

Trail Log 1990-1994

Holmes Rolston, III

Summary

- 1990 Local trails and trips. Frozen Head State Park, Colditz Cove State Natural Area, Pickett State Park, Tennessee. Wilderness Management School, Gila Wilderness, New Mexico. Geology hike, Long's Peak, Colorado. Backpacking, Mt. Zirkel Wilderness, Colorado.
- South Africa, October 1990. Addo Elephant Park. Fynbos vegetation. West Coast Park, gannets. Quagga Project. Umfolozi Game Reserve. Tempe Elephant Park.
- 1991 John Muir Woods, California. Salmon River, Oregon. Texas Parks and Wildlife Symposium. Jackson Hole and Tetons, Wyoming. Hawaii Volcanoes National Park. North Idaho College, Coeur d'Alene, Idaho panhandle, Glacier National Park. Aspen, Colorado, Center for Environmental Studies and backpacking. American Lakes (Rawah Wilderness) backpacking.
- 1992 Local trails and trips. Mt. Hood, Oregon, and Salmon River. Lake Woodruff National Wildlife Refuge (near Deland Florida), H. J. Andrews Experimental Forest, Oregon.
- Brazil and United Nations Conference on Environment and Development (UNCED), Rio de Janeiro. Pantanal. Amazon, with Baird Callicott. Tegucigalpa, Honduras.. Costa Rica, Rincon de la Vieja Volcana Park
- Cabwaylingo State Forest (near Huntington), West Virginia. Missoula, Montana, conference and hiking.
- 1993 Bozeman, Montana, hunting symposium, and Yellowstone. Local trails and trips. Colorado eastern plains. Okefenoke Swamp, Georgia. Catskills, New York. Canada Lake, Adirondacks, canoeing.; Mohunk Preserve, Shawangunk Mountains. Phoenix (Tempe) and Society for Conservation Biology. Roan Mountain, Tennessee/North Carolina, and Southern Appalachians Highlands Conservancy.
- Europe, Wales, Mount Snowdon, Windemere, Trough of Bowland, hike up Ben Nevis, Scotland, World Congress of Philosophy, Moscow, Tolstoy's Grave.
- Oak Ridge, Tennessee. Great Smoky Mountains National Park. Lexington, Virginia and Rockbridge Baths, Virginia.
- Oxford, England, and Norway, with Arne Naess.

1994 Lake of the Ozarks, Missouri. Alberta Canada and Jasper National Park.

Israel and Society for Preservation of Nature in Israel, Eilat, raptor migration in Israel.

Los Angeles, California and La Brea Tarpits. Wichita Mountains Wildlife Refuge, Oklahoma. Cascade Head Natural Area, Oregon. Mt. Saint Helens. Appalachian Trail, Harper's Ferry, West Virginia. Pawling, New York, Judaism and Ecology.

Finland and North Cape.

Bob Marshall Wilderness trip

American Fern Society, Knoxville, Tennessee and field trip. Backpacking, Rocky Mountain National Park. Austin, Texas, Texas Section of the Society for Range Management, and field trips. Santa Fe, New Mexico, and Sand County Foundation, field trips. Pawnee Buttes, Eastern Colorado Plains.

1990

Includes Africa, October 5-20, 1990.

January 4-11. Trip to Louisville, KY and Richmond. Jan. 13 flew into Charlotte and out again enroute to Richmond. Lots of evidence of hurricane Hugo, trees laid down in spots, although then it would skip a mile or more until trees were laid down again. This was a massive hurricane that came further inland than usual last fall and closed down St. Andrews College.

Jan. 11. Flew Richmond to Atlanta, which flew over Winston Salem and Asheville area with clear blue skies and nice views of Southern Appalachians. Then from Atlanta to Denver, flying over Ozarks. Nice weather, blue skies from coast to the Rockies.

Jan. 27. Snowshoed alone to Zimmerman Lake. Nice day especially in morning, got more windy later on, though I lunched at the lake decently. Big L.L. Bean winter boots worked well with snowshoes (Sherpas). After return to Scout, I changed to the heavy blue/black gaiters over my hiking boot and tried the Montgomery Pass trail a little. That worked well too.

Ten bighorns near where the old right angle bridge was (now replaced with better bridge). Two more several miles below fish hatchery. Fourteen at the fish hatchery, about 6-8 rams in here, less than half curl. This on the way up. On the way back there was a good group of twenty four several miles above the fish hatchery, a hundred and fifty yards off the road. Total 50 sheep.

Scout wouldn't restart when I pulled into Hardware store in LaPorte and I got a fellow to pull me. Started at once when I popped the clutch in 2nd gear.

That night: heard David Martin at Kevin Cook's Eyrie. He runs the Colorado Bird Report, 423-5582. Gets 28,000 calls in and out a year. It is 24 hours on recording, call in as early as you like before going out for the day.

Feb. 3, 90. Bryophyte Workshop with David Jamieson at Golden. Judy Von Ahlefeldt rode down with me. Bill Jennings, P. O. Box 952, Louisville, 666-8343 is the orchid man in the state. Peter Root, 4915 W. 31st Ave., Denver, 80212, 433-9340, is the fern man. Loraine Yeatts is good, a volunteer with Denver Botanic Gardens, went into Big Thompson Canyon for a study for Rocky Mountain Park to relocate some stuff lost in there.

Feb. 9. Friday. Lunch with Ian Player, South Africa, and World Wilderness Congress.

Feb. 10, Saturday. Phantom Canyon, alone. Went to Game check station on Cherokee Park Road and cut over Judson Ranch land to get to the Nature Conservancy Easement. Lovely day, though windy at times up top. Climbed to the flat west rim, and then dropped down to the river, through light snow on north facing slopes. Walked up the river a ways, crossing on ice, though you can often jump it on rocks at this season. Climbed back to rim, and lunched just below it to stay out of wind.

Found nice carpet of Bryum alpinum coming back down. Distinctive in the field and this is the first I have really recognized it. Forms large soft deep turfs of moss trending downslope on smooth, sloping surfaces of irrigated granite outcrops. The plants are not really anchored to the rock but held together by eroded gravel and sand. Bright green when fresh, golden-brown when dry and older. Imbricate when dry, not at all crisped

Ten deer, half of them at the bottom of the canyon. Lots (6-8) of ouzels, active and singing, in and out of water. One nice golden eagle, one rough-legged hawk. Try the Lone Pine road, below here; it is on state land.

