester made me cry anew.

"Oh Libby, I didn't mean to make you so unhappy. I just lost track of the fact that you had to share me with a wife and child, and I didn't want to lose a moment of your love to anyone else. I'm really sorry I didn't see that. I hope you can forgive me." Todd moved over onto the bed and cradled me.

"So what now?" I said after a few moments.

"Do you want me to stay here?"

"Yes....But I'd feel silly if you did. I'm healthy, everything will be fine with the baby, the doctor says so, you can't do any more than I can about the lab, and then you would have stayed home for nothing."

The baby gave a kick. Todd moved his hand to that spot on my side.

"It isn't nothing. I can't stand to think of you feeling deserted, or that I betrayed you."

Nevertheless it moves; nevertheless I am alone.

He went on. "Look, I talked to Janice. I told her about us--about the baby--about how this happened. I told her what I think is the truth. I didn't tell you I was separated from her when we first started seeing each other. You made the decision to keep the baby. You were prepared to go it alone. And I said I really, really love you and want to be free to marry you."

The next kick was directly to the kidneys.

"And she said?"

"She said we should talk about it next year."

"She's a patient woman."

"Can't we please, please not talk about her and instead talk about us. Libby? Do you understand how I love you? Do you still love me?"

"Yes. Yes."

He left the next day.

* * * *

At the airport, though, despite my efforts to be cheerful, he was not the happy wanderer, the scholar-gypsy, the bluebird of happiness. There was between us a pre-illusion of distance. He was absorbed with Patrick and Doug, and Rhoda kept taking charge of everything--tickets and visas. Every so often, the brief kiss between us. The sense of blue void, flights of waterbirds over vast continents. As if he were already gone.

We waited for the plane to board. We had a few minutes alone together.

What if you had your last day together and neither of you could find anything to say?

Remember when we walked across campus to the hiring committee? Todd claimed that I had linked my arm in his as we walked through Sather Gate. He said he knew then that we would

be lovers. I denied that I would have ever been so unprofessional. I certainly didn't remember that.

Remember the dragonflies?

Our cove at Mendocino?

Root beer honey?

Love in the formicary?

The sunsets from Strawberry Canyon?

The democratic bees?

The lobsters in Baton Rouge?

De Witt and the army ants?

Before I knew it, Todd and the graduate students were walking down the corridor to the plane, waving.

I drove alone back across the Bay Bridge in the bright, late summer afternoon. Below me, the whale road echoed through the water, all the way to the headwaters of the Amazon, it seemed. Across the bay, the buildings on campus caught the light, stately and serene and eternal--a place of knowledge and wisdom and truth and certitude. A place to do good work, if nothing else.

Surrounding the island of campus, the cream-colored houses were arrayed in rows and tiers across the hillside, looking like the combs of the Polistes wasps, reflexive little shapes lined up one after the other. The way that humans nest.

In the heavy traffic on University, I felt the baby kick and turn, but my stomach no longer contracted. I tried to think of a case in the insect world where the pregnant female might be

unnaturally deprived of her mate. The bee and ant species are full of single mothers, but that is the expected course of events. I thought of the termites, who mate for life. The termite queen huge with eggs, beside her, the faithful mate. Made a mental note to find out what happens if he goes away.

Finally, I switched on the radio and inched my way along Shattuck in the growing darkness. At the Oxford Tract, I pulled into the parking area. Someone had left on the red light. I went inside to the scarlet and black of the night insectary to bid the Atta good night.

* * * *

The next day, I stopped in at Margaret Huffaker's office and invited her to lunch. Step Two.

To my surprise, she not only said yes, she seemed almost pleased. She suggested a little place way down on University that had South American food. I wasn't in the mood for spicy food--but guessed she picked it in honor of Todd being in Brazil and all.

We met the following Tuesday.

I decided to walk to the restaurant that day. I planned to hitch a ride back to campus with Margaret.

The sun was bright outside, so when I stepped into the cafe, I couldn't see at all for a few moments. Then I saw Margaret was

already ensconced in a large table near the only window. The restaurant was very nice, with Indian print tablecloths and pottery bowls of jungle orchids.

Margaret was wearing her sensible shoes, a brown denim shirtwaist dress, and a baggy sweater--even though it was hot out.

"This is one of my favorite places," she said. "Do you like South American Indian food?"

I had to admit that I wasn't very familiar with it.

I was surprised that she was. Even though everyone at Cal has carefully individuated lifestyles, I hadn't figured her for exotic tastes.

"I did some field work in Central America when I was young," she said. "I think I even fell in love..." She let the thought trail off as though she meant me to understand she liked the culture. I read more.

After she finished looking at the menu, she took off her glasses and gave me a tentative smile. She had clear eyes with laugh lines at the corners.

"I'm glad we got to do this," she said.

I started to feel uncomfortable. Dishonest, actually.

I mumbled something about time to get to know one another.

Mercifully, the waitress came to take our order.

"So how is your research going?" I asked then.

Over a spicy soup we discussed her work with insect predation and food supplies, insects and human health. I knew she was good in her specialty, but I really hadn't expected she'd be so articulate in the history of entomology, here and in third world countries. The only times I'd heard her before had been with the rest of the faculty. The men usually dominated the discussion, as I've said. They tended to dismiss her. But now I started to really listen; I started to like her.

When lunch came, she redirected the conversation.

"That's it," she said, "hard to get others to see that insect predation is directly related to feeding the young. But we've got instances closer at hand, am I right?"

What could she mean?

She saw the look on my face and laughed.

"I didn't mean you. I meant the department."

"Yes?" I had no idea what I was saying yes to.

"I'm a woman, too." Margaret filled one of the little tortillas with a dollop of very hot salsa.

I was still stuck. I felt guilty for setting up a lunch as part of a "plan." I expected her to be perfunctory. Instead she was genuine. I didn't know what to do.

"Well," she speared some chicken and put it with the salsa. "It isn't necessary for us to be friends just because I'm on your tenure review. In fact, one usually avoids that type of thing."

"I just hoped that you wouldn't...." I stopped short.

"Vote against you because you were a woman?" She smiled.

"No, it's...."

"Or vote for you because you are a woman?"

"Not that either." We both smiled.

"Look fairly at your work?"

"Yes," I said.

"I have. And I am already going to do everything I can to see you get your position."

I started to thank her.

"But, you'll need more than that."

She didn't say this unkindly. She didn't say it as a threat. She seemed to be coming from a kind of sadness.

I admitted that the situation was dicey.

"Let me see if I can put some words in your mouth," she said. "Your protector and mentor, Evanson, went to Minnesota or somewhere. You have generated hard feelings in some of your male colleagues by behaving as if women were equal. You are in a fix with your Spinster paper. You don't have a permanent place to work. You've got De Witt who wants to be the only star. And you have been pursuing a visible affair with a member of our faculty who is married. Shall I continue?"

Heavens no, I thought, this was enough to have me sent to San Quentin.

I shook my head and took a long drink of water.

"Oh, and congratulations. I really do mean it."

"Sometimes I'm thrilled. Other times I feel guilty, like I'm letting The Women of Science down. Do you know what I mean?"

"Perfectly. That's why I'm glad you asked me to lunch," she said. She said this resolutely; something important had been settled.

She went on. "You young women, you and Nancy Wilcox and your friends, have been part of big changes for women at the university--in science all over. You stand up for yourselves and you're proud of your accomplishments. But you're looking at a narrow time frame. It makes me sad to see you separate yourselves, and even ridicule, the women who went before--built creditability for you. I sometimes wonder if you don't think the old ladies--the few of us--never put up a fight. You think we just loved being old maids and looking dowdy and sexless. That isn't' so. It never was."

I was pained to hear her refer to her own physical appearance--by this time I had come to see how really handsome her face was and what an engaging smile she had. And I knew there was justice in what she said. We did tend to dismiss the older ones--unless they were feminist leaders, which they weren't likely to be. They usually did their work, voted with the ranking males, scrupulously avoided attracting attention of any kind.

"The Rosalyn Franklin syndrome?" I said.

(Rosalynd Franklin had made a key contribution to the DNA discovery in the early sixties. Not only had she been ignored when Watson and Crick won the Nobel Prize, she was openly attacked when she objected. It was a grisly, mythic story. Dr. Franklin died a few years after--probably of frustration. Later, when the Women's Movement gained momentum, Watson and Crick apologized, acknowledged her work; it was too late, then.)

Margaret smiled. "Rosalynd represents one instance of it--our generation's experience. But most of us just kept at work, even though we didn't get tenure. I think we felt lucky just to be in science at all. Never mind our work being stolen or ignored."

I knew what she was talking about. Over eighty percent of our fully-tenured faculty was still white and male.

"That's changing though," I said. The words rang hollow in my own ears. A nice sentiment, but entirely too glib.

She ignored the remark. "I'm not worried about the males that are there--they are probably deserving. I'm talking about a certain kind of woman who struggled hopefully for years. Then one day she wakes up horrified at what she has become."

"Lots of regrets?"

"Oh the usual--but strange--stranger than that. You find yourself inhabiting a life form you don't recognize and can't understand. Like ending up in an evolutionary cul-de-sac."

The waitress came back to the table. The restaurant had emptied of the lunch trade. Beyond the window, couples mostly, strolled by on the sidewalk. It was quiet and cool and we ordered some flan for dessert.

"I'm almost reminded of my mother's experience," Margaret mused.

"Was she a scientist?"

Margaret laughed. "Nothing like that. She was a flapper. Did you know that in the twenties breasts were considered unfashionable?"

"Hard to fathom," I said.

"Indeed. But the proper look was mannish--bobbed hair, straight figure. All the modern women advertised their liberation in this way. My mother wanted to be modern. She wanted to look emancipated, but she had developed early and had large breasts. She was embarrassed to go out in public. So she did what was considered correct at the time--many women did this--she bound her breasts."

I had never heard of breast-binding. Foot binding, yes. But not chests.

"What they did was this, they wrapped their chests tightly with adhesive tape. That made them look flat--but it also broke down all the breast tissue and muscles. When the time came, she couldn't even nurse.

"In ten years or so, people rejected the wildness of the Roaring Twenties, men wanted their women back in the home and ripe with cleavage. And there you had a half-generation of women left over who were freaks, really."

"Did you want children?" I asked.

"I never even got that far. I wanted very much to be married for a while."

"What happened?"

"I thought I had a good chance to succeed. And I was right, in a way. I did succeed. I've been able to do my own work. I know that the current wisdom says that you can have husband, kinder, and career. Maybe so. But I don't believe for a minute that I was aware of having that choice. We simply understood that you did one or the other. I knew a few couples who both taught--but always in different fields--usually the woman was not tenured. Never in the same field, then....And the attrition was all around. The men in the department were anxious to move you from the role of competitor to faculty wife. I didn't want to be part of that attrition."

"What about someone outside?"

She gave me a quizzical look. "Don't you know the answer to that?"

I guessed I did. The answer was a corollary to what she'd been telling me all along--and what I knew myself from the Second Instar. You start out in the mainstream. For a while you are

nearly indistinguishable from all the other females waiting to mate. Then you go to college and reduce your mating pool a lot. Then you go to graduate school and reduce the pool even more. Then you pick an off-beat science like entomology and begin to look, too, like (horrors!) a woman academic. The pool is a dried-up puddle. No one would want a female entomologist except a male entomologist.

"The men of my generation are correct on this point," Margaret said. "A young lady is still good marriage material if she doesn't take college seriously. She can want to be a doctor or a writer, she can dabble at it a bit for a couple of years. But once she actually becomes that thing, she's changed. She probably won't settle happily into tupperware and tidying up. And men sense this. Human chemistry."

"What about love?" I asked.

"I wasn't talking about love. I was talking about marriage." Margaret amended.

"But we do fall in love with other scientists." I meant in general.

"We do. You do." She paused. "I did."

"And they fall in love with us." This seemed an important distinction to me at the time.

"I'll give you that." She spoke in a light, controlled way about a man in vectors named Reggie. She had met him on a research project in Costa Rica. He had been separated from his

wife who wanted a divorce. They, Margaret and Reggie, moved in together and lived a rainforest idyll for several months.

"I was ready to sacrifice a substantial amount," Margaret said. "I didn't have a full-time job then--wouldn't for a few more years. I went back to Texas with him to see if I could get on at the University there. He couldn't do me much good that way. He was a quirky Britisher in among the cowboys--so he was kind of out of place there. He couldn't pull much weight on my behalf. And the divorce dragged out, they always seem to. But the real problem soon became clear--who I was.

"Everything was simple and basic and unreal in the jungle. We were colleagues and lovers. Back in Texas it was different. Reggie didn't like his wife, she didn't much like him--but for all that, he wanted me to be more like her. He seemed to want me to have beauty-parlor hair and dress in suburban-wife clothes, for one thing. He encouraged me to attend functions for the faculty wives...." She shuddered.

"All of that was fine as a way to position me to be his faculty wife. But it would kill my chances to be taken seriously by the male faculty members there. I might get the occasional part-time assignment--but I knew that little by little I'd be pushed out of the lab and into the kitchen. So I left."

I wanted to argue that Reggie was a product of his generation, that men were different today, that men and women took it for granted that both would have careers. But....

"It hasn't changed much?" I said.

"Not so much. I came back to Berkeley, picked up the pieces, retook the vows of science and...you know...spinsterhood. It got harder later--when I saw that had been my last chance."

I was anxious to reassure her. "But you have done well."

She placed her purse in her lap, folded her hands over it. "Let's be realistic. For a woman, yes. I get to sit on the team bench. But nowhere near a starter--or a star. Not like Todd Duncan who can work anywhere he wants, do anything he likes. Science is just like any other career with an invisible ceiling for females. I barely got tenure--you too, if you do."

We were silent for a while; we put our money on the table and watched people going their way beyond the window. The light had taken on the familiar gold of afternoon.

"Of course there are no guarantees," she said finally.

She gave me a ride back to the research lab. She offered her help. She offered her best advice:

"Keep asking questions and wait for the answers."

Chapter 14

CATTA PILOSA

After Todd left, the days seemed to crawl along on six legs. Even the hours were awkward and slow. I began to think of myself as a round caterpillar, or catta pilosa--literally, hairy cat. Nice as it was to be healthy and pregnant, it felt something like reverse evolution. Before, I had imagined myself the scarlet-feathered cecropia, now I was the grub.

This was turning out to be one mystifying Moon Instar.

In addition to the quirks of my body, I found out some new stuff about Todd. He confirmed my suspicion that he was not an enthusiastic letter writer. This from a man who had always documented his slightest move in the field. And it wasn't that he couldn't write. After all, he writes well, to this day, in a professional capacity.

I mentioned this to Nancy and she said:

"I wonder if he believes he has to protect some deeply interior side of himself that he fears might be revealed in the unstructured haste of a personal missile."

I gave her a three-pound look.

She shook her head. "Get a life. You miss him desperately, so go ahead and miss him, have a cry, pig out on pasta, start a journal, but leave off the psychoanalysis. He said he loved you--said he'd be back to marry you."

What I did have at the beginning was a couple of tapes. He'd taken along my mini-recorder (and the espresso maker) to Brazil. Rather than write, he talked into his tape recorder as he did his evening paperwork. The light was bad, he said, the humidity oppressive--he rambled along with a sort of internal monologue which was intimate but not clarifying. Another thing. These tapes didn't arrive as often as I would have liked. But the sound of his voice was a great comfort. I could play them over and over.

