From *10,000 Years of Field Notes*.

Chapter 1. A SAPLING GROWS UP (excerpts)

I thought about lots of things walking to Third Street grammar school
and later bicycling to John Burroughs Junior High
on those early-smog sycamore-shaded sidewalks.
Our street trees were European sycamores, the London plane,
even though our street was named Las Palmas.
I preferred the native California sycamore
even though it grows crooked.

Sometimes I imagined all the people gone, as they will someday,
trees growing through ruins.
Most exotics would vanish from lack of artificial water.
I figured which would keep going
Which natives will return and the stages of succession,
although I did not know there was an ecological theory of succession.
There were still vacant lots sporting some native plants,
but most were weedy Eurasian invasives.

The ugly house that looked like a miniature castle,
where a young movie star once lived,
had Italian cypress trees.
Tall dark columns, green on the outside
and itchy scratchy dead twigs inside full of spiders and mites.
Those trees would live on in this Mediterranean climate but would not spread,
I never saw seedlings
and later learned they are a sterile horticultural selection.

Olive trees, also Mediterranean selections, would keep going,
some maybe for centuries or perhaps a thousand years,
but again, I never saw seedlings.
Each tree produces thousands of one-seeded olives every year,
so maybe a few would germinate and survive
natural selection for wild type might admit olives to the new flora.
Our neighbor, a world-renowned allergist,
had a whole grove of olive trees.
Olive pollen is a top-listed allergen.
A favorite trick was to give fresh juicy olives to a new kid from back east.
Unprocessed olives will pucker your mouth for a long time.

Sidewalk edges and street cracks would fill first
with weeds like Bermuda grass,
but to make things more interesting I moved in coastal prickly-pear (*Opuntia littoralis*)
and Los Angeles manzanita (*Arctostaphylos glauca*).
They would thrive in cracks opening from earthquakes.
Being a California kid I thought earthquakes were normal.
Native and naturalized species could move in from vacant lots
and open spaces like the La Brea tar pits,
about a mile away, still vaguely natural.

Sometimes I thought about bringing back mountain lions and condors
and Ice Age La Brea tar pits creatures
Giant ground sloths, dire wolves, mammoths
and muscular saber-tooth cats.
What would it be to see those sabers in action?
Or might they use their sabers to rake dead flesh
from big mammals mired in the tar?
not just stabbing soft belly flesh for a slow kill.
What's wrong with a heroic animal bleeding prey to death
or being a scavenger?
America's national symbol is a carrion eater and America bleeds the world.

The tar pits were our hunting grounds.
Incredible as it seems in today's litigious society,
many of the tar pits were not fenced.
After spring rains we found California tree frogs
breeding in water on top of tar pools
and two-striped garter snakes lurking for fat frogs.
The Los Angeles County Museum of Art and the Page Museum
of tar pit fossils covers our hunting grounds.

Not far beyond school was a stream with native sycamores, California live oaks
and a thriving population of the big California newt (*Taricha torosa*).
Unlike most salamanders they have dry rough skin.
Big eyes, a fixed smile, and rising up inquisitively makes them look happy.
It was fun to give one an earthworm and watch it stuff down a wet wiggling worm
with yellow-bottomed splayed-out hands.

In junior high the stream got stuffed into a big culvert
and buried under a concrete coffin.
My first encounter of a world raging against nature, against my world.
I was waking up to goody-goody dumb-down textbook deceit
like the engineering marvel of stealing Owens Valley water for L.A.

I learned that teachers did not much care about animals and plants,
marine mollusks and other sea creatures,
let alone cycads, palms, cactus and orchids.
I made it through school days mentally evolving landscape scenarios,
morphing creatures and plants from one to another and another.
One favorite was a basic iguanid like a fence lizard,
evolving into something more specialized
like a chuckwalla, horned lizard, or fringe-toed sand
swimmer.
I was more closely tied to the Pleistocene than the Mesozoic
so dinosaurs didn't hold much interest.
Turtles, fish, cacti, cycads, palms, lizards, mollusks
and other sea life inhabited my secret territory.
I wondered how other kids got through.
Good that we had windows so I could see trees for new ideas.
I would maneuver a seat in the back of the room
so I could read an interesting book hidden inside a stupid textbook.