First crocus. Warm days through here.

February 24. Eagles on plains, alone. Saw nine, just past the river crossing toward Riverside Reservoir, at the irrigation canal on the north side, look way down east. They were all perched nearby. Is this where the roost is supposed to be? Several good mature ones here. The others were seen off and on, a couple in the air over Empire, darting at each other. One good one was along the river toward Orchard. Only one at Jackson, where I lunched. Then on to Prewitt, where there were four. Ten in the day's total of twenty were adults.

Brought home a Kangaroo rat that had recently been killed from roadside. It has notable cheek pouches--fur lined outside pockets on either side of the mouth which it uses to carry seeds. This one had a head of grass seed tucked away in one pouch.

Three nice pheasants, right beside car. Fifteen rough-legged hawks. Drove back from Merino north to Colorado 14 and thence home.

March 1-4, Conference on Theology and Environment at Lutheran School of Theology, Chicago. Spent Saturday afternoon on the Indiana sand dunes with Ron and Joan Engel. He wrote Sacred Sands. Nice weather, though breezy and cool to cold. The dunes are a remnant interspersed in big steel, now rather decadent and empty of the once glorious promises of the progressive era. Sunday, flew back right over Prewitt Reservoir on the plains above Fort Morgan.

March 15-19. Oberlin College, return via Huntington, WV. Went out Saturday morning with Eric Higgs, wife Sheila, Barbara Moran (philosophy of science), and Joe Sheridan, led by Dennis Desjardin, a mycologist, good with twigs in winter condition, which he had just been teaching in class. Looked around on some good woods owned by the college.

Afternoon, geology field trip, led by Cheryl Hummum, geologist-naturalist with Lorain County Metropolitan Park District. At Mill Hollow, Bacon Woods Reservation. Vermillion River has cut a cliff through Cleveland Shale, overlain by Bedford Formation, which is reddish (vermillion). A feature here are so-called "Fossil Turtles," nothing to do with turtles, but a rock concretion with veins running through it (septaria) that resemble turtle shells.

Latter part of afternoon at Old Woman Creek National Estuarine Reserve, on edge of Lake Erie. Red-bellied woodpecker seen here.

Sunday afternoon, drove north of Huntington with Julia, Gray, M. J., Ernest, to see Green Bottom, a wet area managed by Corps of Engineers and used for hunting and recreation. One raccoon seen that had been injured; he was limping. Lovely weather, though it was snowing by the time I took off from the Huntington airport on Monday morning.

Apr. 15. Easter Sunday. Overcast after a lovely Saturday. Cobb Lake and Wellington Wildlife

areas. Avocets, scaup, mallards, pintails, gadwalls, blue winged teal, cinnamon teal, widgeon, one pair of pheasants up close and many calling. Four pelicans at Cobb lake in distance, five at Wellington area. Zillions of yellow headed blackbirds. Redwings. Geese. One pair of marsh hawks nesting at area going on a little north from the usual turnoff back west to Wellington ponds. Steadily carrying nesting material and dropping down into a cattail swamp near the road.

Coots, lots. A few shovelers. Pied bill grebe, western grebe. Mergansers, kildeer, western meadowlark. Buffleheads, one ring-necked duck, up close, nice. There is a great blue heron rookery now at the small pond, westernmost stop, at Wellington area. There were 15 great blues in it. Check this again.

April 19. Lecture at Middle Tennessee State University.

April 20. Drive to Frozen Head State Park (Wartburg, TN), and walked North Prong Flat Fork, past DeBord Falls, and then up Panther Branch. Spectacular trilliums, perhaps a hundred thousand of them in all. Also Phlox was spectacular. Lunched on the trail. Returned, checked in at motel, and then walked Judge Branch trail. Talked to ranger here, David Engelbretson.

April 21. Drove to Colditz Cove State Natural Area, near Allardt, near Jamestown. Preserved by Nature Conservancy and Tenn. State Parks. Deep gorge with hemlock and rhododendron, and an overhanging falls, rather like Noccalula Falls at Gadsden, Alabama. Good trailing arbutus in here.

Drove to Pickett State Park, at Kentucky Border, but did not have much time there. Also little out here in wildflowers. Hiked Hidden Passage Trail briefly, and found lots of Climbing Fern, Lygodium palmatum. The only time I ever saw it before was at Roan Mountain, above Ripshin Lake, June 7, 1966.

Wildflowers in Bloom
Frozen Head State Park
Colditz Cove State Natural Area
Pickett State Park
April 20-22, 1990

Stellaria pubera, Great chickweed
Claytonia virginica, Spring beauty
Viola hastata, Halbert-leaved yellow violet
Anemonella thalictroides, Rue anemone
Hepatica acutiloba, Hepatica
Sanguinaria canadensis, Bloodroot, past blossom
Dentaria laciniata, Cut-leaf toothwort
Viola rostrata, Long spurred purple violet
Epigaea repens, Trailing arbutus, a good deal at Colditz Cove
Trillium sessile, Maroon toadshade trillium
Trillium luteum, Lemon toadshade trillium
Trillium erectum, Wake robin trillium
Trillium grandiflorum, Great white trillium
Trillium -- at least a hundred thousand
Anemone lancifolia, Wood anemone
Ranunculus spp. Buttercup - perhaps 4 species
Phlox stolonifera, Wild Blue Phlox
abundant and spectacular