Nancy, half way in jest, told me to put my tape deck on my stomach when I played the tapes so baby would learn the sound of his master's voice.

(She showed me a British study that claimed the fetus in the womb responded to the theme music from soap operas. Silly stuff, but I was game to try anything that gave me the briefest illusion of closeness between the three of us.)

In lieu of getting frequent letters, I wrote to Todd often and I kept in touch with the parents of the graduate students with the project in the Amazon.

Patrick Moran's parents heard from him about as often as I heard from Todd--they were in Oregon and I called them a few

times. They were enthusiastic about Pat's career and he wrote them descriptive letters full of exquisite detail, including dysentery and tree snakes (kinds of detail mercifully absent from Todd's ruminations).

Rhoda Wheeler's mother lived alone and was less enthusiastic about having her daughter in the darkest jungle. Rhoda's letters were accordingly more frequent and abstractly cheerful. Mrs. Wheeler lived just down the peninsula in San Jose, and we spoke once in a while.

The other graduate student, Doug Huang, wrote long letters regularly, both to his parents and to Dean Sylvester. The Huangs, however, lived in San Diego, and spoke little English. Their letters were in Chinese. Sylvester didn't show me his.

Within weeks, I began to feel almost familial ties with the stateside relations of Todd's expedition. Still, all the information we got was at least a month old. We followed the activities in Brazil in a frustrating time warp. On the two occasions Todd called, he was distracted and in a hurry.

Honestly, if that had happened in the good ole' USA I would have said I know a heartbreak when I see one. The ubiquitous phone brush. Of course that couldn't be true, you don't dump someone who loves you when you're in Brazil. (You do it before, or after, I believed.)

I put my pique down to pregnancy hysteria and told him to call collect next time.

* * * *

Soon after my meeting with Sylvester, I went down to the personnel office to see about forms for my parental leave. The personnel people are housed in a large office building at the west end of campus. Perpetual surprise: the office building looks like any other high rise in San Francisco or Los Angeles. The workers who come and go look like well-dressed workers anywhere. Even though all the money and paperwork pass through these portals, you can't find a hint of the arty, intellectual, stubborn shabbiness of the Berkeley campus. Even the bulletin board humor is predictable and conservative and stale. It must be the bottom line.

I was shown into the office of a nice young woman named L. Takori. She slid her trim black suit behind her desk and into a large swivel chair while I squeezed into a metal and leather arm chair. Very difficult to maintain the madonna look here.

She had my file.

"Congratulations," she said correctly. "You must be very pleased."

I nodded.

"Everything is in order," she announced.

I couldn't imagine what wouldn't be "in order," but I was somehow grateful.

"So. Do you wish to apply for short term disability or long term disability?"

I was pretty sure I didn't want either of these, but I remembered to follow Margaret Huffaker's directions: be an information gatherer. I requested explanation.

"Short Term disability lasts for six weeks. The State furnishes the 40 percent of your salary, the University will match this. Your total compensation will be 80 percent of your usual contract.

"The Long Term Disability may extend to any time period. University does not contribute to your compensation."

I let this news settle, pretending to give it serious consideration. (When, in fact, both options seemed impossible to me. Money and time.)

"Is there anything else?" I asked.

"Oh yes, many conditions, doctor forms, things like that." She leafed through the application booklet.

Information. "Do you have children?" I asked pleasantly.

She blushed. "Oh no. My husband and I have been married only four years."

"Gee, if you were to have a child, which one of these would you choose?"

Bingo. She looked briefly confused. She had accepted the American promise but hadn't worked it through that far. This was a pet theory of Nancy's in action. Most of today's women, Nancy maintained, didn't remember why women needed protection in society. By the time they found out, they would be burdened beyond belief and voiceless, therefore. Protest would be too expensive a luxury.

The motherless society. The spinster queens.

L. smiled and straightened the file.

"I don't think about that yet."

"Didn't we used to have something like a state policy--what about parental leave?--a semester off with pay?"

She smiled brightly. She had this data. "It was never formally approved by the Regents. Some schools have done it. But not recently."

I pushed down the lump in my throat, took both applications and the literature, and thanked her for her time.

Some anger feels a lot like heartburn. I stopped in the eucalyptus grove to take some deep breaths. This was not the fault of L. Takori. She had nothing to do with it. This was what happened when an individual got out of step with the phases of the society. If you did the Second Instar right, you fell in love with someone else who was single, got married, had children at a time when two of you were present on the scene, and went back to work sometime later. This path to working motherhood was

no picnic, either, but it was doable. The crucial thing was to enter and exit the jumping rope at the right time. If you were a few steps ahead, or a few behind--or in the wrong Instar altogether--you got mangled in the rope.

It was that simple.

I hurried on in my now-ungainly way past a clump of my students, and headed up the path to the lab.

I was flooded with deserved self-pity and righteous anger, no contest there. But there was something else, too. Something larger and hidden--an unsuspected level of savagery in society only dimly perceived. During the entire interview the word "pregnant" was never spoken.

Disability.

She said I could apply for disability.

Still and all, I hate to cry in public except at movies and, until Todd and the Moon Instar, I didn't do movies much.

So, I took some more deep breaths of the soapy-smelling, fall air and entered the lab. I could feel my face still hot and prickly, my chest burning.

Waldheimer was alone in the room. He gave me a warm hi-ho and patted the baby--something that was becoming alarmingly common. I wanted to lash out with something about how everyone around is just full of kitschy-koo about birth, but mothers are supposed to accomplish this miraculous feat on their lunch hour--but hell, it wasn't his fault, either. Maybe he had wanted to

stay home with his toddlers, and didn't get what he wanted, either.

Lars Waldheimer put his arm protectively about me and drew me over to his bench.

"Look, I've figured out a way to build plexiglass windows into these crates. We can see the nests better. I want you to have a look at this one. Maybe we can figure out what's going wrong."

He had nailed tongue and groove attachments to the sides of the ant containers. In this way he had been able to replace the wood panels with clear plexiglas. You couldn't see the entire nest, but you could see three sides.

"Wonderful!"

"And when we have to move for real, we can replace the panels," he pointed out proudly. "Next, I'm going to build a wedding tent."

What was that?

"You'll see," he said. "We'll save our ants yet."

I hugged him around the waist.

He looked concerned. "You're all hot, you shouldn't walk so fast."

I hadn't meant to discuss the leave issue with anyone until I found out what was what, but Waldheimer jumped on it the moment I mentioned the discouraging day at the personnel office.

Not so long before, he'd been involved with our faculty negotiating committee about just that issue. His story was both typical of Berkeley and atypical of the rest of the planet. But it told a universal story. The way that Berkeley stories often do.

I followed Lars' tale with wonderment and a little guilt. From his account, his involvement with parental leave got started a bit late on in the women's movement, when women of childbearing age were suddenly starting to get tenure-track jobs. The question of maternity leave arose, and the Academic Senate fought for it and the Faculty Bargaining Unit asked for it in contract negotiations. So far so good. Not many women needed it. Some chose not to take it.

Then came a lot of new activity about equal treatment and men's rights. Two male professors, one in Chemistry and one in Philosophy, filed grievances charging that they were victims of reverse discrimination: women got time off for maternity; men, for paternity, did not. Their wives had new babies; they were now fathers, and they wanted paternity leave. They claimed unfair application of the law. They demanded six-months leaves.

They got them.

After that, the word came down from the Regents that the matter was under "administrative investigation." No more leaves were to be granted to anybody--male or female.

Parental leave--so in keeping with the spirit of Berkeley, so politically relevant--was a dead issue.

"Did you apply for a leave?" I asked him.

He moved another panel into place switched on the infra red lights he had jerry rigged.

"I did."

I felt a sudden sense of dislocation. Sun Box. I remembered vaguely all the hoopla about parental leaves. I knew it had been the main topic in several meetings I'd attended. I also knew that I had certainly voted on the popular side--the feminist side.

I even remember agonizing over which side was the proper feminist side. To wit: a woman professor in the Art Department had insisted that parental leaves were detrimental to society. All of society should participate naturally in the complete life cycle. She, herself, had brought her son to class every day, diapered and napped him in a special corner of the art room, and used feeding periods as a "model" opportunity. She felt that child-nurturing should be a part of everyday life--whatever the parents did, the child should be included. I voted in favor of parental leave because, her choice notwithstanding, others might choose to stay a home a while.

Lars and I would have been working together then. I knew his wife was pregnant with her second child and working part time in a day-care center. Sure enough, I never wondered who was

going to make up the lost income if she had to quit or who was going to get up with the baby at night and the two-year-old in the morning.

"Did you tell us about this?" I said. "Ask us to support you?"

Lars smiled the smile of the trenches. "I was waiting for tenure. No."

The truth was, I confessed to Lars, I had paid attention to the parental leave debacle only superficially. It was a political issue--even a political bargaining chip. In the end--an end of sorts which came a long time after and in piecemeal fashion in the way university issues often conclude--I hadn't read the actual terms of the outcome.

"Well, as usual, there wasn't an outcome," Lars said. "It finally disappeared into the paper machine without a trace."

He left to pick up his son at kindergarten.

* * * *

I had always felt cozy in the lab--the soft, otherworldly glow of the light, the earnest hum of the little enterprise, the sense of order and growth. But since the abortive non-move to the Cyclotron Road Building at Strawberry, it wasn't the same. The breathing rhythm was broken. Almost surreal in some ways,

like a chambered creature that suddenly had eight hearts--seven--six.

I pulled up a chair close to the case Lars had indicated. It wasn't the best use of research time, but I wasn't really working, either. I was thinking about motherhood.

In the nest, the nurses scurried among the labyrinths and chambers, performing their duties. The nurse-workers were small, specially selected to mind the larva. But how did these sisters know what to do? "Mother" was a big Queen who lived many rooms away and communicated only through chemical messages. Yet the little helpers worked unceasingly, turning the babies, keeping them clean, feeding them on some elaborate, invisible schedule. Some of the larvae were almost bigger than the nurses. But the work went heroically on, turning, moving, adjusting, washing, feeding.

Dogged and exhausting labor it was--but it was sisterhood, not motherhood. The nurses did not develop attachment to any one baby. At least that we could see. They agreed not to reproduce themselves simply because their little sisters were more like them, genetically, than their own children would be. In a larger sense, their contribution to a genetically stabile work force made them, and their colony, likely to survive.

As individuals, they were minions in a busy orphanage.

On the other hand, the whole colony acted as surrogate mother to the young. The larvae and pupae were tucked away in

the safest cellars; they were given the choicest kohlrabi bulbs; they were protected to the death by the rest of the community.

In fact, since the Atta don't engage in capitalistic pursuits like resort hotels and world trade, the babies are the only game in town. The Queen exists to lay eggs, the nurses raise the larva, the workers feed the larva, the soldiers protect them. And that's it. The males mate and die. The colony is mother to the colony.

* * * *

I thought of human mothers. My own mother.

Her mother.

My grandmother came from a big, jolly German family. They tended to have many children and more servants. She was on her way to college via Europe when she met a devastating Scot. Against her family's wishes, Gretchen married at eighteen and had seven children in twelve years.

Life for Grandma Gretchen was not what she was brought up to expect. She had been trained to expect that someone else would do the cooking, cleaning, housekeeping, child-rearing, and dressmaking. She was trained to play music and arrange to have the house decorated, plan the Christmas tree. But she didn't get what she was bred for (always a hazard). She didn't have servants after her marriage and then she and Asa moved west and

they didn't have family either. Pretty soon they didn't have money. But the babies kept coming. She was as busy as a nurse ministrant and twice as overwhelmed. She had been raised to be a "lady" and she found her life an unending scullery. She gained fifty pounds. She cut up her wedding dress with the twenty-one inch waist to make a Communion dress for Caroline. She chained together years of evenings mending dresses and cutting cardboard to fit the inside of worn-through shoes. Everyone wore hand-me-downs except my mother, who was the oldest. But anyone could wear her clothes that could fit them.

Except Frank.

Six girls and then the long-desired boy. I'm not sure who initially desired the boy--probably my grandfather Asa--but once Frank was there, he was the favorite child. My grandfather died young, while Frank was still in grammar school. My mother, who was just graduating from high school, abandoned plans for college, took a crash secretarial course, and went to work to support the family.

All those California years, my mother and my grandmother lived down the hill from the Blind School. I picture her trudging home from the bus stop on Albany. She vowed every day to never have more children than she could take care of. She promised herself to have only one. (I was an accident.)

In a few years, her three sisters joined my mother in the work force and things got easier for awhile. But grandma was no

longer the spoiled belle. She saved her bacon grease and paper bags with the best. My mother meanwhile, got a good job in the City, bought business suits and cocktail dresses and a car. Not to launch a career, but to get a good husband. My father. She had Anne a year after they married.

In spite of her diminished hopes--the periwinkle-blue chiffon dress zipped away in the garment bag, the strappy evening shoes gathering dust--my mother took her new role seriously. Instead of having another baby, she made sure Anne was fitted properly for walking shoes. Instead of a baby the year after that, Anne went to playschool and had her first dental appointment. By the time I came along (spawned one night when, in a new chiffon nightie and under the influence of cuba-libras, the diaphragm was forgotten), my mother was an expert.

Anne and I went to school with tidy lunch boxes containing all four food groups, we had library cards and dancing lessons. Ever mindful of Grandma's chaotic struggle for survival, mother gave us everything she'd always wanted.

I realize that these things--the library cards, the orthodontist--are not as impressive as having a pony or your own sailboat. But they are not inconsequential. They represent a certain kind of careful effort.

And that afternoon, in the dim light of the lab, sitting in Todd's old chair and watching the busy, impersonal nurses, these thoughts brought me to the question of unconditional mother love.

Gretchen had loved her children. This conclusion seems inescapable. She gave up the greater part of her adult life for them, from all accounts, without complaint.

(Important here, I don't mean she gave up a part of it, I don't mean she attended to them in between her Doctorate and her Tenure. Until they were grown, they were her life.) Yet, except for Frank, my mother thinks not one of the girls ever had much sense of being loved. Grandma was there, but it was always bills to pay, worries to worry, dinner to make, and someone else to look after first.

That's why my mother is and was so attentive to Anne and me. When I came home from school she was always there with a smile and a hug. She showed me open-hearted love; she was glad to see me; she had time to talk. It's very, very sweet to have a mother like that.

And dearly bought.

I know that.

In turn, would my child nap in the lab? Be shuttled from child care to sitter? Come home with news of her first boyfriend to an empty house?

But I was getting ahead of myself. The lab isn't such a bad place to sleep.

In the late afternoon, I faced the "in" box on my desk. When there was nothing further to do, I printed out new

instructions for the graduate students about the ants and taped them on the wall.

I was tired, and De Witt would be coming in soon for his bogus "office hours." Still, I would have welcomed another job or two, anything to bypass the empty twilight. But there were only the wet-nurse minims, tending endlessly to the brood. And disposing of the valuable new eggs and larvae somewhere.

* * *

The hardest part of the day was always sunset. In Berkeley, in the autumn, the view on clear days as the sun sets is peerless. The bay: shimmering turquoise; the bridge: jet black and lacy; the sky: deep, pure persimmon. Large birds fly south in synchronized patterns against the sky or skim low over the water. It's a time when, if you were going to miss someone, you would feel the landscape in sympathy. The vista from my kitchen window was one great metaphor of loneliness.