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Besides the tide pools,
in high school, other favorite places were
Joshua tree forests in the nearby Mojave Desert
Palos Verdes tidepools, and the natural history museum downtown.
Old Dr. Hill was curator of marine invertebrates.
He befriended any kid interested in marine mollusks
(what everyone else called seashells)
and helped establish the local shell club and interest in marine invertebrates.
I helped label and file specimens,
each accession in a museum-special small open-top cardboard box
snuggled into a wide wooden pullout drawer.
It was fun to see known species, like old friends,
and examine new ones, learning their names
seeing related species in adjoining boxes
easy to see evolutionary connections.
The labels were intriguing,
anchoring specimens to habitats and localities
intertidal, sandy beach, rocky shore, or mysterious deep-water fathoms,
California, Baja California, the Gulf of California,
South Sea Island shells donated by WWII veterans.
I was appalled that some kids would steal shells. Old Dr. Hill had to know.

I got to take a Saturday natural history class at the museum.
For the first time I was learning something worthwhile in a classroom.
Dr. Gretchen Sibley was head of the Saturday natural history classes.
I can see her even now. Did she know how much I treasured those classes?

Her specialty was the structure and identification of mammalian hair.
The subject was not of much interest to me,
but for the first time I realized it was OK to follow your interest,
even if the rest of the world did not share your intrigue.

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I read every book on natural history and ecology that I could get my hands on.
Among the most treasured were Raymond Ditmars' reptile books
and the three-volume small-print thin-paper *Cyclopedia of Horticulture*
by Liberty Hyde Bailey that I pestered my father to buy for me.
The bookstore salesman ignored me and told dad it was not a book for children.
I confronted adult authority in anger that amazed me.
I was ten years old and got my cyclopedia.

Later I got Archie Carr's sea turtle books
and Ricketts and Steinbeck's Sea of Cortez.
I had no interest in the Steinbeck part,
only Ricketts' vivid descriptions and photos and marine life,
read and re-read over and over.
That book set me on a course of discovery to the Gulf of California.
I still have those books and continue to use Bailey's *Cyclopedia of Horticulture*.
Look at the intricate line drawings, hundreds, maybe thousands, by LHB himself.
He was still collecting palms in the Amazon in his late 90s.

Later in life I met Archie Carr and he did not disappoint me.
He called me Chico.
I realized it was a good way to avoid remembering someone's name.
We met more than once in Central America for sea turtle conservation,
and he reviewed and praised my publication documenting
hibernating sea turtles, and he still called me Chico.

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I remember when a family friend, Albert Harris – he was a soldier then
– gave me a birthday present box of cactus and succulents,
shapes that reminded me of shapes I knew from the sea.
I was eight years old. I planted them in a specially prepared bed.
I brought in fresh soil
since the sand in the front yard of the beach house was too salty.
Those plants thrived, even after I transplanted them to a more permanent place
at our home in town. That was the turning point into botany.
Until then I was only interested in sea life.

Summertime was a rented beach house at Malibu.
There were movie star houses nested among old sea worn beach cabins,
and everything in between.
Ours was one of the future “tear-downs” long before the place went zillionaire.
The other side of the coast highway was a hike into wild scrubland,
summertime dips in warm sycamore canyon pools.
If you sat still long enough Pacific pond turtles hauled out onto rocks,
smooth black almost round carapaces, each scute outlined, wet eyes blinking.

I didn’t know there could be warm seawater,
being all day in the cold Pacific Ocean,
crashing tumbling into the biggest waves riding fast to the shore,
didn’t know it was called body surfing.
Diving deep down to the base of the Big Rocks to get abalones
you have to yank them off fast or they clamp down on fingers.
Three species were common, red, green/blue, and black abalones, all now rare.
The meat was supposed to be tough, so it was wrapped in a cloth
and pounded with a board to be tender, though I think it was unnecessary.
Sometimes at the end of the day, right in front of the house,
we would cast out a baited hook and a get a halibut for dinner.
Full moon and no moon highest tides sometimes brought grunion runs at the cove at night,
catch a bunch by hand, silvery wiggle wet into a bucket,
grunion are solid, not like most small fish,
cooked up whole with butter for breakfast.