Vicia, Wood vetch
Viola canadensis, Canada violet
Geranium maculatum, Wild geranium
Carex, Sedge, several species
Antennaria plantaginifolia, Pussy toes
Thalictrum dioicum, Early meadow rue
Vicia minor, Periwinkle
Tiarella cordifolia, Foam flower
Asarum canadense, Wild ginger
Asarum arifolium, Little brown jug
Pedicularis canadense, Wood betony
Iris cristata, Dwarf crested iris, quite common
Arisaema atrorubens, Jack in the pulpit
Caulophyllum thalictroides, Blue cohosh
Oxalis montana, Wood sorrel
Uvularia perfoliata, Perfoliate bellwort
Smilacina sp., False Solomon's seal
Polygonatum sp., Solomon's seal
Disporum lanuginosum, Hairy disporum
Panax trifolius, Dwarf ginseng
Podophyllum peltatum, May apple
Viola, another yellow violet
Orchis spectabilis, Showy Orchid, 2 seen
Erigeron sp., Fleabane
Senecio sp., Ragwort
Hypoxis hirsuta, Yellow star grass
Cypripedium acaule, Pink lady's slipper, 3 seen
Waldsteinia fragarioides Snake strawberry
Euphorbia sp., Spurge
Mitella diphylla, Bishop's cap
Zizia aurea, Early meadow parsnip
Cercis canadensis, Redbud, common
Cornus florida, Flowering dogwood, common
Barbarea vulgaris, Yellow rocket roadsides
Houstonia caerulea, Bluets, abundant at Colditz Cove
Viola pedata, Bird's foot violet
Dodecatheon media, Shooting star
Nasturtium, White water cress
Vaccinium, Highbush blueberry
Fragaria virginiana, Wild strawberry
Amelanchier sp., Serviceberry

Unidentified heath

Lygodium palmatum, Climbing fern locally abundant on Hidden Passage Trail, Pickett SP.

May 5, 1990. Old Stringtown Gulch Road to Nelson Spring. I was in here before on June 5, 1971 and June 12-14, 1978. Drive up in 4WD about 1 ½ m. in to locked gate, but this takes out much of the climb. Lovely day. Hiked in, reaching finest display of pasqueflowers I have ever seen, ten thousand of them. Otherwise not much out, though greened up. Some spring beauties. Steady hike in; I was hoping to get in shape a bit for the Gila Wilderness hike forthcoming. Lunched at

Nelson spring; snow still in drifts along the road, but no problem. On return a mother and son at Nelson spring in a Bronco, and on way out half a dozen or so trail bikers. Flushed one wild turkey; white band at end of tail (on Western birds). Blue grouse have no such band.

May 14. Hike up the Priest, with Ernie Thompson. SW of Charlottesville, VA. Nice purple rhododendron, and, towards the top, lots of trilliums still in bloom. Very nice day.

May 20-25. Wilderness Management School, Gila Wilderness, New Mexico. Drove to Santa Fe on Sunday and spent the night with Gerry and Frances Allen. Drove to Reserve, NM, Monday am., and had a flat tire going up to Willow Creek on dirt road, and second tire went flat not long after arriving in camp.

The School was at Willow Creek Administrative Site. Beth Boyst, former student, had invited me. Mike Gardner is the District Ranger. Leaders, and cooks, were Ron Henderson, older, moustache, lots of experience in the area, had shot bear in the area, told the story about the mare mule blaze. (The familiar tree blaze is derived from mule trails, and looks like the rear end of a mare mule!). The other cook was Ron Bradsby, larger, also with much experience in the area. John Kramer, another leader, was on the Wilderness Resource Staff of Gila National Forest; he went to the World Wilderness Conference here in Ft. Collins. They had eight Dutch ovens, of various sizes and shapes.

Backpacked in Tuesday and Wednesday, to Iron Creek Lake, then along Iron Creek, and over Clayton Mesa, to the Middle Fork Gila River. Dropped way down to camp into a canyon. Clear and dry. Lovely ponderosa forest on way in, and out, but very dry in the grassy undercover. Better along north slopes and riparian zones. Some very large Doug firs in here. Heard a whippoorwill in early a.m. There is a population in the Southwest.

Talk on no trace camping, dispersing fire sites, and one by an archaeologist on an old homesite in the area. Then packed out. Total 15 miles, and I got a blister on the way out, as most were moving faster than I otherwise might have. Lots of them were back country rangers and used to walking. The trip had been planned into Apache Spring (10,000 ft.), but there was too much snow there. But I saw no snow at all. Cold in the mornings, and lots of frost on the car the day I left.

Thursday, into Snow Lake, and I gave talk at campground near there. Also an after supper video discussion.

Drove out Friday a.m. and Richard Newton took me to see some Indian petroglyphs near Reserve. Drove as far as Las Vegas, NM and camped in rather nice KOA campground just south of there. Drove home Saturday. Perhaps three dozen antelope seen from the car.

There is a population of spotted owls in the Gila, and we met some persons who were canvassing the population. They listen and call at night. Sometimes they have put out a mouse and make a squeak. The owl will come in and get the mouse and they can locate the nest that way.

June 10, Sunday. Hiked N. Fork Big Thompson Trail about as far as Deserted Village. Had a summer cold, and didn't move all that fast or far. Nice day, though, and there were at least a thousand calypso orchids in here, many in good shape, many a little past prime. One clump had 116 in it, and another clump nearby some 36. Many clumps passed had 12, 15, often thirty or forty. Best display I have ever seen. About the usual otherwise.

June 21, Thursday. Heard Roger Tory Peterson speak at American Birding Association convention

at the Mariott in Ft. Collins. Also heard Jon Dunn, Consultant for the National Geographic guide on birds, on taking field notes to document rare birds.

June 23, Saturday. Heard Rick Bowers, Tuscon, Arizona, on night birds (owls and nightjars) and Greg Budney, on birding by ear, Curator of the Library of Natural Sounds, Cornell University Laboratory of Ornithology.

Scratch on a tree (don't beat on it) with a woodpecker hole, and see if an owl pops its head out. The owl thinks a raccoon or something is climbing up the tree and wants to see what is going on. Too much noise and it knows it's something else and freezes up.

Play owl calls at moderate to low volume. Play a pygmy owl tape even if you get no owls, lots of other birds will come in to fuss at it.

June 24, Sunday. Hike up Long's-Chasm Lake Trail with William Braddock, Geology, CU. Participants: Paul Edwards, 2541 Gilpin Ct., Loveland, High School science teacher, H. L. Schaeffer, "Lou" a park service employee in retirement and very interested in geology and natural history. Brian Suderman, 1117 Bradley, Laramie, WY. Also Braddock's wife, Carol, and Curt Buckholz went halfway, taking pictures, and then turned back.

The oldest rock that leaves any evidence to make inferences from is a (now) metamorphic country rock, laid down as sediments 2 billion years ago. By 1.7 billion years ago, it was solidified and metamorphosed, with some intrusion of a Boulder Creek Granite, not in evidence here.