When darkness came, I'd sit in grandma's rocking chair in the study--that was slowly becoming a nursery--and work on my spinster paper. Nancy might come by, or Margaret, to help me with the editing. At least once a night, I'd play Todd's tapes over again.

The first one was made during the few days the group spent in Manaus.

"Hi Libby. I love you. We arrived in Manaus late yesterday afternoon. The plane was late taking off but everyone told us that was typical and I believe it. This place is incredible and I think you would love it here. The jungle is big. The river is big. None of it as big as the insects. It's not as primitive as I thought. Our little hotel overlooks the river and has hot water and a good selection of beers. Right now I'm on a terrace outside my room that is shaded with a palm-frond roof. The sun is murder here. The roof, of course, is home to lots of species that drop down to keep me company. The town is very strange. It's got three faces. First there's the sleepy, shabby river town with stalls selling unlikely kinds of fish and fruits. Then there's the remnant of old rubber money--decaying mansions and a funny old opera house. Then the new stuff, tacky pre-fabs. The new stuff has a take-the-money-and-run feel.

Tomorrow I'm going to get a post office box here where you can mail supplies to us. The manager of the hotel says I'll have to bribe the postmaster. I'll tell you the number when I get it. I'm off to see how soon our boat will be ready. Take care of yourself and baby. Hope the Atta are thriving."

And then the tape would pick up later in the day or the next evening: "Hi Libby, it's dark now, raining like a shower--except the shower doesn't, the electricity is out....I miss you...."

Chapter 15

ANOTHER MARCH

"You don't necessarily get out of all this by going through the right steps." Nancy was over for dinner. Melissa was with Keith.

It was the end of September--a couple of days after the fruitless meetings with Sylvester and the personnel official.

Nancy was tossing the salad.

"You can get screwed any time. Let me count the ways," she said.

"Everything would be all right if I hadn't fallen in love." All right if I hadn't bucked nature.

"Listen to you, love? love? It's in the past. You have to deal with what's in front of you." She accidentally tossed a dollop of greens onto the kitchen floor.

"I'm still in love."

"Don't mind me. But even if lover-boy were here, you'd still need time off from your classes. Somehow I don't see him burping the baby." She swiped at the mess on the floor.

"Somehow I don't see myself that way either. I feel too old to be doing this, so out of it." I finished setting the little

oak table. In the center was a bouquet of zinnias--the last flowers that would bloom until spring.

"Well you aren't out of it. You're smack in the middle."

"I didn't mean that way."

"Libby, I did. Get with. The women on this campus won't stand for it."

"They have been standing for it," I said.

"Not when they hear. We'll sit in."

Sit?

Nancy was ready to raise a protest the next day.

"Well get together an ad hoc committee, we'll have pickets," she promised.

There's something about the very air of Berkeley, still, that carries the spores of civil disobedience. It was a fact that the occasional protester still picketed our proposed Strawberry Canyon lab site. The campus gives meaning to the term grass roots.

I said I hoped not.

There is a dreadful pattern to the protest game. An injustice is uncovered. A demonstration is organized. The controversy is ignited. The victim gets to play a major role in the fight for justice. Then, when the victim no longer needs redress, the policy is changed. I didn't think I wanted Nancy to be the head spear carrier. Me the sacrificial goat.

"Your private wishes are a non-issue," she said.

"T-E-N-U-R-E," I reminded her.

"Point. Good point."

"At least let me talk to Sylvester one more time--go through channels first."

"Oh shit, yes. Sylvester wants to help you out."

* * * *

Two days later the pickets started in the "free speech" area in the lower Sproul plaza.

But Nancy had nothing to do with it.

The whole thing was orchestrated by, of all people, Allan De Witt.

I discovered the marchers assembling on my morning walk. I was on my way home, on the swing down from the Blind School and through Sather Gate. I'd just come down Bancroft past the nice shops and the athletic fields--a little oasis where Berkeley looks momentarily upscale--and started to cross campus at the main gate. This area is always full of lingering humanity--baggy suited people with shopping carts full of purloined goods like tennis shoes or cd tapes, knots of pamphleteers, and so forth. But a real protest takes up room, displays visible organization.

I saw the group gathering around the big, shallow, circular fountain at the foot of the Sproul Steps (famous meeting place of

Libby and Todd, actually). Their shopping carts were full of placards.

Everything had been quiet on the campus all September except one contentious sit-in at the health office to protest against abortion. So any activity was bound to draw out the looky-loos and the local reporters. Not many people that early--but all the elements were there.

I drifted over to the crowd--entirely out of idle curiosity. The group was composed of mostly women students and teachers--a couple of faculty women acquaintances--including the mother from the Art Department. Then a young man who seemed to be in charge started passing out pickets from a pile already unloaded on the steps.

There were two or three different slogans.

"PARENTAL LEAVE NOW" caught my attention.

I didn't wait to see the rest.

What next? "FREE THE LIBBY TWO"?

Or be recognized.

I pulled my hat down and walked away with what dignity remained.

* * * *

I'd already scheduled another appointment with Sylvester for that very afternoon.

The air in his office--sub-glacial. Figuratively.

"I hear you have already taken matters into your own hands."

Sylvester was in his chair, making the church and steeple gesture, a bad sign and roughly equivalent to another finger signal.

I was wearing heels and the dragonfly pin from Todd. I kept standing.

I tried to explain.

He cut me off. "Therefore, I don't see where we can be of help to you regarding the issue."

I took another tack.

"What did you hear, by the way?" Maybe he hadn't actually seen the demonstration.

"Only that the Women's Caucus is heavily involved, have made a public statement."

He knew.

"I had nothing to do with it."

"Perhaps. But, your, um, high profile in this is somewhat embarrassing. We would have preferred to keep your adventure with Dr. Duncan, and your subsequent pregnancy, more of a department matter. In any case, it's out of our hands, now," he looked genuinely regretful. And I believed him. He took a lemon drop. Whatever his management style, he had deserved at least one more chance to deal with this without the rest of the campus in on it. (How many chances? Nancy had asked.)

I tried to explain again. As far as I could piece together the whole thing had been a mistake, I told him. I'd talked to Lars Waldheimer innocently--once. Lars had apparently mentioned the subject to Allan De Witt--and De Witt, on his own, had written a letter to the Women's Caucus. Without consulting me. I said all this very quickly.

Sylvester looked at me blankly. Then he zeroed in on the classic double bind strategy.

"My," he said, "you should be very honored that your male colleagues are so quick to rise in your defense."

Oh, just so, I thought, this is a mess and I'm a shrew for not being grateful and flattered.

"The good news is," I offered brightly, "it will all blow over in a few days--you know campus politics."

"Perhaps." He added, "We would also have preferred that it would have come at a more appropriate time. By the way, I hope you'll have new material for me soon on the Atta."

I told him my revised paper was almost ready for publication--although without the data I had anticipated--that Margaret was helping me with the final editing.

"I'm so glad to see the two of you working together," he beamed.

I couldn't get out the door fast enough.

Talk about missing your guess--parental leave was not exactly campus politics, it was sexual politics. And like the issue of insects on the march, it did not blow over.

* * * *

"So I said to him: 'just what about a baby's birth schedule strikes you as inappropriate?'"

"You didn't."

"No, Margaret, of course I didn't."

The second day of the protest dawned hot--the last fire of Indian summer. Nancy and I were in our usual mid-morning spot on the Terrace, watching the pickets circle below on the lower Sproul Plaza.

Margaret Huffaker was with us.

She was dressed in her "sit in" clothes--although we were still deciding whether to join or not. At least I was. What was touching was that she had on special sneakers, a starched pair of blue denims, and a tie-dyed tee shirt. So earnest and studied.

"What you do," Nancy said, "is you go down there and introduce yourself."

"I feel like a fool."

"Fool or not," Nancy said, "it would be unthinkable for you to let everyone else fight your battle for you."

But it wasn't just my battle any more. After a few phone calls, we had begun to sort out the larger truth about the protest. The issue of parental leave for Dr. Elizabeth Despars was the most visible part of the platform. And that was legitimate enough as it went. But there were some other issues. Lots hotter, lots more important. One of the members of the Gay and Lesbian Rights League had adopted a baby--she was also being refused leave. Leave for adopted children. Leave for homosexuals. Also on the agenda was the question of insurance coverage for homosexual partners.

If the protest were successful, the administration would have to negotiate openly on these policies. Lots of people might be affected.

The number of demonstrators had tripled overnight. The folks of the previous day, teachers and students, were back. The members of the gay and lesbian clubs had their banners. They had been joined by the irregular "locals"--people who hung out in Berkeley for the sole purpose, it seemed, of providing bodies for Save People's Park and like movements. It was a Friday, too, so casual passers-by stayed around until it was time to begin the week-end. It isn't a real party in Berkeley without a cause.

I saw Lee Chiang lurking about on steps up to old Sproul Plaza. I hadn't seen him since the Army Ant crisis. So where was De Witt?

Nancy started back in on her pep talk.

"Like it or not, you are involved. Management is already pissed at you. No sense in alienating both camps."

"Think of it as an opportunity to get things out in the open," Margaret added. I wasn't sure exactly where she stood on these things, but I knew she wanted the best for me.

There was a new center of activity gathering over by Zellerbach Hall, at the far end of the plaza.

"Hot damn." Nancy has something like 220\20 vision, so we waited for her to tell us what was up.

"Hot friggin damn," Nancy repeated. I didn't think Margaret could see much of anything as she's very nearsighted--I could make out some crews with videocams coming down a walkway from Bancroft Ave.

"There's De Witt down there." She pointed. "Shepherding the press." Nancy shook her head.

"Two valences ahead of everything." I said.

"He's in charge."

As the group moved closer we could see that De Witt was simultaneously organizing the media show and handing out bottles of mineral water.

"Honestly, you'd think he had advance notice about the weather," Margaret observed. We were a little impressed.

"What do you suppose he has against me?" I wondered.

"He's doing you a favor." Nancy said.

I said I'd enjoyed about all the favors I could stand, thank you. Yet, I had to admit that this was different, and something about him was different. I decided he had started to change after the army ants. Chiang had joined De Witt.

It was all too public, social, much.

The best thing to do would be to forget all of this high profile activity and crawl back into my old shell. To be able to close my eyes a moment, open them again and--presto chango--be back in my safe, invisible boy Second Instar--anywhere but here.

"You'd better get your ass down there and protect your interests"

By the time we got "down there," De Witt was holding forth like Carrie Nation, a champion of human rights, behind the information table. He made a show of introducing me to everyone as though I were his personal guest. Exhibit A.

He was solicitous. He gave me water.

He arranged for me to be interviewed by Channel 11.

I still have a tape of us that day. We are standing in front of the retaining wall below the terrace. The wall goes up to about a foot above our heads, and above that is the rod iron fence around the terrace itself. The sun is bright. The jasmine vines on the terrace railing are moving in the wind. I look alert and healthy. De Witt looks happy. Then the camera gets just a head shot of me and a reporter in aviator sunglasses.

He asks what my husband thinks about all this. I tell him the baby's father is out of the country. (This was not a lie.) Does my husband work at the University?

I'm single.

So he asks me if I believe the taxpayers want to support leaves for single and homosexual mothers.

The "want to" part threw me. I hadn't been able to get together a reply when De Witt whisked me off camera. Good.

After the interview, I retreated to some chairs near the Women's Caucus table. De Witt and Chiang and the reporter went to find Sarah, the adopting mother.

The day began to seem not only hot but positively burned around the edges.

I looked for Lars but did not see him. This was De Witt's show entirely.

Nancy shouldered the Public Relations. She started greeting the committee leaders and thanking them for showing up in support. Margaret sat beside me and watched for a few moments and then she got a "partner" poster and joined the conga line. The group was noisy enough, but they weren't chanting or singing--maybe they hadn't found a unifying theme, maybe it was too hot.

As the demonstration moved into full swing, everyone started coming up to pat the baby--to "bond" with the baby, read its aura, guess its sex.

Margaret returned and offered to take me over to where Sarah was with her new baby boy.

"Oh, the Anti-abortion group is here," she added.

"And?"

"They are talking about staging a counter-demonstration."

What did this mean?

She continued. "They don't like it that you aren't married to a man and Sarah is to a woman."

"I thought they were in favor of protecting babies," I said.

A tall, black woman in running clothes was sitting over two chairs. "That just goes to show it's about bodies, not babies. It's about rights."

Rights, not right and wrong, I thought. From the outside, sexual questions had seemed formulaic--on the order of calculus, but solvable.

From the inside. Too complex.

At the very beginning of the Second Instar--the big question for everybody is to have sex or to not have sex.

Then to find someone to keep having it with at least long enough to start a life.

Then to keep having it or not.

Then to have a child or not.

Or it can get more complicated.

At the beginning of my pregnancy, I'd been so concerned about legitimacy--about the fact that Todd and I weren't

married. Or that he was still married--to someone else. But the onus of that went away--I guess, with my mother's consent: the baby was of the family.

Social acknowledgement: my family, my friends, and anyone whose business it was in the department accepted the fact that Todd was the father. They also knew that he was separated, that the relationship with Janice was not quite over and might not be, that the two of us had formed a new kind of "primary" relationship. This was the umwelt, so to speak.

And the baby herself. By the time I could feel the baby kicking and moving around with a life of its own, legal technicalities were absurd. She was real. I was the mother. Todd was the father. It might not be legitimate, but it was true.

But not for the pluribus unum.

I wasn't ready to justify my sexual and reproductive behavior as a National Issue. Or a universal right. I was ashamed anew, and I wanted to stay out of sight.

Jesus! What had I done? How did I get caught in this photo-event-cum-circus? I wasn't a good test case. I was a horrible test case.

Leave the personal humiliation aside.

Leave aside that the high moral ground was so far away I couldn't get there from here. All one thing to have your snow-white academic scientist a martyr to parental leave. Quite

another to have a knocked-up hussy looking for an undeserved hand out. Brazen slut and all that. Unbearable.

The worst of it was that the pro-family people might try to make the whole women's movement look ludicrous. Roe vs. Wade all over again. Here was the Women's Caucus championing the maternity rights of a common tramp.

Imagine the Movement fighting for the not-at-all-established rights of a woman who was careless enough to get pregnant, stupid enough to not to have an abortion, and unlucky enough to be temporarily without her mate. So much for purity of instinct. I was worried sick about ending up being a liability to my own sisters.

My sisters and sympathetic males, however, were, for the moment, unfazed. They were happy there was a father. In Sarah's case, they were happy there was a father figure. The issue had attracted an enormous amount of interest. Everyone but me was intoxicated by the justness of the cause.

Margaret: "You'll feel better if you come and see the baby."

We skirted the marchers and went into the cool shadows of the arcade beside the U.C. bookstore. The baby was swaddled in an undershirt and diapers on a blue infant seat--the kind that doubled as a car carrier. He was very young, about two or three months, with deep olive skin and delicate features, even for a baby.

Sarah sat beside him, fanning him with a large Thai silk fan. She was about my age. She was a frail beauty, as they say--I'd always thought so. She worked in the library, a research specialist. I'd seen her every other month or so for years. I'd never really spoken to her--only seen her--heavy glasses, hair like a Pre-Raphaelite maiden, long, full skirts shushing the toes of her ballet slippers--through the leaded glass doors that protected the rare books.

All that quiet and then a child.

I later found out that her partner was also known to me--a ruddy, brisk woman who teaches field hockey. Unlikely parents of a Cambodian orphan.