The beach drifts were endless zones of tide tossed sea life
kelp and coralline algae, starfish, sometimes shark egg cases
shells too numerous to list,
although sometimes a fresh chestnut cowrie and everything else.

The Cove about a half hour from the house
was the best place, good surfing next to rocky tidepools
away from pestering adults:
Stand up Straight! Your Posture Is Bad! You Will Grow Up Crooked!
Have to look down to find good things in the beach drift and wet sand.
Sometimes the thin shell of a small, juvenile red abalone;
if you haven’t one, you have missed the most beautiful thing possible.

By mutual agreement my room was separate next to the garage.
My dog slept on my bed and broke open the screen door to go in and out
I had aquariums with sea animals
and drying beach drift creatures and mollusks next to the screen door.
I often had an octopus, kept for a few days and then back to the ocean.
Every morning I hauled a bucket of fresh seawater
to keep the aquariums fresh.
It still bothers me to see octopus on a menu.

I didn't know the word conscious or sentient,
but I knew they were smart. I liked the way we looked at each other.
One night I watched a medium size octopus lift off the aquarium lid,
slither into the next tank, and then the next one and grab a fat goby,
eat it, and then go back the same way,
settle in and change to a satisfied color.

Decades later I went back to the Colony at Malibu,
to tell a rich cat how to grow *Phalaenopsis* orchids.
Except for the sea, it was unrecognizable
multistory multimillion dollar status structures.
The shore clean, sterile, and no beach drift.

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A major turning point was my high school biology teacher, Nancy Thomas Neeley.
At high school lunchtime I hung out with natural history friends in Nancy's classroom,
a wooden bungalow that had been moved onto the grounds.
Sanctuary from the sports-inflicted outer world.
Scientific names only, no common names here.
Nancy brought us scientific journal articles,
some from her boyfriend Peter Neeley working on his Ph.D. at U.C.L.A.
After school Nancy often took us in her car to the Palos Verdes tide pools,
every new creature identified.
Through Peter I came into contact with U.C.L.A. Professor Raymond Cowles.
I went to seminars and tagged along on field trips,
and listened to graduate students talking about their ecological research.

Professor Cowles told me about *Eugenia* trees in his native South Africa
that took the place of California oaks.
We had a *Eugenia* hedge around the back yard to blot out neighbors.
After a bit of reading I realized our hedge could grow into magnificent trees
if only they could escape pruning shears.
From Dr. Cowles and his students I learned about thermoregulation
how delicate little *Xantusia* night lizards thrived in the desert
living under decaying fallen Joshua tree branches
even though they would die in a minute in the searing summer sun
inches away from their dark hiding place.
Prof. Cowles told us about South African racial policies that he detested.

One Christmas vacation, Nancy and Peter, now married,
invited me to go along on a trip to Álamos in southern Sonora.
The subtropics beyond the desert,
not that the desert did not have a strong appeal.
But the edge of the tropics opened my world,

bromeliads, a cycad, palms, orchids, towering cacti, long-nosed green vine snakes,
boa constrictors, cichlid fish, and tropical trees.
Such splendors made southern California sclerophyllous scrub seem dull and deprived.
I know there is special purpose for the fire-climax California coastal flora,
but it just didn't match the splendor of the tropics.
Like the first time I saw one of Gauguin's Tahiti paintings, some things are just better.

The tourist draw for Álamos was a colonial town in Old Mexico,
cobblestone streets and falling arches
but hardscrabble poverty on back alleys smeared out the quaintness.
The U.C.L.A. ecologists were researching hibernating of poor-wills,
the discovery that a bird can lower its temperature and go into torpor.
We were traveling in three vehicles.
Occupants of one of the cars were Audubon birders.
Their car looked like an upside down bathtub and was about fast as a bathtub.
We stopped often to look for birds, trees, cactus, and other special events,
for meals, or to camp.
You could camp just about anywhere; personal safety was not an issue.