About 1.4 billion years ago the Silver Plume Granite was intruded into it a pink, sometimes grayish granite that we walked through most of the day. The intrusion through here dominates, and often you see bits and pieces of the previous metamorphic rock, looking rather as though the granite is the country rock and the metamorphic came later. But not so, the other way round.

We walked round just below the bend in the road as you come up, to see Iron Dike, basalt, from 1.3 billion years, going to gabbro in the center of the dike. This is a well known dike and can be traced miles through the lower country here.

To date rocks of this age, there are two techniques. One is a potassium (in feldspar) going to argon, the other is a rubidium going to strontium. The argon is a gas, and has to be measured, presumably none lost. The rubidium is a trace element in the feldspar and is the test used here. You have to carry a lot of rock off the mountain to find some that has the right rubidium in it to run the test, done in Denver.

Walked up the trail. Colluvium (as Braddock used it) is loose rock, around in the woods here where there is little soil, that has not traveled far (more than 200 ft.) from where it once broke loose from bedrock. Alluvium has traveled some distance by water. Talus has fallen and piled up steep. Colluvial rocks heave to the surface through frost action.

Quartz veins in some of these rocks. Often with black hematite coating, hematite has crystal faces which suggests that it crystallized in open cracks. Time unknown, maybe Tertiary. Veins were laid down by water borne minerals. Dikes were put in by magma.

Eugenia Mine - little is known about it. Some say there is a shaft there to 1,000 ft. There is no record of any production.

Looked at a prospect. Sulfide iron bearing veins were thought probably to bear gold or silver and

prospected.

gossan, gozzan, a ferruginous deposit, that they liked, a top off for something important below.

Crossed a fault zone, before Eugenia Mine turnoff, then back into the Silver Plume Granite.

The brook crossing flows along the edge where you begin to shift from colluvium to glacial till.

The first till is Bull Lake, 130,000-150,000 years ago, the Bull Lake glaciation.

The second till is Pinedale, 35,000 to 10-15,000 years ago. Both are named from locations in Wyoming. Up there the till goes out on the plains and you can study it a lot better. Pleistocene goes back to 2 million years.

Big boulders along creeks can be spheroidal just from weathering in place, not necessarily water. Where there are two edges or a corner, weathering is accelerated, and this rounds them off. Glacial activity doesn't particularly round off boulders. It facets them by dragging them along a surface.

The Silver Plume Granite was earlier mapped and called other things. A woman named Margaret Fuller Boos ? mapped it and called some Mt. Olympus Granite, the fine grained phase, and some Long's Peak Granite, the typical phase.

Silver Plume granite would earlier have been called quartz monzonite, but that term isn't used any more. It would now technically be called monzo granite.

There are often planar oriented feldspar crystals in it. These are oriented with the flow of the magma.

The earliest sedimentary deposits (2 billion years) were shales and muds, and they have metamorphosed to gneiss by 1.7 billion years. This was presumably the first mountain building episode, although none of this topography remains, and you only judge that there were mountains because the rock beneath is much metamorphosed and contorted.

If it gets hot enough it not only metamorphoses, some of it actually melts, and this tends to be the low temperature melting parts, and this will recrystallize as quartz and feldspar. Some of the granite veins are formed this way, and are 1.7 b years old, contemporary with the metamorphosis. Others of the granite veins are 1.4 billion years, Silver Plume Granite.

A rock often doesn't have just one name. Several names can be used. We looked at one, a migmatite (thin alternating layers or lenses of granite type and schist). But it could also be called a biotite schist, or a biotite gneiss.

Gneiss and schist are not conceptually all that distinct.

Schistose texture has aligned platy minerals. They could be all the same, no bands.

Gneissic texture has alternating layers of different mineral compositions.

By this account a rock can be both schist and gneiss.

Some big garnets seen in some of the granite, also in some of the metamorphic rocks.

Above timberline. A white mineral in with the aligned platy biotite is sillimanite. It looks like felt under lens.

Bull Lake Moraine is older. Pinedale Moraine is younger; it is the ridge (here with more timber on it) closer to the gorge). It is not easy to tell where one stops and the other stops. You have to study how much weathering has taken place on the surfaces of the till. Often the metamorphic is a little harder than the granite, and sticks up in ridges of an inch or so.

Looking up at Meeker, Ship's Prow, the Diamond, etc., you see large bands, slightly sloping. The flat bands are all that is left of the country metamorphic rock and the intruded Silver Plume is above and below it.

The snowfield in Jim's Grove could have cut the depression there, but it may not be cut in bedrock, only in colluvium or till. The whole big bowl of Jim's Grove area is presumably a sort of Bull Lake Cirque.

scree - small talus, small enough to get down your socks when you try to walk over it.

Really, all the topography is contingent, looking out from the trail junction (Chasm Lake, main trail), where we ate lunch. Long's Peak isn't any different or harder rock from what's all around, it is just where the streams didn't reach. The tarns are there, presumably not on any harder or less hard rock. Even the big valley between Long's and Twin Sisters is not a structural valley, just a drainage.

Walked on to see a dacite dike. The mystery rock. Seems to be a Tertiary dike in here. It is a dacite porphyry. Brought home a small piece.

Braddock doesn't think the flat surface now on the summits was ever a peneplain, which is like Kansas, flat, no relief over 100 ft. The surface was really rolling or even mountains. It hardly has a date. We don't have any deposition here but in the time between a billion years and the present, all the rock column must have been more or less above the preCambrians, first laid down, and then washed away. Details all gone, or can be surmised from the rocks on the flanks down at Loveland, etc.

The next activity here is a upland surface, which 70-50 million years ago is uplifted, and the present Rocky Mountains start, being cut into this already low mountainous surface. That's Bighorn Flats and Terra Toma, cut now into Forest Canyon. Then the glacial features were cut 2 million years ago onward into that.

Braddock and Cole (a former graduate student of his) are publishing a Geologic Map of Rocky Mountain Park this year (September?) and he showed us a color proof, he had received only a day or two before.

end of geological hike, Long's Peak.

June 30, 1990. Poudre River and Laramie River wetlands, with Dieter Welkin and Jan McGee, on Colo. Native Plant Society field trip.