And I wanted them to do well, to have a chance. I wanted Sarah to. She deserved six months to get to know her baby, to rock him, to forge a language between them. She would go back to work and work for the U. for her allotted twenty-five years. And when she finally retired, he'd be grown. Six months was all.

I borrowed one of the signs and stepped into line. All around marched an assortment of the people that babies turn into: male student intellectuals with banded hair, extra-large black-and-neon t-shirts, oversized tennis shoes, earrings; middle-aged women with flowered skirts, crimped, silky hair, halter tops, crystals and multiple earrings; breathtaking body builders, shirtless; girls in cut-offs and studded tank tops,

straight hair and single, dangling earrings; grandfatherly professors with virgin ears. Our cause.

When Nancy came following up behind me later with a big bottle of chilled water, I asked her what was next.

"We don't do anything. We don't have the ball."

* * * *

The mail that day contained the second tape, the last tape from Todd. Although he had been gone about a month, the tape had been mailed weeks before. They had spent a week in Manaus, then proceeded up the Rio Solimoes to a station for dolphin research and then gone on to the Von Humboldt Center--the fighting bee research station.

I listened:

"Hi Libby, I still miss you. I'm sorry about the phone call the other day. But I'm glad you are all right. The phone has been out of order up here, but they tell me it will be back in service sometime soon. Everything is expensive--fifteen dollars for a tube of sun block for Rhoda. They are generous with the food at the station--they are very nice about the fact that we are prepaid and all. But other supplies are iffy. TP. Stuff like that."

Here he stopped the tape to talk to someone.

Then. "I'm back. It's about midnight now. We have landed at the dolphin place. Home base still according to plan. We'll stay here a few days, though, because they aren't ready for us upriver. I know you are curious about the dolphins. So am I. We are supposed to go out tomorrow to see them."

He picked up the narrative the next day.

"Hi Libby. We did see the dolphins. They are rose and grey. Very handsome creatures. Just the kind of spirits to screw unsuspecting Indian maidens. One of the boat hands told me that he was fathered by a dolphin--meaning, I guess, that he was illegitimate. The question of why salt-water animals here in the middle of the continent is up for grabs. I like the tilting continent, Amazon-running-backwards version--more later. You must come see."

The narrative picked up again on September 17:

"We got to Von Humboldt on schedule and our gear is here--most of it.

"I've talked to two people who have actually seen the reds. You'll love this--worth seeing, but maybe not worth going to see. Only because of tribal resentments against outsiders. As we thought, there are two different possibilities for what species the reds may be. The Brazilians go for Oecobius civitas. The Americans like to think the reds are Uloborus republicanus. I still think we are right--Theridion saxatile.

"No one is going to mistake this place for the Maui Hilton. But that's just the kind of briar patch we like. Hold on while I dislodge another blood-sucker.

"I really like getting mail from you--write often. Write every day. Before I put this in the mail I want to tell you I love you and am thinking of you and the baby often."

(I include this part in the record to remind myself that, up to that time, there was every reason to believe in him.)

That was the last tape from him ever. Mrs. Wheeler got one more letter from Rhoda. I went faithfully to the mail box each day for the next month, checked at the department office, called the numbers in Brazil. Nothing. It was as if he had disappeared at the ends of the earth. Only a large silence from behind, as Nancy called it, the Banana Curtain.

Chapter 16

THE WEDDING

October is the month when California is most unlike any other place. October in California defies age, it keeps on dancing. While the rest of the country has turned on the electric blanket and assumed the spoons position with winter, California still sprawls on top of the covers. Mornings are the color of milkweed flowers and insects are still venturing far from home. That October was no exception.

Even though I have never been to a football game in my life, I love the football Saturdays at Berkeley. The air will be luminous and warm. People hurry around dressed in blue and gold. Bands are marching. Then in the afternoon, everyone disappears into the purple shadow of the stadium for an ancient ground-war ritual ripe with symbolism. The bands become a sporadic thud-thud. Roars can be heard from the crowd. This continues until the warm dusk. Then begins revelling in the streets.

On a Saturday in late October, I was listening to the pre-game rally going on in the stadium up the hill and watering my house plants--enjoying the football festivities in absentia.

When De Witt came to the door, my first reaction was to worry about the Atta. Even though we had grown much friendlier after the army ant crisis and the personal leave campaign--we weren't to the stage of casual dropping-by. The last time he had surfaced on a weekend morning, army ants had been marching on the lunch rooms on Cyclotron Road. But he was wearing a big smile, and his green eyes sparkled with delight.

I told him I was just about to head down to the lab.

He appraised me briefly--the hair in a scarf, the maternity shorts.

"You look quite good in shorts for...." he said.

"I was going to change clothes, De Witt."

"No hurry, no hurry," he said. "In fact, take as long as you need. Waldheimer doesn't want you down there for a while. Really, I came to stall you."

"Is something wrong?" We had nearly lost another colony that week. The ants had come into mating time, but everything got confused for them when the queens couldn't fly. It was awful, mass carnage and the usual cannibalism. A portion of the workers survived, but not the queens. That meant three gone of the eight sub-colonies we had formed from the big insectary. Only five left, and they were ready to fly any day.

"Nothing wrong, in fact, we have a surprise for you. But you have to wait until it's ready." De Witt said.

"Gee, and not even my birthday. How about some sun tea?"

I brought it to him on the porch.

"By the way, some other news, I got a phone call yesterday...."

The word slipped out of my mouth before I could stop it:
"Todd?"

"No. I'm not sure that any news is good news from that quarter. How long has it been now?" De Witt sat down in one of the wicker chairs and put his feet up on the railing carefully--as though he were considering time itself.

"Almost a month. But you know how it is, communication in foreign countries and all that." I stood at the end of the porch, picking yellow leaves from the ficus tree so that he wouldn't see my face.

"The mail is slow, but the phone works both ways. Haven't you tried to call him at Von Humboldt?"

"Yes, I did, a few days ago. They said he had gone upriver on an expedition to the Friendly Reds."

De Witt pulled his feet down one by one, set his glass on the railing, and wiped off the moisture with his napkin. I kept my face turned away.

"It's just plain bad manners not to keep your team members informed. But what disturbs me is how it's worrying you."

I nodded. "He'll turn up, I guess. I just hope everyone is safe. The good news?"

"I got a call from one of the Regents...." He let this important fact settle. "They are now alleging that they have been sympathetic to our cause all along. They've put pressure on the administration to negotiate. You're going to get your leave. So will Sara."

That was really fine news. All during October the demonstrations had continued, but we saw little progress.

I went over and gave him a hug. A first. "Can't say I'll miss walking around in a circle every Monday and Wednesday," I said, "although it's been good exercise."

"Indeed. Just one other thing. They are also asking for an investigation into the Cyclotron Road fiasco."

"Well, that's all right. It was an unfortunate accident. But we didn't do anything wrong--we suffered the most damage."

De Witt stood up and leaned out over the rail. For a few moments he watched a large flock of birds going south over the bay--a flying, wedge-shaped drill team.

"You didn't do anything," he said quietly, "but I did. I really wanted to expand our scope, tag the worker elites to see what role they played in the queen cycle. To do that kind of study, to take the research in a different direction, we needed more colonies. Adequate space."

"That is a terrific lab site." I said grudgingly.

"Was. I didn't think we'd get the space if they knew what was going on. But everything in that building had been top

secret all along, so it wasn't too hard, with Lee's help, to get the project approved--just another confidential operation. We forged a few papers, unfortunately."

It was my turn to sit down. I put my hands on the baby, partly to ease the tightness, partly to calm my anger. Of course it all made perfect sense. The day Nancy and I hadn't been able to get any information; the oddball presentation at the Baton Rouge conference; the collusion with Lee Chiang. Malcolm had said De Witt was an empire-builder--hell, I had known it all along. But he had made an audacious, duplicitous move. And it had proven very costly.

The temptation was there--to just start yelling at him, berating him. But I didn't want to upset the baby any more than she already was.

"You aren't implicated," he said. "Nor Waldheimer or Pardee. In fact, I don't think they care very much about the doctored paperwork--they don't like my politics."

"So, what you mean is, the administration is going to make a deal on the parental leave question, and on insurance for homosexual couples, to save political face. But at the same time they will discredit you--take you out of action--by pinning you with forgery?"

"Yes. But, you see, I'm guilty, regardless."

"Still if you knew you were so vulnerable, why didn't you keep a low profile?" After all, I thought, if he had just wanted

to help me, he could have bloody well left the ants where they were in the first place. I was shaking with fury but listened to his explanation.

"Quite a few reasons. It really started the day the army ants escaped. I always thought you were slightly obsessive, the way you babied the Atta. But that day, when you suggested that I stomp on the army ants, I was horrified. I believe that was the first time I had thought of them as alive--out in the open and big. Then, too, although you are unlikely to believe this, I did want to help you. And...."

"Your relationship with Lee?"

"Yes. Very important. Malcolm had been talking to me. It was time."

This did not make everything right--did not bring back the ants or restore all the time wasted--but it was good enough. I had played the big part in damaging my own career. He had helped me salvage it.

"So you're telling me that you're a changed person, a new leaf? I'm willing to forgive and forget."

"I apologize." He said.

I smiled.

"For trying to move the lab, for the army ants, for bringing Todd Duncan out here."

"I accept--all but for Todd, that's not your fault." I poured him another glass of tea.

"Also for misjudging you. I took you for just another myopic, grim functionary--committed to the narrowest career. Actually, you can stand up for yourself, be an outcast if you have to."

"And I hope you are no longer a grant-seeking, insect-murdering gadfly, content to march over whomever is in your way."

"Fair enough," he said.

"I'll get ready."

* * * *

When we entered the lab, Waldheimer and Pardee were there soft-cheering and waving their arms. Because of the wedding canopy. The entire area above and around the ant crates was hung with a fine, shimmering parachute. It was suspended from the roof and anchored to the old catwalk, tacked to the walls, and secured at the bottom with tape. A perfect mating tent.

Waldheimer explained that when the males and new queens tried to stage a mating flight now, they would not be crushed against the wire catchment because there was no place to fly.

The idea was that we would take the top panel off the nests and give the ants some sky to mate in--anything to let the bride queens have some space. He figured we could carefully remove the newly-fertile queens after the males and the rest of the colony

went back to normal; we could set up housekeeping for them in the empty crates. We would all play bridesmaid to the ceremony.

I was thrilled at the chance of saving the ants, and touched that everyone had gone to such trouble. But I was nowhere near as tickled as Waldheimer and De Witt. They dragged me here and there showing me all the features of the canopy, how they had provided for all eventualities. And it looked like it was none too soon. Already, we could see through the plexiglass that the ants in three of the nests had made elaborate tunnels to the surface. We only had to wait.

Pardee put his hands on his hips. "I sure wish...."

We all looked at him.

He started to stammer. "That, that is, well, that Todd could take pictures."

A dull thud in my heart.

Pardee scooted in behind his computer and turned on the radio. He never went to the football games either, but he had the radio tuned to the Cal game, just in case they won. Waldheimer and I went inside the tent and removed the sliding panels from the tops of the nests that looked active. The ants, no longer contained, began to spill out over the sides of the crates like children on holiday. Up close to the ants, you could hear, just under the sound of the radio, a high, faint, chirring sound from the excited workers. When we had everything set, we went back outside the tent, took rolls of masking tape and

patrolled the boundaries of the canopy, making sure everything was sealed and secure.

We were at this for the better part of an hour when there was a touchdown or something and Pardee uttered a loud "yes."

But it wasn't the score, of course, it was the ants. He was watching Colony #5--where the ants were beginning to swarm. Waldheimer and De Witt adjusted the lights.

We took up our posts.

The wingless nurses and soldiers began running about in a state of high excitement. The sturdy, winged males rushed out into the open. Then the big queens emerged from the tunnels, their transparent wings glittering. Seconds later, the first queens began to fly. Straight up they went, into the bright planes of the wedding canopy.

Time slowed. The virgin queens seemed to hang suspended, shining like pearls--white against silky white. Their wings rippled like satin trains. Fixed in that moment, the queens seemed to hold all the promise and desire of the colony. They were aspiration, freedom, triumph, potency, and satisfaction. Poised and ready--white stars for a moment.

And then the males rose beneath them, slowly at first, and then more quickly as they found the perfumed trail that led to a chosen queen. As a tornado of males would overtake a queen, she would pause a moment to mate, and then resume her flight ever

higher. The remaining males would regroup to continue pursuit. Each queen--each single star--became a streaming galaxy.

As I was watching this, I realized that De Witt had drifted away, and remember catching a glimpse of him going outside with someone, but then was drawn back into the wedding. As the queens reached the top of the canopy, we began to worry that we had made a mistake. The queens, in the wild, would fly up higher and higher, eventually outdistancing the still-eager males. But our ceiling was too low, and after a time the queens were stopped in their skyward movement by the top of the tent. As soon as they had to light, they were mobbed by all the males that had not yet mated. Since the queens were completely covered with suitors, we couldn't even tell if they were safe.

As we were watching to see if the queens would manage to extricate themselves and get back to the nests, De Witt came back in.

Doug Huang was with him.

It took several moments to sort out the dislocation I felt. What was going on? I hadn't seen Doug since he had left with Todd in late August. I hadn't expected to see him for three more months. What was he doing here? Where were the rest--Todd? Rhoda? De Witt motioned me over to the office.

In the natural light, De Witt's face was colorless and I could see that Doug looked scared.

"Todd Duncan sent Doug, here, and Patrick Moran home. They arrived yesterday."

"It was to save money," Doug put in, "we didn't do anything wrong."

I couldn't see two plane fares home was saving money, but I waited for De Witt to fill me in.

"The story is that Duncan did get the U.C. research station going--but the territory didn't include any places where there might be Friendly Reds. Before he started actual construction, he wanted to go upriver and visit some secret communal spider site," De Witt said.

"That would be a special excursion on Yale's money, then." I said as calmly as possible, so as not to alarm Doug.

"Yes," De Witt said. "Our students were technically only being paid to do our work with tropical ants."

Two beats. "So, where is Rhoda?"

Doug said nothing. He looked uneasily at De Witt.

"Rhoda is with Todd." De Witt's voice was carefully uninflected.

In the awkward silence, Pardee appeared at the doorway. He was searching his favorite yellow shirt for stray threads.

"Libby, Waldheimer would like you to come back. We need to free the queens."

"He might have told us himself," I said, following Pardee back into the formicary.

Back with the ants, it was easy to see Waldheimer was right. The queens were not going to be in any shape at all to continue unless we got them out of the crush. We untaped one section of the bottom--went in--and Pardee taped it up behind us. We carefully waded in among the ants, crept up the catwalk, and I held the stepladder while Waldheimer located a queen, extracted her from the others, and brought her down. Then, we would search the canopy for another cluster of balled up, buzzing activity, to find another queen. We'd carefully place each queen in an empty crate and cover it with gauze for protection. De Witt, Pardee, and Doug helped by locating queens that were still at large. We worked for a long time before we had a fair number of the queens to safety.

Then, as quickly as it had begun, it was over.

The bright creatures began falling to the ground, covering the cement floor, the catwalk, the crates. They dropped with a soft, clicking sound--the males, spent, the remaining fertile queens limping off in search of homes.

When the sun was setting, we went outside and sat on the wall beside the weedy back lot. The streets were full of people leaving the stadium. The warm wind buffed golden sky.