The birders were Catholics and did not believe in population control
a rude awakening, that biologists could be anti-population control.
I argued that any habitat, and after all the whole world is just one big habitat,
can only support so much of any one species, or of all life, and no more.
They were not buying it.
I would say we will have population control or death control.
They said we need to make more room at the table.
Birders should know better.
We went round and round, human population exploding, nature suffering,
more and more people needing more and more resources,
wiping out more and more species and each other.
I argued population ratchets up bigger wars and more violence to nature and people.
I pointed out we didn't have atomic bombs until population went past two billion.
They lamented the destruction and loss of natural habitats and species,
what we now call biodiversity, and claimed to be pacifists.
But in the next breath would say we have to make more room at the table.
Did you think that one up or did you get it from the biologically challenged Pope?
What if you can't get more wood to make a bigger table?
Well, just make more room at the table and share.
Yeah, but how many times can you divide the pie
and how long can you still find trees to make a bigger table?
Round and round. Everyone else got tired of my arguing
although they agreed with me.
I was fifteen and sure of myself.

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I decided on the University of Arizona,
the closest I could get to the subtropics in Sonora.
And later spent much of my life in Tucson, home base in the Sonoran Desert.

Undergraduate and graduate work,
as often as possible field work in Arizona and Sonora,
Gulf of California islands, El Pinacate, the Sierra Madre Occidental.
My major professor was a strong influence.
The first years were good but he became increasingly difficult and controlling.
Took my work, my name off, and put his name on it.
From here on I will refer to him as the evil professor.

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When I was a kid I vowed to live where there is no frost;
if you are growing interesting plants,
orchids, cycads, bromeliads, palms, and the like,
then you understand the importance of frost-free living.
When I was in graduate school and about to quit because of the evil major professor,
one summer my sweet wife and I drove from Arizona across the South
to check out southern Florida and Key West,
one of the few frost-free places in the United States.
We were appalled by separate drinking fountains and separate restrooms.

But real estate prices too high, crummy soil, mosquitos, sticky hot, and hurricanes
the place too flat, too green, and too wet for a desert rat,
even for a desert rat dreaming of frost-free living.
South-facing slopes at La Jolla, Coronado Island, and a few other places in southern California
were also candidates but real estate prices were off the chart.
Maybe Hawaii.
A few years later, after regaining my freedom and going back to finish graduate school,
I decided on Perth in western Australia.

The Viet Nam war was raging.
I was in a country engaged in genocide and ecocide in a trumped-up war.
I had my Australian immigration papers and was ready to leave,
when a job offer came through for the University of Colorado in Boulder.
Interesting with the Rockies so near.
The war escalated. We protested to no avail and sometimes it turned ugly.
A professor in my department spit on me as we stood in silent protest.
One faculty meeting descended into a fight,
peace vs. war, teaching vs. research.
I walked out to join a peace march.
The FBI was spying on my friends, and perhaps me too.
Australia seemed like a good idea.

But then I was offered a sweet job at the Natural History Museum in Los Angeles,
strange to return to the place of childhood wonderment.
Good people and good pay,
but for me the place was dead and the smog too tough.
And I am allergic to freeway traffic.
War escalated. In one march we were 200,000
even though the media downplayed the numbers and the police menace was real.
American soldiers shot and killed American students in Ohio,
the spelling changed to Amerika.

I was Senior Curator at the Natural History Museum in Los Angeles in charge of botany.
And thickly involved in publicizing population and environment.
Public awareness was surfacing and the word ecology crept out of scientific journals.
"Ecology," the study of the environment, became a noun for environment.
Being any shade of green was still not politically viable
but that was changing and I suppose I was part of the scene.
Resistance, however, came from unexpected places.
The museum director called me to a hands-folded meeting in his ornate office
and reminded me that my salary came from the public sector.
Good, all the more reason to alert the public about population and the environment.
What else should a researcher at the natural history museum be doing?

Once I was invited to a lunch meeting of wealthy supporters of population issues.
Because of my public statements and media coverage, I was the main attraction.
An overfed gentleman ranted about the dire outcome of an overpopulated future.
He waved a frozen soy burger and threatened we would all have to be vegetarians.
I felt like saying, "Do I get fresh mushrooms on it?"

Joe Pyne, a smashmouth specializing in making fools of publicity-seeking guests,
had a national TV show. He wanted me on his show
after the *Los Angeles Times* headlined an interview with me,
quoting only slightly out of context that if we didn't do something about population,
civilization would collapse in 50 years.
Joe kept pestering me to be on his show.
I mentioned it to Paul Ehrlich, and he had the hots to be on Joe's show.
So I told Joe to get Paul instead of me.
I finally relented if both us would be on since I was concerned about Joe's behavior.
I needn't have been concerned. Paul hogged the whole time, I didn't care.
Paul was as big an egomaniac as Joe,
the difference being Paul was brilliant and had a lot to say.
Joe Pyne is forgotten and Paul Ehrlich is not.