Plants at Kinnikinnick Meadows (shortly below the Fish Hatchery)

Potentilla effusa

Eriogonum pumilus
Stipa comata
Pseudotsuga menziesii, Doug fir
Populus tremuloides
Artemisia frigida
Pinus ponderosa
Habenaria hyperborea
Polygonum bistortoides = Bistorta bistortoides
Geranium richardsonii
Castilleja sulphurea, Yellow paintbrush
Pedicularis scopulorum. = P. sudetica ssp. scopulorum
Dodecatheon pulchellum
Carum carvi. Caraway. Like a Queen Ann's lace.
Thermopsis rhombifolia
Trifolium praetense
Poa praetensis
Astragalus
Allium rubrum
Grindelia squarrosus
Phleum pratense
Galium boreale
Valeriana edulis
Equisetum arvense
Stellaria umbellatum
Stellaria longifolia
Smilacina racemosa
Thlaspi arvense
Agropyron smithii
Pediocactus smithii
Gaillardia aristata
Bromus tectorum
Achillea lanulosa
Carex rostrata
Potentilla spp,
Scirpus microcarpus
Eleocharis palustris
Utricularia vulgaris insectivorous bladders
Sparganium minimum
Carex aquatilis
Pedicularis groenlandica
Glyceria striata
Primula incana
Sisyrinchium montanum
Rosa sp.
Salix sp.
Montia chamissoi
Oxytropis sericea
Populus balsamifera
Gilia pinnatifida
Phacelia hastata
Chrysothamnus nauseosus

Penstemon virgatus

Lilium philadelphicum (Wood lily) is in here, but we didn't see it.

Rode in the motor home of Robert Davis, economist that I first met at Wildlife Conference at Syracuse, also at the Symposium at Univ. Illinois, he is now in Boulder.

Went to Jan McGee's fen, which seems now to be called Boston Peak fen, a 10,000 year old glacial kettle remnant. Of interest here are Salix candida, Carex libida, C. limosa, and C. diandra. I worked the mosses here last summer.

Then went on to Hoehholz lakes. Several Wyoming plants here that hardly get into Colorado. Sisyrinchium pallidum.

Returned to Narrows Picnic area about 6.30 and took the Ford up to Cameron Pass to see if I could find the boreal owl.

Got there towards dark and found the box, very close to Zimmerman Lake trailhead. There was a woman there, Louise Armstrong, from Illinois, working in the summer at Cheley Camps. We scratched the trunk to no avail twice, waiting between each, and then as I was about to go we tried it again. The owl popped out and spent about a minute looking out. Nice show. The hole looks small, but the owl looked bigger than what you might have thought could get through the hole.

Drive home in the dark.

Richard Chamberlain in the movie Centennial was filmed in Kinnikinnick Meadows and the cabin ruin remains.

July 15. Bowen Gulch in Rocky Mtn NP and Arapaho NF. Drove over Trail Ridge and got on trail about 10.00, losing some time figuring out the trailheads. The former Bower Gulch trailhead has been merged with the Baker Gulch one, and then you have to walk south for a mile and a half to get into Bowen Gulch.

Hiked on up the Gulch. This is the area of disputed timber sale and old growth forest, though the area to be cut is not where I walked but nearby in a tributary drainage from the south. There are roads in from the south, not shown on the old maps.

Met three rangers building a bridge. Passed an osprey's nest, with the momma alarmed and screaming at me, both going and coming.

About two dozen elk seen from car coming and going. Try a backpack into the high country in here (Never Summer Wilderness) from the unshown roads from the south.

July 21-22. Backpack to Lake Jasper and Devil's Thumb Pass, alone. Left early Friday, went to Hessie Trailhead. After the road splits from Fourth of July turnoff, road is marginal for sedan, but many do it, and it is not far, only mile or so. Better to park at Hessie townsite and don't try to go the last mile or so. Creek often runs in road some, but it is solid gravel, not muddy.

Threatening weather, but it cleared and I hiked in dry. Set up camp and napped in rain, cooked supper in a little rain. Should have waited as it cleared off and was lovely in the evening.

Saturday, clear in a.m. and I day hiked up to Devil's Thumb Pass. The trail goes up into the cirque

with Devil's Thumb Lake and a pond above it, but then the trail does not climb the headwall of the cirque (contrary to what is shown on topo,) but goes UP to the south, climbing a ridge and joining the divide.

One good snowfield, snowbank in here that I climbed over going up, but was reluctant to descend on return, too steep for safety, and walked around. Weather was good. You have to drop down on the west side, pick up the Corona trail, and then climb back up to the Pass from the West. The Corona trail is well marked with high cairns, but some great distance apart; they would be difficult to locate in a whiteout.

Rain set in rather suddenly on descent, and I started lunch at the bottom in the shelter of some stunted spruce, only to have the sun come out while I ate. But weather had caved in by the time I returned to camp. Dry but cloudy for supper, and so foggy that night that you could not see more than 100 feet.

Sunday a.m. clear and nice, hiked out by 3.00 p.m., rather leisurely.

One deer first night, and coyotes howling in early morning. Birds were good, lots of white crowned sparrows. Several kinglets, seen. One white pelican on drive home.

Aug 1, Wednesday. Spoke at CSU Alumni Nature Camp, Pingree Park. Shonny used a whole matchsafe full of matches trying to start a fire in the stove in the cabin!

Aug. 5-9. Backpacking with Giles, Continental Divide Trail, Mt. Zirkel Wilderness. Left at 5.00 a.m., after Giles had had little sleep the night before, working at Jack in the Box. He slept much of the way over. Couple dozen antelope in North Park. One skunk prowling the road around LaPorte. Arrived in Steamboat about 9.30. Road to Buffalo Pass is good dirt, but lots of corduroy. Giles drove up; first time in Scout.

We were on the trail heading north by 11:15 or so, and hiked about an hour and ate lunch. Almost nonstop hiking through the afternoon to reach Luna Lake about 6.00 p.m. in lovely weather. A pretty good descent via Lake Elbert to Luna. About ten Boy Scouts were camped there (from Kansas City), but we got a good and quiet campsite toward the lower end of the lake. Pretty bushed by dark.

Tuesday, Aug. 7. Lovely weather continues, perhaps the warmest night I remember in the alpine. Hiked up to Lake of Crags, on up top, and then on Continental Divide Trail (abbreviated C.D.T. thru here) north to the Roxy Ann Lake Trail, where Giles and I had joined it before (in August 1981, when he was 9; now he is 18). Warm lunch in good sun.