I was free to wonder what had become of Todd.

* * *

The disturbing quality of the information from behind the Banana Curtain should have been enough to jolt me out of the Moon Instar, but was not. I'm not sure of exactly the moment that it became absolutely necessary to take a plane trip to Brazil. But I know the day. I was in the lab.

We had brought all five colonies through the mating dance. But the ants in Colony 4 were not doing well. Some were dying, or committing suicide, some trying to worship an already-dead queen, some confused and self-grooming. The queens in the other colonies were safely sealed up, busy laying new eggs. The next big job, since the Cyclotron Road site in Strawberry was no longer possible, was to put the old formicary back together. But we had to wait for new money to accomplish that. I had run out of things to do.

The mystery of Todd had been haunting me all along, of course. We had still heard nothing from him and November was half over. No phone calls, no letters, no rumors, even--nothing from him and nothing from Rhoda. The rest of the Atta group was mini-concerned--De Witt especially about the protocol. But, everyone hastened to reminded me not to be alarmed, that such things were not unusual. Todd and Rhoda could be miles from anywhere, they said, off in search of the Friendly Reds. And so on and so forth.

I wasn't exclusively worried about their safety. I was consumed also with the fear of betrayal. If he had wanted to go

back-packing into the woods, why not take Doug or Patrick. Why Rhoda? What was up? I'd lie flat on my back in the bed in the early morning, feeling the comforting weight of the baby on my pelvis. Stare at the picture Todd had taken--in the midst of the dragonfly mating when the Moon Instar had first begun. Try to sort through his motives. If what I had seized on as love in the first place had been only a casual fling for him--why hadn't he set me straight? And then, it was hard to believe that he had been lying in August. He said he'd be there for me when the baby came--and he seemed to mean it. If he had wanted out, if the Brazil trip was a way of disappearing from the situation, would he have been so cowardly as to go to Brazil leaving me holding the assumption that we were committed, that he was going to be Daddy? It was almost as hard to contemplate the process--if that was what had happened--that took him to Brazil, let him forget about me and the baby altogether, and struck him in lust or whatever with Rhoda. Darwin's theories could explain it, but female human reasoning couldn't. Until I heard from him, I had no clue.

There was lots of helpful advice that I followed dutifully. Contact Yale to see if they had heard anything, keep bugging the authorities at Von Humboldt. Notify American Express. Everything.

One day I even called Janice Duncan. If Todd had written anyone, it might be Jake.

There was no sense in being chatty or coy. I introduced myself and asked her if she had heard from Todd recently.

Her voice was forced-cheerful and upbeat. No, she hadn't.

She didn't ask who I was, so she knew, and she wasn't going to get into it.

I asked if we had any reason, in her opinion, to be concerned.

She answered quickly: "Oh no, you'll find that this is his way. When he's in the field. Lots of letters for the first few weeks. Then nothing at all. He shows up six months later wondering why everyone was alarmed. Really, he's fine."

The way she said this made me feel like I was being some kind of hysteric nut or something. But I knew her manner didn't have anything to do with how she felt. Here was a woman who put her dignity first. Whether she missed him and was sick with worry, or hadn't given him a thought all fall, she would put on a good face. Deny before the world and repent behind the rocks. And she wouldn't divorce him as long as she could maintain the fiction that all was well.

I didn't have the heart to mention about Rhoda.

Doing everything, under these circumstances seemed a lot like doing precisely nothing. A lot of network and paperwork and no footwork where it counted.

By the time Doug and Patrick had been home three weeks, it began to seem reasonable that someone ought to go down there and check.

But who? De Witt would have been the logical choice. But he was under official University investigation. Pardee could have done it; he was single and had little to do around the lab just then. But he scarcely left his apartment except to come to work and was afraid to fly. Waldheimer was keeping the Atta alive. I mentioned my concern to Dean Sylvester, thinking he might respond to the idea of Todd squandering funds on an unauthorized jaunt and he was only amused: "You seem to think, Libby, that the University has a job classification set aside for people to look up wandering Professors in foreign countries. We'll go through official channels in a few weeks."

The truth was, none of them was overly upset about Todd. They wouldn't worry until it appeared their money was surely being squandered. I was the one who needed to know just what was going on in the Amazon of the heart.

* * * *

Change isn't just something that happens, it has a natural pattern. But not the pattern we'd expect. Momentous events don't necessarily produce momentous changes. Let's say a big blow hits. We are stunned, recover, can't see the source of the

blow. In the absence of any better information, we go on behaving as before.

Then, the external situation alters, often imperceptibly, some minor mistake, some setback, some small loss. Suddenly, it's impossible to go on the same way.

The puzzle is how an insignificant event triggers the final realization. A woman is beaten regularly by her husband for years and decides to leave him one day when he forgets to feed the cat. A man labors decades in a job he hates and quits one day because his usual parking space is taken.

In these cases, the external situation seems almost the same, but the big forces have been falling into place for months, years, centuries, eons. Then, you know, just one individual lapse, one little alteration in the environment--food for the cat, a cloudy day, a shortage of water, an unexpected traffic jam, a shift in the angle of light--and the change breaks forth like the earth separating along a fault line.

* * * *

On that day in November, then, in the lab. The ants in Colony 4 were restless, miserable (I imagined) and full of confusion. The workers who were still working had spent all morning digging a long tunnel from the brood chamber down to a remote corner of the cage. Ah, busy, industrious ants. They

seemed to have decided, in their way, to commit major resources to this project. A large group of hustling, busy-body nurses led the dig, and soldier ants mustered up along the way to lend support and "protection."

Moreover, the plan had, or seemed to have, an important purpose, ant-wise. When the tunnel was completed, a new crop of workers began hollowing out a large royal chamber.

I watched all this with particular interest, budding hope. Maybe they would get organized enough to re-start the reproductive rhythm in this colony. As far as I could determine, the ants had no other reason to build this chamber, no reason to try to expand. The group was just barely large enough to support one laying queen. That queen had already been selected and was comfortably installed in a chamber at the back of the nest. The workers had "accepted" her but they kept eating the eggs. They bit the heads off the larvae. Now they were behaving as though they were about to install another queen. What were they up to?

They carefully prepared the walls. Then a delegation of courtiers carried one of the spinster queens down to the new chamber. All this was right in front of me. Pomp. Ceremony. A large number of Atta, Colony #4, acting purposefully, in concert, toward a common goal.

No sooner had the Spinster Queen been deposited in her new castle than another group of ants--or maybe even the same group, I didn't have them tagged, so I didn't know--anyway: the new

group kicked in the tunnel and left the Spinster Queen and her attendants stranded. I know it's hard to imagine ants stranded in dirt, but it's true.

All that concentrated work for nothing. All that purpose frustrated in a moment of forgetfulness.

It was heartbreaking. The waste time before and after. My heart was set. If Todd and Rhoda were in danger, someone needed to get them out. If they were just infatuated, well, I needed to know that, too.

* * * *

"She doesn't want to hear the reasonable side." Nancy said to Margaret. She swept a load of books into her huge leather bag and jiggled it to arrange the contents.

I had stopped by Nancy's office to pick them up for the victory meeting of the Women's Caucus.

Margaret swiveled around to face me. "Have you thought what you will do if you find him, with her? Whatever will you have to say?"

I shook my head. I didn't have a plan, couldn't think that far ahead. Like tumbling into bed with Todd, falling in love with him, and the obsession to have the baby, at some point all other options had disappeared from the horizon. Anything was better than staying in Berkeley and not knowing.

"We can empathize with your worry and curiosity," Nancy said, striding out the door into the hallway. "But I have to say this. I'm not for a stinking minute trying to change your mind. I just need to get it off my chest."

Margaret and I fell into step behind her.

It's a terrible thing when you see your best friend suffer for you. She would have rather seen me jump off the Bay Bridge than chase after Todd to Brazil.

She lowered her voice so I could just hear her. "You are totally fucked to go down there right now. You are seven months along. The lab needs to be put back together. Your ants are dying. You signed your agreement for spring academic leave, but taking off now might blow it. Your gynecologist is here. Your friends are here. And, you have an important paper to shepherd through publication--last time I looked. Someone else can do the job."

"I'm going to meet her classes." Margaret said.

Nancy gave her a look, then stopped in the middle of the path. She put her arms around me. "Can't you just accept this without going down there--sort of a scientific acceptance? What if he's with Rhoda? The better 'flutter rate' as you put it. If by a naked chance, he isn't, you'll look like a fool, too. You can only be hurt by this."

"I'm already hurt." I said. None of the conditions that "allowed" me to go to Brazil needed to exist for me to go. This

was the purest act of passion--continue until the trains stop and then get out and walk. There was no way to not jump. It might have been the worst possible response to the weakest stimulus. I couldn't tell, didn't care.

We continued on under the tall pines and across the creek. The fog was moving in.

"I spoke with Reggie," Margaret said. "He's expecting you."

"You'll be careful." Nancy said.

"Out of my hands."

* * * *

On the way home I saw an aging honeybee. Her wings were almost shredded from wear. She was struggling to free herself from some debris surrounding a flower bed of browned marigolds. I thought how the apis economize their resources. The young bee girls tend the nest, stay inside. As the honeybee matures, she is sent out in the big world to forage for the hive. The oldest bees range the furthest. These bees seek out the last, distant nectar of the autumn blooms. This bee was alone and ragged. She would probably not get back to the nest--and she would not be missed. Life was certainly very short and maybe unfair. Love impossible. I couldn't wait to be gone.

Chapter 17

BEELZEBUB

The river of the interior is endless. The rain forest broods over the wide, dark, shining water like eternity. You have the feeling that you can follow the waterways back to the dawn of time.

Perhaps I would have been better prepared for the Amazon if I'd been to the Congo.

(I have never been to the Congo, but one of the books I picked up at Campus Books from the English shelf was Conrad's Heart of Darkness. It remains a great favorite of the English professors.)

Perhaps not. The Amazon isn't even a river, in that sense, it's this huge, flooded, middle-of-the-continent.

The basic game of life is different.

Like this: despite the fact that I'm an entomologist, I am mainly familiar with insects and life cycles that have seasonal order. My field work has been, in temperate, cyclical, ecologies. The equivalent of civilized wildernesses. Berkeley, the south islands of Japan, even the Kalahari--all are

landscapes, however primitive, where human beings can turn their skills and their brains and their opposing thumbs to advantage.

Animals and insects, too. In temperate climates, the seasons are great levellers. Spring gives every creature an even start. A fortuitous or industrious species that can get a leg up (or six) (or eight) has a survival advantage.

In the Kalahari, "fittest" species were those who could make opportunity, when the rains came. Their annual mating shows are graceful and planned.

Not so, in the jungle.

In the jungle, the rain is not a signal for mating, it's a constant.

The creatures that survive there are those species that can reproduce and keep reproducing, day in and season out--and spew out the most individuals at a time.

In Brazil, I came to understand a new kind of life force. You see, in my work in science, I'd always taken the jungle into account as a matter of geography, but I'd never really understood its nature. What it had to say about sex and survival.

Its savagery.

Of course, you can't be constantly puttering around with ants and wasps and such without thinking of the kinds of places they thrive. Their tiny scale, for just one thing, makes you wonder how the world must feel to them. We, in our settlements,

reduce everything to human size. If there are big trees, we cut them down and plant little trees, and so forth. If we build things up again, tall buildings, say, we fit them out so human beings can climb them and walk around in them. Not so the ants: a 200-ft. tree and the lawn mower in the front yard grass represent the same kind of obstacle. So all along, I was always peripherally aware of how the earth feels from the mini point of view.

While this mini point of view is the condition of all the insects in our civilized world, it becomes man's view, too, in the jungle.

We have little survival advantage there: big brains and opposing thumbs are good--but we are big and clumsy. And we simply don't reproduce fast enough.

And we are lazy.

In the Amazon, little is best; the insects rule the universe. Flexibility is a bonus. Think of the fluidity of an ant colony. They breed prodigiously.

So, if I'd flattered myself before that, that I understood how the rain forest ecology really operated, I was quickly disabused. Nothing had prepared me for the deadly, protracted, dark, hot, daily struggle for a tenuous existence that was the real jungle.

All my work to that stage had been with imaginary jungles. Perhaps I felt this all so keenly because there I was

pregnant with Lorna, alone in Manaus, and desperate for information about Todd.

I arrived in Manaus after a long, uneventful, and somewhat squalid plane flight from Rio. The Tropico Hotel was near the airport, out of town a bit. I had Reggie's address in the town, and some other contacts just in case. But I was too tired to face anything. I was hot, and my feet had swelled. I took a taxi, hoping the place was actually "luxurious" as Todd had said.

While I was getting registered and all, I let it be known around that I was a scientist from Berkeley. Of course I got some pretty funny looks. Even in the states, some people think women scientists shouldn't go about in public seven months pregnant. In Manaus, after the surprise came a touching concern. The concierge ordered special water sent out to my room and advised me to be careful.

I wasn't too worried about the water--usually, if one took sensible precautions, one didn't get sick in foreign countries. His concern, and the concern of others, was more interesting because of what it said about his attitude toward human life. I couldn't decide if the solicitousness was because I was an Americano woman and a university professor, or because this was a Catholic country, or because human babies were more precious in a place where they didn't always thrive.

During the sort of minor flurry about getting me comfortably settled, I got to practice my Portuguese a little. This was not simply tourist vanity; I had a goal.

But I won't bore you with vocabulary-by-digit. Except the important stuff.

Three-quarters of an hour later, I was ushered into what was called a bridal suite--two nice-sized rooms fitted out with the Amazon version of the latest in civilization--early Las Vegas gothic chiquita banana. The walls were panelled in fake light Brazilian mahogany; shadowbox frames held prints of parrots and tropical fruits; the gold polyester spread was embroidered with gold medallions; the furniture was curiously oversized. The best part was a spacious bathroom with a big tub. (Not many days later I would long for that tub.) The room was fringed by a wide balcony overlooking a slope to the river. The room was hot, so I dumped my luggage and went to sit out in the shade of the steamy afternoon.

I remember that particular afternoon--the enchantment. In spite of what had appeared from the air to be a rather disappointing town, the lowering jungle, I was glad to be there. This feeling had nothing to do with the facts. It had to do with the air, the sky.

The air slid over you like a baby's caul. Close and soft and intimate. The sky was close and bent low over the jungle. The cumulus clouds piled against the edges like pillows on a bed.

The smell of rain. In the near distance, a small shower washed the dark treetops.

I sipped on my agua pura and watched the sky: a shrimp-colored sunset deepened into orchid over the black presence of the rainforest. I waited patiently for what I hoped would be "the word" to get out among the help.

Rule One When Looking for Your Lover: the locals keep track of everything. No phone to the bush? Ask the gardener.

Soon enough, the maid came to the door behind me.

"Siesta, Señora?"

I smiled and said I was waiting for the room to cool, offered her some water.

In this way, I was able to find out what the drums knew about the Berkeley expedition.

Of course, it didn't sound good.

And I had misjudged the effect of the baby.

At first she talked freely. She spoke some English so we struggled along with the pleasantries. She had lived in Manaus since her marriage. Three children. Her family was in Brasilia. She had a sister who was married to a man in lumber, at least that's what I think she said. She had known the other scientists. She had cleaned their rooms.