Paul's book *The Population Bomb* exploded across the planet.
The Left vilified him as an elitist pig
the Right vilified him as anti-business,
and academics vilified him for non-scientific writing.
Later detractors smirked that many of his predictions have not happened.
Or have they?
Nuclear winter became another of Paul's insights that were ridiculed
and luckily has not happened,
although Three-mile Island, Chernobyl, Fukushima, North Korea,
and thousands of nukes in waiting make Ehrlich's writings ever more momentous.
The Population Bomb is most important book of the 20th century and remains so.

The Los Angeles County Museum of Natural History
was a wondrous old place about half a mile long.
Monday mornings when the public wasn't there and the halls dark except the exhibits,
it was more unreal than any movie set.
One of the guards was involved in a drug and prostitution business out of the back door
and asked if there was anything I wanted, no charge
because I was one of the few curators who talked to him.
He repeated the part about "anything."

Curators' offices and scientific collections were on the third floor
off limits to the public.
I had a big office next to the herbarium, which I was in charge of.
But the herbarium was not big enough to be of significance
to the scientific botanical community.
The pay was good, the staff wonderful, but the place was dead.
I drove an hour each way on the freeway to live by the ocean
where there was less smog and the sound of waves.
One day I stayed late. It was before remote alarms and beepers and such.
Guards would not work after hours except with big dogs.
If you stayed late you had to call down to the back door on the hour before leaving your office
because of the dogs.
Walking to my car, two guys came up fast and asked if I had a light.
I saw their knives and ran for my car, got in just in time and drove off.
Next day I left a letter of resignation, drove out of the parking lot for the last time
as the Grand March from Aida came over the radio.
I went back to Arizona although it was financially challenging, but that's another whole book.

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Ever since childhood it was obvious the world is one super-organism.
When I read James Lovelock and Lynn Margulis' Gaia theory
it hardly seemed like a theory but a description of the obvious.
My mind skipped to the interrelated trends of warfare and escalating population,
later galvanized by 9/11.
What can we really do?

NOTES FOR THE NEXT TIME

If we are so smart why do we still have war?
Why are millions of people suffering unspeakable abuses?
Why are homeless women sleeping on warm air grates behind the Supreme Court?
Why are we killing animals and plants and natural places?
Why are reproductive rights questioned?
Why is your government stockpiling nukes to wipe us off the planet?

If there is adaptive value to consciousness, it is do something before it is too late.
You might say the problem is too big.
And rationally it looks like the Invasive Shrub's debacle in Iraq set the stage for WWW III.

Trying to predict the future?
Based on present trends, it's obvious increasing population leads to bigger disasters,
ultimate global warming,
bigger weapons,
and eventually some rump-heads will use them.
Bang bang you're dead, your children are dead, your dog is dead,
the turtles and whales are dead. Everything is dead.
Nuclear winter, nuclear summer, nuclear death.
It's not science fiction; it's just a little bit out of sight.
Paul Ehrlich says it's only a few decades away.
But we don't know the future for sure.
An addictive (reversible if necessary) male birth-control pill in the hands of women?

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Crank back past the industrial revolution,
back past the renaissance, Rome, and King Tut
to Ice Age mammoths and mastodons, cave bears and lions
in the place we now call little England,
and keep cranking to pre-humans running around the Serengeti Plains taming fire
and making hand axes without handles.
And back before upright humanoids
made use of intelligence and communication skills

to kill each other and select the tastiest foods.
They used energy of the day, plants, animals,
and then fire to release tree energy.
Then down the millennia,
harnessing the wind to sail and conquer far from home.
Whale oil and oil of geologic time,
entropy to balance human negative entropy.
No single species ever so weighty.
Population sneaking up until two billion
require balance of cosmic energy release,
Nevada, Eniwetok, Hiroshima, North Korea.
Ten, eleven billion you say won't work.

Is there an adaptive value for consciousness?