We separated on return; he went back to fish and I collected some mosses. I made my way back south to the middle trail that goes down to Luna Lake, not well marked or well worn, but found the way down; there are some cairns. Went down below Luna Lake to the Mad Creek area a little after supper. Good weather continues.

Wednesday. Hiked halfway out, really a good day's hike, from about 9:30 till 3.00, and stopped at the pond right on the divide halfway back. Various people camped there, two with llamas. Started raining now, though also continued pretty. Spectacular rainbow after supper, sometimes double.

Thursday. Hiked out by 11.00 and drove home. Giles had to be at work at 8.00 and Jane was returning from Richmond to arrive at 5.00 p.m.

First trip using the Sierra Designs blue tent. Fewer hawks enroute than I would have expected. Apparently, we saw a fox going up the Buffalo Pass Road. Only a glimpse.

Aug. 19. Chasm Lake, leading group from Estes Park Philosophy Conference. Jack Weir, Paul Churchill, Bryan Norton, Pete Gunter and wife Sheila, her daughter Maury, and their daughter Sheila. Also Ray Raphael's son, Nick? Good day and good trip up.

Aug. 23. Drosera bog in Park Range, with Kevin Cook. But we couldn't find the sundews. Left 5:00 a.m. and were at the trailhead below Big Creek Lakes at 9:30. The road down from Big Creek Lakes to the trailhead is o.k. for Ford, but marginal. Wouldn't like to do it wet or any more washed out.

The trail south is the Grizzly - Helena trail, seems to be named because it runs from Grizzly Creek to Helena Campground, now defunct and passed in the car above the trailhead. But it is well kept up and no trouble to follow. It is, however, re-routed from what is shown on the map to keep it inside the national forest.

Heard and saw some crossbills on the way down. Kevin called them in. Distinctive call. Lunched at Shafer Creek crossing, and thought the trail went up from here (following Alan Carpenter), but I had misunderstood him, and we eventually went on another 1/4 - 1/2 m. south and found the junction. Fryingpan Trail is evident and little trouble to follow, seems to have been in many years. But it is not now kept up and there are frequent blowdowns. There are numerous signs at the critical junction, but many of them were old, some lying down.

Hiked up to the contact with Shafer Creek about 1 1/2 m. West, and found the Sphagnum Bog, but could not find any Drosera. Nicest Sphagnum bog I have seen in the state; you can jump on it and the Sphagnum turf shakes for 50 feet around. Lots of buckbean, Menyanthes trifoliata. Several Leopard frogs seen (Rana sp.)

But no Drosera seen. Phone call to Alan Carpenter on return. He says Betsy Neeley (his wife) found it, and they found several dozens of plants, most of them in a 50 foot area, but a number outside of it. Thinks they found them on two different bogs. This was in early August. He was looking for unusual sedges. He thinks the best of these bogs do not have Yellow Pond Lily on them. They used aerial photos and this made it a lot easier to get around. Phone 443-8094.

Returned about dark, ate a picnic supper at Big Creek Lakes, and drove home, arriving midnight. Big Creek Lakes has a Tiger muskie in it, a hybrid that is sterile, but bred and stocked as a game fish.

Saw 3 sage grouse on way home; two in twilight crossing road, and one after dark. They inhabit especially the wetter areas of the grasslands here.

The boreal owl in Cameron Pass raised 3 chicks. These owls feed on a vole that climbs the trees and so they can feed through the winter, even with deep snow on the ground.

Africa trip follows starting on a new page.

Africa Trip

Oct. 5, 1990. Friday. Left Denver, British Airways, about noon
Depart Chicago, 5.35 p.m.

Oct 6, Saturday. Arrive London, 7.25 a.m.
Checked in Excelsior Hotel

Took underground downtown for a few hours. Big Ben and Houses of Parliament. Westminster Abbey and visited Darwin's grave. Tower Bridge, and Picadilly Circus. Returned to hotel, and nap.

Depart Johannesburg, 8.15 p.m.

Night flight, arriving Johannesburg 8.20 a.m.

Met and taken to Rosebank Hotel, Johannesburg.

Lunch with George Carlson, Senior Lecturer, Department of Philosophy, University of the Witwatersrand. Talked until about 3.30.

Walked around the area, to shopping center nearby.

Oct., 8, Monday. Met with Helga Liebenberg, Director of the Southern African Forum, and Jenni Heeger, my tour leader, and Vance Martin.

11.00 left for Port Elizabeth, arrived Port Elizabeth and drove to Addo Elephant Park. Some vervet monkeys on the way in, crossing the road. Afternoon tour led by Nico van der Walt there. Saw about two dozen elephants at close hand, half a dozen leopard tortoises, an angulate tortoise (a rare one), glimpse of some kudu bucks, also several grey duikers (pronounced diker). Dung beetles. Watched elephants from a blind drinking and cooling themselves with water toward sundown. Lots of ostriches. Nice look at a cape eagle owl towards dusk and a smaller, unidentified owl. A number of suricates, a delightful small mongoose, including one tame one. One jackal buzzard.

Dinner that evening with Nico and his wife, Sorina, and that evening went out in four wheel drive truck with a spotlight. Saw one good buffalo, dark and memorable in the spotlight, another in the bushes. Red hartebeest, numerous spring-hare (not a hare, but a rodent something like a small kangaroo, on which Nikko had done some special work), various rabbits, a few eland, lots more duikers. One bat-eared fox.

Oct. 8, Tuesday. Morning at Addo Elephant Park. Ate kudu steaks for breakfast. They gave me some biltong, a dried meat like jerky. We went out again driving around the park with Barry Hapgood, a student doing a practicum in residence at Addo. Saw many more elephants, over forty at a watering hole, coming and going, and then back at headquarters there were another sixty coming in to the watering hole there. Lots of weaver birds at a wet pond area at the headquarters area, cape weavers, spectacled weavers, and red bishops (a black weaver with a scarlet head). Male weaver birds build the nest and show it to the female who may or may not like it. If they can't get a female to accept their nest, they have to build another. Cape robins. Cattle egrets. Malachite sunbirds, a striking bird. Also memorable is the incessant call of the doves, especially the cape turtle dove.