She told me that the Americanos had stayed for a few days and spent a lot of time in the bar with some Australians before they--the Australians--left to go up the Rio Negro. She didn't

know where the Americans went. There was a rumor that one of the Austrailians had died. Some of our group had been back recently, she added. I figured that would have been Doug and Patrick on the way home.

I asked her if the tall girl and the two boys were with "the one who died", or if they were the ones who told her.

The woman shrugged. Maybe she hadn't understood the question. Or maybe she didn't want to talk about that.

"El Señor Duncan?" I asked, "Do you know him?"

You can picture this. In the same way that every man on the place would have a secret bond if a stunning rubia bombshell had been through the town, so women know their men.

"Si," she giggled, her face wreathed in smiles. "Es muy guapo."

The nature of bi-lingual conversation being what it is, I asked the corollary question. "Did he have a room by himself?"

Yes! This room. Then her face fell. Yes, he had...pero, but....

It's Mister Duncan I'm looking for, I explained, hoping that would encourage her.

But she had put this all together. The American scientists, O.K. The handsome professor, O.K. Now she was suddenly very ill-at-ease. She looked hard at me and then at my abdomen.

Seven months, I said.

She smiled again, pro forma this time.

"I hope he come back."

She excused herself and hurried off.

From this it was possible to conclude that even though Todd had slept alone, at least some of the people at the hotel had linked him with Rhoda.

I looked out over the groomed tropical garden that sloped down to tennis courts and swimming pools and then a river. Two huge luna moths fluttered just inside the darkness of the trees. I took this as a sign.

Todd was not the dead man. If Todd had been that person, his moniker of recognition would have attached itself to the rumor. He would have been known as the handsome dead man. I almost wished he was. It would have made everything easier.

Also, the evening had deepened and the room was now just warm--fine to go inside and bathe and sleep.

* * * *

Typical of this loco Moon Instar, I hadn't the vaguest idea what to do next.

But Margaret had been sure that Reggie would be useful. So I called him and he said to come over.

I made a detour to the Tourist Information Bureau--I had some idea that I might get close to the fighting bee station on some kind of sightseeing boat. The bureau had plenty of maps of

alligator-watching cruises and luncheon-in-an-Indian-village excursions--but nothing that got me where I needed to go. They gave me a map of the town.

After a couple of hours of casting around, it was a relief to have a temporary destination.

From the map, it appeared that Reggie Parsons lived only a few blocks from where I was, so I walked. My feet were balloons in no time. His apartment was on the second story of a three-floor building remaindered from the colonial days. It had once been a good address, apparently--it was on the same street as the old Opera House. Now the neighborhood was blighted and empty and it was hard to tell where the gardens ended and the jungle began.

The streets were vacant but for a few young children, very dirty. Not only city-poor dirty, but also coated with itchy dust from the lumber mills. A sticky, yellow talcum permeated the city.

The outside of the building was covered with broken and creature-inhabited stonework. The frieze announced 1897.

Reggie Parsons, too, was a relic of better times. But a nice one.

He led me down a long, narrow hall to the front parlor. It was decorated in vintage "great white hunter"--entomologist style. Field entomologists who collect "trophy" insects are called "baggers." He was prince of them. Truly, of all the

universities and museums I've ever visited, his collection was most unusual. I estimated he would have to spend one month a year just dusting the collection with antibacterial powder. His stunning specimens were arrayed across two walls and up a narrow stairway to a special loft where he kept the best.

One-of-a-kind. The biggest pair of popsicle-blue morpho moths. Gigantic dragonflies--wing spans of twelve inches--creatures that might have been netted in the Jurassic Era. Rainbow luna moths. One giant shocking lavender beetle. Colossal fire ants. Pretty stuff.

After the collection was duly admired (that's what they are for), we passed on to the topic of science in the Amazon. Since he already knew why I was there, I guessed the small talk was to size me up. Another good guess was that he didn't get a visitor every day who cared to talk about insects.

I was nearing a protein crash, though. A furtive glance at his dingy kitchen on the way in led me to suggest lunch out, on me. I squeezed back into my shoes and we went around the block to an open-air cafe.

When his beer came, Reggie began to tell me about the projects he'd worked on in the early days. Most of the money then was for jungle medicine. The big problem initially was to save the cash crops, and after that, to keep the people from being eaten alive by the insects. Scientists were sent out to the rubber plantations or the coffee farms.

He had been a part of one or the other of these teams for a few years in the 'fifties and 'sixties. He'd spend a year at U.T. and then eighteen months or so in Central or South America. His wife had left him in the 'sixties because he was never home. It was on his third visit to Brazil that he had met Margaret. They would not have made a bad-looking couple. She might have been a little taller than he. Now they wouldn't match so well.

Reggie was slight and stooped and barely concealed a limp. He had boyish features set in a weather-beaten face. I placed him at ten years older than Margaret. But he was spry enough, as far as sizing up went.

I tried to steer the conversation to Todd and the communal spiders. As soon as I mentioned the Friendly Reds, he got interested. From what he said about them, I more or less sorted out where he and scientific research had parted company.

"I saw my first friendly reds over twenty years ago. They are all over back in that area. Or they were. We went in by plane, to, ahhh, survey the area for a subsidiary of Standard Oil International. The company had got title to some land and wondered if they should plant something or try cattle. Probably cattle. I was still in vectors."

The thing was, he continued, the scientists concluded that the land wasn't presently usable for anything. For the usual reasons: it wasn't close to a road or a river; once the rainforest was cut and burned the soil was good for only a few

years; the terrain was too varied, one part too hilly, another poorly drained. The soil would compact badly under cattle hooves. Reggie was in charge of insects.

Another drawback to the project: the property was already inhabited. The Indians had seen few white people, so they were guardedly friendly at first.

"They were a sorry lot." Reggie winced. "The state of nature is not pretty, believe me."

He didn't sound like a radical environmentalist to me. But I don't know why I expected he would be--Margaret hadn't said anything about that.

He went on with his Friendly Reds story.

A few males of a tribe that lived some distance away ("I don't think we ever got anywhere near their village," he said) used to stand around in the clearing. No one spoke a word of their language. ("This was a while back, before the cult of the Amazon.") As the clearing grew larger and larger--expanded to accommodate more housing, equipment, garbage, etcetera--the attitude of the Indians changed; they grew anxious.

They seemed upset and made brief, threatening speeches.

This would prompt the company officials to give them razor blades or aspirin so they would go away for a spell.

"One day about three of them just pulled us bodily into the trees--me and another chap. I thought maybe we were being taken

hostage," he grinned and shook his head. "But they wanted us to see the spiders.

"As far as I know, the scientists haven't decided what species--maybe Theridion. The Indians had an unpronounceable name for them. Opi-whapi-something. I believe the hidden valley of the webs was sacred to them.

"We had all thought for some time that spiders were potentially communal. A Mexican species had been studied that constructed a common egg sac for the young. But this was the real thing--automatic sterilization, cooperative foraging and entrapment, public brood care."

I was kind of surprised. Todd had talked about the rumors--people who had known someone who had seen them. There were a few publications about the Reds. But I guess I assumed the "superorganism" aspect was overdone. Scientists, too, see what they want to see.

Reggie thought the friendly reds had evolved from a species in which the male exhibited the typical low arthropod profile. But, instead of the female devouring her mate during copulation, as does the Preying Mantis, or directly after, like the Black Widow and other related spider species, the "red" queen tosses her consort to the barren worker females for dinner. The workers, then, have the satisfaction of completing the reproductive event, even though they are prohibited from

breeding, themselves. Thus spiders, usually so solitary, had become a cooperative superorganism.

He had been touched by the sight of the friendly reds. "I hope you get to see them," he said.

He drank his bottle of Antarctica for a spell in silence. Our lunch came. I had some river fish, he had a thin slice of very tough steak with some hot salsa and some spicy rice. As he tried to cut the beef I thought of the cattle ranch in the forest.

"So what happened?" I said.

"I lost the taste for it," Reggie said. "I couldn't do it any more."

He finished that beer and ordered another.

He told me he had indicated in his report and to anyone who would listen that the area was not suitable for cattle or plantation workers. In addition to the usual mosquitoes and stinging ants and so forth, the elements were perfect for two species of cattle botfly and the swampy parts were full of a particularly devilish breed of jungle moth.

"Papalomoyo," he said.

I shook my head.

"You see it in the oreja de chicleros," he said. "They come off from working in the gum groves. Missing an ear or something, you know."

"My report was disregarded. They never listen to the entomologists." He said this without bitterness.

"All of us were for show--we were the window dressing anyway. The company decided to minimize risk and go half and half--gum plantation and cattle, too. All of the cattle died and some of the people, and the enterprise was bust up broke in three years. The only way to tame the jungle is cut it all down and then bomb it with malathion."

"Exterminate all the beasts?"

He looked at me. "Huh? Oh, yeah. I quit teaching after that."

"Since then?" I asked.

"I'm involved in private research. Sometimes I do expeditions."

I filled him in on the Berkeley expedition. We talked about where Todd might be, travel in the country, the Solimoes and the Purus Rivers.

Finally he said: so how much money do you have?

I was a bit taken back, but I told him I had enough. Certainly enough to outfit a boat and go upriver a while.

"I wasn't thinking of that, exactly," he said after a long beat.

I took him to mean he was agreeing to go with me.

"I'm prepared to pay you," I said. I wasn't, but then what could I have been thinking, that he sat around waiting to reunite lovers?

"Ransom."

"What?" We had not a shred of evidence Todd and Rhoda had been kidnapped. I almost made the mistake of laughing.

"I can't be sure, you know," he added. "That's the m.o. sometimes around here."

Reggie daintily wiped up the moisture from beneath his bottle and signaled the waitress for another.

"I don't drink hard liquor until sundown," he explained.

"Wait a minute," I said. "What did Margaret tell you about Todd?"

He looked surprised. "Just that he and his assistant had vanished."

"Did she describe the assistant?"

"No."

So I did. Reggie's face reddened.

"And you came all this way just to...." He seemed unable to go on.

"That's it."

"Bloody nuts, I'd say. I hope they did get him, and roast him. She's a bird, though?"

"So they say."

"He might not be overjoyed to see you."

"Maybe not, I don't know for sure."

Reggie finished off his beer in one long gulp. "I'll take you anyway."

I looked around the street, quiet and burning in the siesta sun. Old buildings streaked with the memories of old rains. A few broad-leafed trees. The place wasn't any more immense than anywhere else. Every place is the same size. It just felt like an immense place, far from home.

"Can you make a torpedo?" I said.

* * * *

We found a boat right away. A yacht, really. Given the monetary limitations, and the sorry condition of most of the idle boats tied up at barges out on the river mud, I had visions of something out of "The African Queen." Not so. He walked me down to a dock hidden behind one of the official, waterfront buildings and proudly showed off the not-new, reasonably-well-equipped Chris-Craft cabin cruiser. Maybe thirty feet long.

Named the Thalassa.

The boat looked river-worthy--Reggie assured me he could get it down to the water. He was pleased with his find.

The boat had been seized in a drug raid and was available now, I supposed, to people who knew the right people. Things were looking good.

Before long, we had established a cautious friendship of sorts, the kind that forms when you have a limited time frame and an indefinite end point.

He spoke of pregnancy only twice. Once, when he suggested that I take the double bed in the main cabin and he'd take the front bunk--he apologized for the lack of privacy but mentioned my "condition." The other time he warned me and "the infant" about stepping in puddles of river water that seeped up through the plankway out to the boat. I noted that he, too, in a not pregnant state, wore rubber waders around the water.

The other thing--he never again questioned the wisdom of the journey. If he continued to think I was batty to want to find Todd, and I'm sure he did, he kept it to himself. He referred to them as lost: "If you're in the jungle you'd better be somewhere, or you're lost."

So, two days after we got the boat, Reggie picked me up at the public dock. "Did you get the money changed?"

"Yep. A thousand. This doesn't seem like much money--for ransom." I said jokingly.

"Well, it's all you can carry."

* * * *

I'm here to report the river is a strong, brown god. The river was low, still, at the first of November. You could see

the sucked-away undersides of the jungle, the draw of streams that fed into the clear, black waters of the Rio Negro. The surface of the water seemed placid, but anything that fell in disappeared quickly.

We headed downriver, down the Rio Negro toward the fork that met the Solimoes. What forest is left along this stretch is second or third growth--but mostly the shore is lined with sawmills.

At first I sat up on the bridge with Reggie. He gave me the canned tourist commentary on the river--the floating gas platforms, the logjams, the stilt houses, the many boats and canoes out on the river. But he was in a dark mood and preoccupied, so I wandered down to the little deck and stretched out in the shade of the awning and watched this astonishing, tiny civilization at the center of the forming world pass behind us.

An hour or so out of the town we came to the place where the two rivers run alongside each other for awhile, one tawny, the other black. Then we turned west and started up the Rio Solimoes.

When I was done watching the river and the villages and homesteads that we passed, I turned my attention to the jungle. At first the forest was only a flamboyant surface. Then individual objects began to acquire shape. The experience was not unlike suddenly noticing a pride of lions in the African distance, where before you had seen only the grassland. The eye

of the mind is like that: it has to hold on to an image for awhile, have a template of knowledge, in order to see a thing at all.

Birds, butterflies, winged insects first. Then little alligators on the banks. I saw a now-rare azure-blue morpho blinking through the leafy darkness, hollowing out a most precarious and beautiful existence in the absence of the one thing its color represented: sky.

Further. The abundance of life in the jungle was an encoded contradiction. There was an implied promise of eternal life. And yet each individual organism lived on the edge of death. All seemed to operate at a crisis level of adaptability. The jungle city is as remote from the plains of Africa as New York is from Bakersfield, California. The trees are as tall as skyscrapers, and a lot of important activity takes place at the top.

The animals of the jungle have evolved traits of showiness and immoderacy as eye-catching as a Broadway streetwalker--just to be noticed. The plain, scrabbling ground sparrow farm girl becomes, in the rainforest, the brilliant, screaming parrot hooker--leaning, leering, and teasing from a third-floor tree, red feathers cascading from a dashy tail, green at the breast.

What the tropical fertility promised with one hand, it denied in potency with the other.

Like the big city, there are few ways to make an honest living in the jungle, so creatures find other kinds. Life, you

sucker, the jungle seems to say, is dog-eat-dog. The chief means of support here is preying on the other one. It's a parasitic society from the spirochete all the way up the food chain. You have to live off something else, most of the time while it's still alive or just dying. The incidence of parasitic species worldwide is high. Predation constant and universal. In Brazil both are epidemic. Plants eat insects. Insects lay eggs inside plants and animals. Insects eat plants. Animals eat plants, insects, and each other. Insects eat animals. And the bacteria work overtime to keep all this matter recycled into a towering mass of life forms struggling for a patch of light.

I fell asleep into a dream that everything in the jungle was pregnant, too.

* * * *

When I woke up Reggie had pulled the boat into a little inlet.

"Pretty soon we'll see some real jungle," he said mock-cheerfully.

Already the insects were thicker.

They were swarming.

"That's good," I said, "but let's get out of here."

"We needed to eat."

This was not a simple "gee, I thought we'd have a picnic" kind of statement. He was indirectly reproaching me for being asleep, for not making lunch on time. He already had the food out, so we fought off the mosquitoes and ate as hurriedly as we were being eaten. Reggie was proving to be a hard worker and an exquisite planner-over-a-bottle-of-brandy, much like Malcolm Evanson in the Kalahari; he was also in a hurry.