Left for Port Elizabeth and a flight about 5.00 to Cape Town. Checked in at St. Georges Hotel. Drinks with Albie Sachs failed to happen that night, but drinks and supper the following night.

Oct. 10. Wednesday. West Coast Park with Trevor Dearlove, Chief Communication Officer, Southern Parks, National Parks Board. Trevor attended the World Wilderness Congress in Denver and Estes Park.

Drove north West Coast Park, located at Langebaan, about 100 km. north. The vegetation is originally fynbos (means fine bush), here and even more south to Cape Point, but it is much invaded by several shrubs from Australia. The fynbos biome is an usual floral province, the richest flora in the world of comparable size. Some 8,000 species in the Cape Town area, nearly 70 percent endemic, and some 1,300 presently classified as endangered.

Lots of birds, francolins (a large partridge), (helmeted) guineafowl, flamingos, curlew sandpipers, stonechats (something like a robin), Egyptian geese, pied crows (like a magpie), common terns, sacred ibis, whitebreasted cormorants, crowned cormorants, bank cormorants, white pelicans, European bee-eaters, African marsh harriers, black harriers, black korhaan.

Took motorboat, guided by a park warden, Sarel Yssel, over to see nesting colony of cape gannets, ten thousand of them on an island. Difficult getting on and off boat in the swells. Saw cape fur-seals on way over and back.

After lunch, drove around the lagoon, saw many ostriches, including young, about the size of a chicken, and especially on the west side (north of Churchaven), bontebok, springbok, Burchell's zebras, gemsbok, blue wildebeest, eland.

Returned to Cape Town. Drinks with Albie Sachs, Director of the South African Constitution Center, exiled from South Africa for 23 years, sometime in Mozambique, sometime in London, lost his hand and part of his arm when a death squad bombed his car. He joined us for dinner.

Dinner with Denise Meyerson and Paul Taylor, husband and wife, philosophers at University of Cape Town. She does ethics, he social philosophy. Joined by Albie Sachs.

Oct. 11, Thursday. Day with John Raimondo, General Manager of the Environmental Evaluation Unit, University of Cape Town. Raimondo was earlier a chemist in paper technology, but has returned to the University in environmental evaluation. University is in a spectacular setting, mountains behind, False Bay opens out in front.

drove to Darwin site at Sea Point, nice view.

10.30. Talk to group of his students.

Lunch at Rhodes Memorial, area with nice view over the city, adjacent to the university. The inscription is : "To the life and work of Cecil John Rhodes, who loved and served South Africa. The immense and brooding spirit shall quicken and control, living he was the land; and dead, his soul shall be her soul." A verse by Kipling. Joined by Sandra Fowkes, senior consultant in the Environmental Evaluation unit, who is interested in incorporating environmental ethics into their course work there.

Brief trip to talk with Sheila Coltham at the Quaker Peace Center. She had a project planting trees in one of the townships. She had been stoned when attempting to deliver some clothing in a township not long before and rescued by other blacks.

Afternoon: Symposium with Roy Siegfried, Director, Percy FitzPatrick Institute of African Ornithology (the Fitztitute). Siegfried is one of the authors of South African Environments into the 21st Century

Rode cable car up to the top of Table Mountain, lovely view, but a gathering "tablecloth" (cloud cover) brought us down a little earlier than expected.

Evening: Dinner at John Raimondo's home, wife Dawn, joined by Ian McDonald, botanist who had been at the symposium, wife Sue, and Hugh Fynn, wife Lurette (he teaches geography in a secondary school). He has a lovely home overlooking the city.

Oct. 12, Friday. Joined by Jeannette Wulff, publisher of Wildlife Rancher. Met with Mr. Reinold Rau, Head of Taxidermy, and P. A. Hulley, South Africa Museum. He has a project to rebreed the quagga, an extinct subspecies of zebra, visited Sunday (see below). Hulley is interested in environmental education as this can be accomplished by a natural history museum.

Noon. Gracious lunch at Stellenbosch, hosted by Erica van Greunen. This is a lovely wine producing region. Stellenbosch is the second oldest town in the country, founded 1679. Allan Heydorn was present, a consultant with the South Africa Nature Foundation, and until recently its director. Also present, Andrew Muir, Director of the Leadership Wilderness Group, Cape Town. Stopped by the Wilderness School offices on return, near the botanical gardens, below.

4.00. Met with Brian Huntley, Chief Director, National Botanical Institute, Kirstenbosch Botanical Gardens, Cape Town. He took us up to his home, with marvelous view near top of the hillside, and we walked down through the gardens. Notable cycads here.

Evening. Dinner with Andrew Muir and his girl friend, a lawyer, Jeannette, and Vance.

Saturday, Oct. 13. Visited Quagga Project with Reinold Rau. Drove to Worcester, then to Robertson and on to Vrolijkheid Nature Reserve at a village called MacGregor. Vegetation dries out considerably. This area is on the edge of the Karoo Desert. As a project of the South African Museum, he has about half a dozen zebras there, chosen to have few stripes and to be darker as the quagga was. The quagga has been extinct since August 12, 1883, when a captive mare, the last of its kind, died in a zoo in Amsterdam. It was hunted to extinction, once ranged throughout the Karoo and Orange Free State. It was once thought a species, but Rau established that it was a subspecies, partly through taxonomy and partly through electrophoretic analysis of some scrapings from the old skins that exist. He thinks the gene pool is still available, and hopes to rebreed it. He needs zebras without stripes on the legs and toward the rear and zebras of a brownish color.

Rau says the wild cow persisted in Europe until medieval times; there were two species Bos taurus and Bos indicus (the latter from India), and that some persons have tried to rebreed them.

Also there, saw black-backed jackals that they had trapped and a caracel, also trapped. These two are bad to take lambs, and they have a project to find ways to decrease this, by modifying lambing practices, also they hope to find ways of trapping that do not catch other animals, as many caught are not the target species.

Returned a different route, coming back over Sir Lowry's Pass, nice views of False Bay.

Oct. 14, Sunday. Cape Point trip. Drove down the Cape Peninsula to Cape of Good Hope Nature

Reserve with Andrew Muir. Lovely day and lovely trip. Walked up to viewpoint over the cape. Saw baboons here. Very rich flora, though no trees native to this area.