Lots of reasons for this: he liked to stay on schedule, he wanted to get back home, the bugs. He wanted to get this over with as soon as possible. So did I.

I guess you must be thinking that the bugs shouldn't have bothered either of us. True. But they were a considerable nuisance.

Colossal.

Back on the open water the bugs weren't so bad. Signs of civilization grew fewer and fewer and then disappeared for long stretches. We reached the Boto Research Station--our first stop--by dusk.

Unlike the outside world, the people there were concerned about Todd and Rhoda. As a pair, it seemed. Reggie talked vaguely about disappearance and kidnapping. I didn't dare ask about any romantic involvement. They acted like I was Todd's sister or co-worker. And since Reggie didn't correct them, neither did I. They offered us a trip out to see the dolphins, but Reggie said we had to be off early. They gave us the name of

a guy to look up, Pororoca, who claimed to know where the Friendly Reds were. He owned a hangout up the river. As I fell asleep in the gentle roll of the river, I wondered if it was not too late to turn back.

Chapter 18

THE MALAISE TRAP

Two more days of chugging, breakdowns, various stops in the serious heat brought us to the Von Humboldt Center. The compound was well established, with many Europe-in-the-tropics-style buildings and meeting halls in addition to the sprawling collection of scientific installations. As part of its role as a center for ecotourism, it was surrounded by various villas and tourist camps. One of these was the Villa Roca, a bar-disco-hotel on the other side of the river. It belonged to Pororoca, the man we had heard gave tours to the Friendly Red Spiders.

We had dinner in the big meeting hall. The resident scientists were uneasy that Todd and Rhoda had not returned. One of the main reasons was that they were familiar, also, with Roca Expeditions--not recommended. You can't miss Pororoca, the owner, they said, his right ear is missing. He ran a few shoddy boats upstream, but his specialty was folk healing and occult practices--Macumba, Umbanda, things like that. His money came from the local disco. They showed us a crude, mimeographed sheet listing the visitor attractions one could book at the Villa Roca.

Spiders was not among them--but communal spiders was hardly likely to be a big draw.

The Von Humboldt was also filled with teams that had closed up their jungle observation for the rainy season, and three men had actually been to see the Friendly Reds. I listened to their excitement with trepidation. "As long as you're here, and looking for these people, you should see the web. It's really worth seeing." But was it worth going to see?

Yes. Because the other thing that was crystal clear at Von Humboldt was that Todd and Rhoda were a pair. Reggie and I were shown "their" bungalow. They had obviously planned to return. Papers and files and the tape recorder were neatly stacked and wrapped in plastic. Luggage to return to the states. Even the lightweight tents and camping gear were all there. And my letters to him, unopened. By the time we left the scene and returned to the main hall, I was shaking with anger. A new beast had entered the zoo, the fiercest of all, the dragon of betrayal.

Everyone agreed that Reggie should look up Pororoca first thing in the morning and make plans to go to the Reds' location--alone. It was a long hike, hard going.

He allowed as how that might be a good idea.

I gave him a kick under the table.

Later, on the boat, he said: "No reason to go all the way up there, after all. You look like a bad case of jungle fever."

"Of course I'm going." As the books say, hell hath no fury....

"By the way, Libby, what's that pin you wear all the time?"

* * *

In the morning, my anger was as dark as ever. But the cosmos was indifferent. The day sparkled like the beginning of creation. Heavy night rains had washed the jungle and the bright water pooled on the broad leaves and made diamond chains along the lianas. The rainforest shimmered with benign promise.

The hotel was not what I had expected.

The establishment was the main compound of an old European plantation. You approached it through a wide avenue of limestone pavers. They were cracked and bucked and pieces of jungle had repeatedly forced up tufts and mounds of vegetation that had been just as insistently hacked back. Between the pavers were stubborn tufts and hillocks pushing through. But it was impressive, nonetheless. Immediately surrounding the main structure were wide terraces; graceful colonnades, arches, statues on pedestals--or at least the remains of these, the lianas had found most of it and the grounds gave one the sense of some ancient hanging gardens. This was not the look originally intended.

The main buildings were almost pure Italian Renaissance. A statement. A monument to reason, optimism, and good government. Everything else about the place signalled nature's own disorder.

We went in through the large splintered door. The threshold was travertine and the foyer was faded pink marble. A group of locals was playing an out-of-date video game--one of those table-top pong things--over at a table by the corner. They didn't pay any attention to us.

Reggie went over to the desk while I looked around.

I wandered out to the back where a spate of rusting trucks held back the jungle. A couple of beat-up jeeps were painted a mottled turquoise blue and had the hotel logo. The expedition roadhead, I guessed.

Reggie found me there.

"Let's go back," he said.

I gave him a ten pound look. Here I was all ready with time and money and ready to do some business. Surely someone wanted to take us to the Reds.

"They say that Roca has gone into the jungle. They don't know when he will be back. He books the trips."

I scanned the fringe of trees. The jeep tracks led to an opening in the forest. It looked well-travelled.

"Let's think," I said, stalling for time. "We could spend the night here."

Reggie looked dour.

"We've got the money." I meant this as a joke. Maybe there was another chink in his resistance.

"We could get a room. Two rooms. Have a real bath." I thought of the luxurious tubs at Manaus.

"What will we do all day?"

Reggie was an on-the-move kind of guy. We knew that.

"Play pong. Drink cerveza. Clean up the boat. Take a hike."

He pondered this.

"They can't be going far in those jeeps," I argued.

Reggie nodded. He went back out to the desk. In an hour we were settled into large, shabby rooms in the north wing. The bathrooms were enormous. The water was down the hall. We decided to use the daylight to scout around.

We left the compound on the road I had spotted that wound back into the jungle. As soon as we were off the hotel grounds, the jungle floor was almost free of undergrowth. It was like a well-swept house. Anything that dropped from the trees was quickly claimed by the busy hordes of insects and microbes that kept the life of the forest recycled into the canopy. The path was marked by posts tacked with reflective strips.

"They use this trail at night." Reggie observed.

That would have been easy enough to do. The ground was smooth and clear, tree stumps had been removed, you could follow the markers with a flashlight.

About mile back in, we came to a clearing where there was a group of houses and outbuildings. They seemed deserted.

This seemed about the right time to turn back. Reggie and I hadn't actually discussed it, but my sense was that we had intended a little stroll, not a protracted investigation. The trail continued on the other side of the clearing, however, and seemed to be as well marked as before.

"How are you doing?" Reggie asked.

I told him fine. This was true. My feet had swelled to fill my hiking boots painlessly. The only thing to remember was not to take off the boots.

"If we get stopped by anyone," Reggie said, "just give them all your money. I don't believe we're supposed to be on this land."

We skirted the clearing and continued up the road.

A little further on, I started to notice flashes of light through the darkness on the right. A river. I judged it must empty into the Solimoes below the hotel.

"The road follows the river." I said. "That way we can't get lost."

Reggie gave a short laugh. "It doesn't mean a damn thing."

The jungle was almost featureless--at least on this first sweep through. Reggie was already familiar with the everyday mysteries of the plants and animals, so, while I was curious

about the epiphytes and the ant-plants, I resolved to keep moving.

From time to time we'd see a run-down cluster of shacks and palm-frond huts in a clearing. It was hard to imagine that anyone had ever lived in these places for any amount of time.

One thing I did notice was the webs.

While the floor of the old jungle was bare and clean, the areas around the clearings was choked with secondary forest, a few saplings and lianas, mostly dense undergrowth. Along the tops of the bushes were spider webs, large and closely-woven. They were not orbs, but rather patchwork in appearance.

I pointed one out to Reggie.

"You'll see that," he said absently.

The webs indicated either very large spiders or we were in the territory of the friendly reds. I hoped it was the latter.

A little before noon, the wind began to come up and it started to drizzle. My heart tightened. We had our rain gear, but it occurred to me that Reggie was supposing we would take shelter in one of the shacks or huts. I shuddered involuntarily.

Reggie moved close and took my hand.

"As I live and breathe."

He was staring at the path up ahead. Out of the gloom emerged a handful of round-headed, nearly naked Indians. Post card Indians. Yanomami impostors in costume. They must have

painted their faces and donned their battle jewelry for our visit.

Following them was a man in fatigue pants and a Hawaiian shirt. He came to greet us with a wide smile, also fake, missing an ear. Pororooca in the flesh.

"Sorry you had to come out here!" He apologized.

"We didn't mean to," Reggie said, accepting his handshake. "And where are we?"

"My place!" Roca beamed.

He made a great to-do about me, first offering me his arm and then putting his arm around me. He smelled strongly of Aqua Velva.

I eased him off. "We're looking for Todd Duncan."

His smile faded and his eyes cut to my belly. Then he recovered his suavity. "Of course, and they're here. But first, come in until the rain stops."

For every jungle species that actively hunts, two more lay passive traps. Camouflage; sticky, sugary secretions; the pitcher plant, the Venus fly trap; the list is endless.

So it came as no surprise to find ourselves in the very clutches of Roca the pimp. His house was roomy and comfortable--probably the house of the manager for the old plantation. It looked out over a portion of the river that had flooded inland for a wide swath and was filled with ghost trees. It might have been a grove of some kind once. Visitors would

find it impossible to navigate to his dock without knowing the passage through the gaunt, half-submerged trees.

The fact that he was located on a large tributary stream meant, too, that he was well supplied. Reggie accepted an Antarctica and I had a chilled diet coke with a glass and ice and even a slice of lime. (You'll forgive me for obsessing on glasses, lime, ice, and bath tubs, yes?)

We had gotten caught in the first of the rain. My poncho had protected most of me, but my boots were damp. Roca, ever gracious, brought out a thick beach towel from a resort in Rio to wrap around my feet. He urged me to take off my boots, invited us to dinner at the hotel.

Reggie came to my aid. We couldn't trouble them, he said, he just wanted to know how far to the spiders and how soon could we get there.

Roca launched into an evasive explanation of permits and the Indian problems and restrictions by FUNAI, the agency to protect the native lands. He made it sound like the paperwork would take days. I couldn't figure out whether all this was really necessary, or he wanted a bribe, or Todd had asked not to be disturbed in his tryst with Rhoda.

"What I'm asking," Reggie broke in, "is will you take us today?"

"Tomorrow," Roca said. "Tomorrow, I set it up. Dancers, drinks on the dock, everything. I will take you myself."

"If you can do it tomorrow with all the fancy stuff, you can do it today, can't you?" Reggie said.

"You want to see the magic spiders," he suggested.

"We want to see Dr. Duncan." I said.

"Not so easy." Roca shook his head in infinite regret.

"Fuck this." Reggie said.

"OK, OK," Roca spread his hands mock-helplessly. This was apparently the signal that he was willing to be bribed.

Reggie mentioned a figure. Roca looked doubtful.

That was about all I could stand of the South American face-off.

"You can certainly appreciate the fact that we don't want the child to arrive while we are searching for its father. I'm persuaded a man of your qualities cares about a little baby."

Roca flinched. He went into the kitchen where the tour-guide indians waited.

A ways off in the jungle, the monkeys set up a little howl to announce that the rain had slackened there.

He returned quickly.

"The rainy season is late this year," Reggie observed.

"Good. It's arranged. We go up by canoe to see the magic spiders. Today."

Five assistants reappeared.

"Very few people can go here," Roca intoned. "You understand we need permission of the gods. This is a sacred journey."

What this was, instead, was an exclusive tourist expedition. I remembered the brochure. Exclusive excursions by appointment. I'll bet. This kind of excursion would appeal to the very rich. A specially-booked and privately-arranged pilgrimage to the sacred misterioso haunts of the Wonder of the Amazon, the communal spider superorganism. Only for the most daring, discriminating, flush. People who came here had long been already done with private helicopter skiing in the Chilean Andes, had tracked Panda in China, knew unpublicized cave paintings in the Pyrenees. They would come here to the heart of the river for a few days, eat gourmet fish, have an arranged session with local hallucinogens, and a make a trek to the magical webs.

It was bad enough being treated like a turista on a pleasure cruise. Much worse was that Todd had actually run off with Rhoda. Unbelievable that he had chosen this place, this charade, to hide out in. Reggie was already out on the porch. I limped after.

"This is where we have the water-blessing ceremony," Roco informed us as we went out on to the dock. Things looked rather prosperous. The canoes were nearly new, bright blue fiberglass--not so much canoes really as rounded kayaks. Each canoe took two persons. The seats were cushioned. As I stepped

into the canoe, the natives tittered. Water displacement, right. I was given a paddle, but my official Indian paddler sat behind me.

Our four canoes set off up the river. The tide was coming in way down the rio, and even on this tributary far, far from the sea, the natural flow of the river seemed to stand still. It felt like we were making good time--but then I didn't have any way of gauging the speed, nor did I know how far we had to go.

In less than an hour we came to another set of elaborate piers and floating docks. The piers and ramps were covered with corrugated tin roofs against the storms. The paddlers secured the canoes, performed a hurried ceremony on a little stone altar at the edge of the clearing. Roca broke into a short speech about sacred ancestral sites. All of this was a quick version of a well-rehearsed performance. Either Roca wanted to preserve the illusion that we were just another pair of paying customers, or the guides wouldn't go ashore without the blessing, or it was just force of habit.

The forest that we entered there was pure. It was a gallery forest, Reggie said--climax rain forest--untouched. The ground was so clean you could eat off of it, he joked. Only a few epiphyte ferns and ruby red heisteria blossoms clustered around the tree trunks. The canopy was still wet from the rains, water dripped off the broad leaves in the darkness.

Reggie came up beside me and took my hand.

"Can you keep track of where we are?" I whispered.

"We're going north right now," he said. "We should be at the crest of this hill soon. Then downslope to another river."

I had been only dimly aware that we were climbing.

Of course another river. The land was drowning in rivers. But why hadn't we paddled up this river if it was closer? Not only were we on an annoying make-believe tourist excursion, it was a snipe hunt, too. I was getting tired and desperate. The baby was a tight, hard ball in my stomach. I started to ask Reggie about the river and then the effort to think about it at all became too much.

We had walked about fifteen minutes when the flora began to change.

We crested a little ridge and started down into thick, mature secondary growth. Here the path was single file and the locals took the lead, hacking away the underbrush that threatened to engulf the trail daily. Evidently, this area had been cleared long ago, then abandoned to the jungle. The forest grows back in time, but it is a different forest altogether.

We went about two hundred yards almost tunneling through the tall undergrowth before a large, shallow canyon opened below us. It was a beautiful spot, a vale, really, with shoulder high, lush tropical ferns and garlands of lianas. The sun broke through in silver splashes.

Reggie thwacked the caked mud off his boots.

"Where to from here?" he asked.

"If you want to see the magic web, we can take you now. Your friends are up ahead at the lodge." Roca said.

"The lodge."

We went back up through a tunnel of vegetation and veered right up the ridge.

In a few minutes, we were at what looked to be part of the old plantation--an annex of sorts built on a large platform. It was surrounded by stands of Brazilian bamboo. The Camponotus mus, bamboo ants, raised by the noise of our group, had started up an eerie, metallic, whirring sound, like the rattle of a snake.

The noise would have announced our approach. But, when we got up close to the platform, there were two people lying in hammocks, reading.

Roco hailed them.

Todd swung out of the hammock, strode to the edge of the porch, and stopped.

"Well, Libby."

Chapter 19

THE FRIENDLY REDS

The sight of the vale of the Friendly Reds haunts me to this day--will always. The fact that the spiders exist out there today, singular and miraculous, attests to the intractability of nature. It testifies to the fact that any species, under the right conditions, can alter its fundamental structures of reproduction, cast off millions of years of stable evolution, in order to improve upon the economy of survival. Love, in the scheme that includes the communal spiders, does not count at all.

Standing in the dirt of the camp clearing, I was suddenly hot. All the time travelling in Brazil, of course, the weather had been sweltering. Hot was the given, the default, the umwelt. Taking a leaf from Malcolm's old style, the British-in-Africa style, I had refused to consider the heat. The insects could be heartily disliked, but not the heat. Until that moment looking at Todd on the porch. I was suddenly blistering hot, exhausted and crushed by the heat, and Lorna felt like a ball of sun in my stomach. Burning.

I tried to make the best of it. We made a touching tableaux in front of the jungle lodge. Rhoda unstrung herself from her

hammock and came to stand behind Todd, putting her arms around him. We were on the ground: me, Reggie, Roca, and the absurd tour guides--gazing up.

The moment coalesced like a lava flow merging into the ocean; my anger began to crystallize. The rage that had propelled me out of Berkeley, to Brazil, up the Solimoes, sizzled. I had no desire for a scene in front of an audience, but I would talk to Todd.

"Can we take a walk?" I said.

Todd nodded and came down off the platform. He indicated a path that led off just beyond the compound.

I cradled the baby in my hands and started after him. When we were into the trees, I caught up with him.

"What the hell is going on?"

"Just what it looks like." Todd said.

"I'm not accustomed to making snap judgements about surface appearances, so why don't you tell me exactly what it looks like."

"I am here observing the communal reds, and my assistant is here with me."

"All right, then tell me what it is."

Todd did not answer.

"Look, " I said finally, "I'm not leaving until I get you to tell me the truth. Not an answer I have to deduce myself. Not a

message I'm supposed to read by sign and innuendo. Your responsibility in this--from your lips."

Some electric blue parrots screeched above us in the canopy. Todd pretended to be absorbed by them.

"I just can't believe you came here at all," he said, gazing up. "Everything would have been fine if you had stayed home."

Oppressive heat, boiling water coming from my pores.

"When I didn't hear from you for weeks, when no one knew where you had gone, after Doug and Patrick came back without you two? What did you expect me to think?"

"I expected you to trust me." Todd said, working himself into a state of self-justification.

"Trust you?" How could it be that this was all my fault now? "Look the other way, you mean?"

"Be smarter about everything. Lighten up."

Lighten up? Lighten up? I was shaking with fury. The volcano bubbled. To keep from exploding, I said: "Is this the path to the reds?"

"We can get there from here."

"I want to."

"O.K. But it's slow going and you look tired."

"Such touching concern. Lead on."

We crested a little ridge and started down into thick, secondary growth. The trail was single file, and Todd went ahead to clear the way.

So I couldn't see his face when he said: "This was inevitable, anyway."

"What was?"

"Rhoda says men in the middle of a divorce are usually confused."

"She did, huh."

"She thought you knew that."

"So many smart people. I thought you'd be smarter, too. I thought you'd be wiser," I stopped while he cut back some creepers that blocked the way, "than to believe her. I know some men run amok when they are let loose. But you had me, and the baby, and we were counting on you. You didn't have to."

We went on.

"Well, I did."

"When did this happen?"

"Right at the beginning. She was sunburned and I was helping out, and...."

What could I resent? It was the same power of sex that had brought us together. Cutting both ways. I resented it.

We went about a hundred yards almost tunneling through undergrowth as high as a house. Then a large, shallow canyon opened below us. It was a beautiful spot, a vale, really, with graceful tree ferns and garlands of lianas. The sun broke through in silver splashes.

And there was the spider colony.

In the first instant, I didn't want to look at it. I wanted to faint. Even the thought of the Friendly Reds made me sick and hotter than ever. They were indirectly the cause of it all. The evidence of things beyond understanding. I shuddered to see the gigantic, milky blanket that had invaded the little valley. It was an abomination, a horror. I held my stomach and tried to keep upright in the blazing heat.

Todd came to stand beside me. He reached over to finger my collar.

"You have your little dragonfly pin. Did you...." He was trying to placate me.

I moved toward the web forced myself to see the sight before us.

The web spanned the canyon. Bracelets of rainwater hung on the silk and sparkled in the filtered afternoon sun. It was yards and yards across in some places, running rampways into small trees, spanning gorges, rambling up the far hill: a cosmology of gossamer.

The web was like a giant spider metropolis. Highways of movement, tiers of clustered activity, webs beings constructed, repaired, drifts of workers, watchers, hangers-on. Swarming enterprise.

Awful. Beautiful.

No wonder the locals were protective.

No wonder Indian magic.

Up close, the web was like those we had seen in the clearing edges on the hike out to Roca's. It was tightly woven, like the webs of the grass spiders in the California chaparral or brushlands.

Every few feet or so the web would organize itself into a whorl-hole that led to the communal nurseries.

The spiders themselves were surprisingly small. They were a brilliant, joyous red. Hundreds of them raced nimbly over the network; they repaired a spot here, grouped together to sting a large insect there, wrapped prey for later consumption, sorted egg clusters in the vortices of the nest.

And they were clearly communal, not solitary. As the nestmates skimmed over the extent of web, they would pause in passing, touching each other with their palps, entwining the forelegs.

One adult was wrapping prey with two adolescents in attendance. As I moved closer to watch, all three were extruding silk.

Clearly, this rare species was successful as a community. So successful that small, webbed roads led off up the canyon to new communities, new frontiers, where the hunting was better and the population could spread out.

So it was true. The Friendly Reds might actually be social insects. Perhaps the evidence of mutation in a species that had been solitary since the beginning of time. Alone, one of these

tiny red spiders was an easy meal. But together, acting as one mind, one body, they were invincible. Or, at least they had a remarkable edge. A spider superorganism.

This was a splendid spot, a disturbing sight, a thing of wonder.

As I contemplated the web in the canyon, in its beauty and terror, complexity and simplicity, movement and stillness, my anger cooled, and hardened, and turned to fine red dust. Anger is impossible in the face of such big mystery.

I shifted slightly, and my shadow fell on the web.

The mothers began to thrum on the filaments of the net in unison--a warning to the younger ones. You could hear it.

And then I just felt the immensity of human isolation.

These tiny creatures acted together as one being--and the medium of exchange was communication. A superorganism.

We live so close together--yet the nature of exchange between us is competition--even between the sexes. But the forces that act on us are as large, as difficult to comprehend.

I needed to sit down. I moved over to a fallen log. It was alive with biting ants--dinner for the reds, no doubt. Todd took off his shirt and spread it over a rotting tree trunk. I sat down with a crunch. Todd knelt beside me.

"Libby," Todd whispered, "You know how you talked about your Moon Instar--how you changed and did things you didn't

understand? I think that happened to me--with Rhoda, maybe with you, too. Maybe middle-age crisis."

I nodded.

"And you can forgive me?"

"Yes."

"And we can forget this and go on as before?"

"No."

"Why not?"

"Because if I stay with you, I'll never find the truth."

I watched one bright little friendly red patiently spinning at a ragged edge of the web. "When I fell in love with you, I signed on for everything that happened--both anticipated and unknowable. And I got them--a child on the way, a damaged career, a changed life."

Todd took my hand. "That's why it's so important that we put this behind us."

I stood up, the ants had found me quickly.

"But we can't. Your action has consequences, too." I said.

"I know too much to love you any more."

Chapter 20

THE RETREAT SONG

I returned to Berkeley sadder and wiser, as they say. And not without heartache. Where the fires of betrayal in Brazil had raged, the scar tissue remained. I had move carefully through the landscape or I would bring back the pain in an instant.

For a long time each detail of my life glistened with memories. Short of large-scale geographical removal--such as moving to the antarctic--this is often the case. In my bedroom, the photo of Dragonfly Friday, the garden and the root beer bees, the patch of bay, the dragonfly pin still in a pincushion on the dresser--all left ghost-images in the pattern of recognition.

As we began to re-assemble the large formicary and the Oxford Tract began to look just as it had on Sun Box Tuesday, I was nostalgic, even, for the angst, for the intensity of sexual excitement. The ants resumed their rhythmic hum--content to be back at work, growing kohlrabi, tending babies, building tunnels, tearing them down, self grooming. They would not mate again for some time.

In the last weeks of pregnancy I'd walk up to the hill above the Blind School and stare through the fog at my grandmother's house. My job ahead was to carry on the ritual of mother. But

that didn't mean that I would ever forget the role of lover. I was in mourning for it--for love, and the loss of love. And for Todd perhaps, too. Even if he had not taken up with Rhoda, even if he had come back to be with me when the baby came, I was coming to understand that we would not have lasted. He was right about the fact that our child and my career would always compete with him for first place. The whole sequence of love and marriage is based on the right timing, the right rhythm. I'd met him too late--my life had already taken a different direction. The Moon Instar was a freak of nature.

One day, when Nancy and Margaret and I were sitting on the terrace, Nancy said:

"Maybe it would have been easier if you had stayed angry longer--or hurt or crazy."

"Maybe so."

Margaret nodded. "If she wanted to stay mad, she could think of how she would have felt if she hadn't gone down there."

"I'm just waiting," I said, "for life to return to normal, like it was before all this."

But what did I want? Life to go on just as before? What? Before we even made love? Before I got pregnant? Before the Amazon? Before the baby? Before the dragonflies? Before the beginning of the mystic Moon Instar? There was no back to go back to. No home again.

And just presently, no future. No use: I couldn't imagine a future that wasn't, like the past, impossible to immortalize.

The fog was creeping through the pine trees. The sound of fog horns floated in the misty air. I traced a dragonfly in the moisture on the table.

"Got to be careful what you wish for," Nancy said softly, "things weren't all that great. You were dying in that cocoon."

Margaret said: "The grief will lessen...."

"But it will never be the way it once was."

* * * *

The day in the jungle in the vale of the web was not the end of the Moon Instar, but it was the beginning of the end. When I got back to the lab at Oxford, Pardee shyly asked me if the Friendly Reds were worth going to see. Yes, I said, very much so. Worth it to understand dimly the immensity of the drive to procreate, worth it to see that example of the diversity of survival. Worth it to know what I needed to know--that I was bonded not to Todd, but to the baby. That in the rhythm of life and death, only one relationship had to endure.

All my life, people had been telling me that romantic love could last forever and was the center of life. The diamond ring, the romance novel, the once-in-a-lifetime-wedding. Or could come along at any point in life. The Love Boat, the go-go Granny. Or

if you weren't in love, you should be. And all that time, especially during the long Second Instar, I believed it. I scoffed at it, I tested it against Darwin, I theorized it away, but, deep down, I believed it.

Now I suspect that sexual love between a man and a woman has a more limited function. Not for a minute would I take anything away from the lucky couples who remain devoted to each other for fifty years. But for those of us who are not in that position, perhaps it's not necessary to keep on trying to achieve eternal romance. Perhaps we can gracefully get on with other things.

In Darwinian terms, sexual love is necessary and makes perfect sense during the prime mating years, to get mating started. In the long, sad time before and after, love is wasteful, dangerous, and often full of disappointment. We probably expect far too much from it.

Sexual love, it sometimes appears, is simply a handy device to bring together individuals who are ready to mate. Love is given to us to make a certain use of. Like knowledge.

* * * *

Lorna is now four years old. She is tall for her age, slender, and full of mischief. My mother and Anne believe she will be a beauty. For her sake and Charlie Darwin's, I suppose I hope that is true. But I don't discourage her from her already-

keen love of books and nature. When Melissa babysits, she and Lorna spend their time poking around the garden or concocting scientific potions in the kitchen.

Lorna has seen her father several times and has a nice relationship with him. The lack of a live-in father doesn't bother her--it's well within the range of normalcy in my circle of single mothers. I've told her as much as I can; I'll tell her more when she knows enough to ask the right questions.

Todd stayed with Rhoda for a while--long enough to get divorced from Janice. Then he moved on. I had given up keeping track of girlfriends when he married again, suddenly, last spring. One of his students. They had an elaborate wedding, from what I gather, and honeymooned in the South Pacific. His choice of destinations arose out of new information about communal spiders coming from the south sea islands. His life, like mine, a symphony about the power of habit, the push of necessity.

With the new wife safely in Rhode Island, he continues to spend most of his time in the Amazon, searching out Friendly Reds. In some way, I hope he finds what he is looking for. But I don't think that's possible. Just a month ago, when he was here, we went out to dinner--Lorna, Todd and I--to an Italian restaurant down on Shattuck. He'd been newly married less than a year--but he scrutinized the comely waitress like she might be "the right one." In the early years with Janice, he was trained

to monogamy, but once he jumped the track, his instincts have led him to always be looking for the next perfect opportunity to mate again, even if only in his imagination.

The one thing in my life that actually has returned to normal is the Atta lab at the Oxford Tract. By the time Lorna was six months old and I returned to work full time, the original formicary was reassembled. Again, the ant colonies were whole and connected; the ants were busy in the brood chambers, threading their way through the long tunnels with precious cargo, parading from the feeding site with their little leaf parasols. Humming with satisfaction.

When mating season came again, we were able to get very convincing data that the Spinster Queens were fertile, and that they did lay eggs, and that those eggs could grow to adults in the absence of a true queen. We had succeeded in demonstrating the viability of the Spinster Hypothesis. But with classes to teach and a baby to take care of, I didn't get the results published that year. I was turned down for tenure. Last year, finally, with a well-received publication, confirming data, and the help of Malcolm and De Witt, I succeeded.

During the time we were moving the ants, though, we made another discovery that suggested the creation of queens in the Atta could be altered. De Witt wrote that up, and the paper was of interest at many universities. Just after I was awarded tenure, De Witt moved on--to a better job. Both he and Lee

Chiang went to Yale to work (a stroke of irony). De Witt did not go on to do ant extermination, either. His new work involves introducing Atta sexdens to ravaged areas to restore the topsoil.

After all, I was sad to see them go.

Since De Witt's departure, I've been chief of the Atta project. As soon as the hiring freeze ends, I hope to persuade Malcolm to come back to Berkeley and work with me. He has some promising ideas about tagging worker eggs. Odd as it seems, I look forward to spending many years investigating how ant superorganisms manage the neat strategy of optimum reproduction.

In the meantime, I'm just another subject in the on-going human experiment of single motherhood. If Darwin himself were at some microscope-in-the-sky, I'm sure he'd be riveted by the spectacle of our species altering the whole direction of human evolution.

The number of solo mothers in my generation is large enough to represent a significant alteration of hereditary reproductive practice. It is as radical a departure from established human procreation as the Friendly Reds are from other arachnids. Large groups of single mothers banding together for protection and comfort seems more like bee-life than the one-man-one-wife world my grandmother knew. We could be in the process of evolving toward a superorganism. Or it might not work at all. I hope it

works for Lorna and myself, because this is how it will be, for us.

This spring, at the equinox, I'll take Lorna out for a picnic near the spot where the dragonfly wedding once was. The whole area is tract houses now. Regular rows of houses and cinder-block walls almost up to the river. Between the suburb and the river, though, there's a corridor, a strip of neglected riverside. You can set down a blanket there, watch the grass spiders busy in their cyclone nets, the bees heavy with pollen, the labor of the ants, the flash of a solitary dragonfly in the bright sunlight.