About 5.00. Flew to Johannesburg.

Oct. 15, Monday. Lunch with Mr. Sydney Gerber, Chief Director, Environmental Conservation and Mr. Herman Grove, Director, Environmental Management, Department of Environmental Affairs, Pretoria.

Tried, but failed to meet Laura Pollecutt, Public Relations Officer for the National Environmental Awareness Campaign, and so did not get to see Japhta Lekgetta, President of the National Environmental Awareness Campaign, African National Congress.

Dinner with Braam van der Vyver, Head of Public Relations and Marketing, and Mike Landman, Chief Education Officer, Inland Parks. He will soon become a chief ranger at Kruger National Park.

Oct. 16, Tues. Breakfast with Jocelyn Hellig, Senior Lecturer, World Religions, University of the Witwatersrand.

10.00. Met Jacklyn Cock, Sociology Dept., very interested in the ANC Environmental Platform.

Lunch with John Ledger, Director of the Endangered Wildlife Trust, also again Mike Landman.

Flew to Durban, and checked in at Holiday Inn, Marine Parade, lovely and large hotel right on beach front. Evening meal with Vance and Wayne Elliott.

Oct. 17, Wednesday. Breakfast with Ian Player, who was himself headed out for the start of a trip in the Umfolozi Reserve.

Morning, at grounds of Wilderness Leadership School.

Noon: Interview with Barry Martins, Natal Daily News.

Lunch with Roland Goetz and his wife.

Trails (trips) in the bush usually have about eight persons. There is a trails officer up front with a rifle, usually a .458 or .357, also a game warden. These rifles are usually repeaters, 3-shot, but each of the two would get only one shot. Buffalo and rhino may charge as their first line of defense, lions may attack, especially if you move or appear to run away. They had to put down eleven animals in a recent year, not a very large number. But one trails officer was hurt when a buffalo gored him, though this was the first injury in recent times. Some one stays on guard all night, though they could really often dispense with this.

4.00. Met Wayne Elliott back at hotel and started north. Drove north to his home at Melmoth. Lots of sugar cane country on the way, also many tree plantations--mostly pine and Eucalyptus. They burn the sugar cane before they harvest it, gets the leaves off. Most of the timber in South Africa is planted, introduced trees, often Australian. Met Paget Haines, who was our "cook" on the trip. She works with the kwaZulu tourist board. Recent graduate and raised in the area, she speaks Zulu from her youth. Spent night there.

There are hot wet summers in kwaZulu.

Oct. 18, Thursday. Drove north and through Umfolozi Game Reserve. Wayne kept a pistol handy, in case there was trouble. Saw zebras, wildebeest, impalas, baboons. Secretary birds (head feathers were used as secretary pens), white-backed vulture, lappet-faced vulture (a really big one), hamerkop (a dull brown stork), yellowbilled kite. Rather cool and windy and they thought this kept the wildlife somewhat under cover. The Umfolozi is one of the oldest game reserves in Africa (it was one of five proclaimed in 1895). After coming out on eastern side, went to the home of Magqubi, Ian Player's famous guide.

Lunch at Ghost Mountain Inn, Mkuze.

The Zulu circular homes are kraal, not a Zulu word, but the same root as corral, Spanish and other root for circle. The Zulu word is muzi. Lots of cows, usually rather puny looking, kept by black kids who follow them around, but few fences. Two out of three of these cows die of natural causes, they are sometimes eaten and milked, but mostly kept as a kind of status symbol of wealth.

Drove on north to Tembe Elephant Park and camped in Sihangwane (see hah ng gwahn) Campground. Monkeys in the campground when we entered. Lots of crested guineafowl. Later joined by Donald Zoll, doing a book on management of elephants, lives in Arizona, consults with San Diego zoo. He was once in the Department of Philosophy, University of Saskatchewan and later in philosophy at Arizona State University.

Tembe Elephant Reserve is somewhat new. Conservationists would like to put a corridor between Ndumo and Tembe, but the ANC is troublesome. They have started to put a community center for political reasons in the way, otherwise it doesn't make much sense to put it there.

Oct. 19, Friday. Drove to Kosi Bay which has a coastal forest. Tea in home of the director, Vaughn Smith, wife Bernice Smith. Took a walk in the coastal with a black guide, at Lake Nhlange, 3rd lake, where the headquarters is. Very dense forests, lots of birds, but hard to make out. Drove down the Lake Mpungwini, second lake, where the fish weirs are.

Back to Tembe for a late lunch, and then off to Ndumo Game Reserve. Mozambique is across the Usutu River. Borrowed an open, green Land Rover at the headquarters (hutted camp), and went out with Pam Richards, an intern in wildlife conservation, who works there. Saw grey (common) duiker, red duiker, nyalas, common reedbuck. Along a river (Nyamiti Pan) we saw two white rhinoceros, first across the bay, and then drove around to get up closer, nice views. Lots of crocodiles along the river, and one group of about 12 hippopotamuses, underwater except for their heads.

Elephant is world's largest land mammal, white rhino is second, and hippo is third, and they are all here (Tembe and Ndumo); I saw the second two in one day and the first (and biggest) walked by my camp in the night!

A striking tree along the river sides is fever tree (acacia).

Ndumo is known for its birds. Saw spurwinged goose, saddle-billed stork (large one, strikingly colored), Egyptian goose, African spoonbill, glossy ibis, blacksmith plover, whitefaced duck, water dikkop, fish eagle (like bald eagle), blackwinged stilt, a kingfisher (unidentified), Goliath heron (a big one), lesser striped swallow, flamingos, pelicans,

Night again at Tembe.

Oct. 20, Saturday. In early dawn heard the call of the African broadbill. A frog like "purr-rupp." Inconspicuous bird, and I only heard it. People come from some distance to see and hear it here.

Tracks of elephants right outside the electric fence to the camp. Tracks of bush pigs both nights.

Drove back to Melmoth, showered, changed clothes, and drove to airport in Durban. Left Durban for Johannesburg, 5.00. Left Johannesburg for London, 8.00.

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end Africa trip







Nov. 19, 1990. Ran 5 miles to celebrate my 58th birthday!

Fri. Nov 23. Hiked alone to Donner Pass. Nice day, windy on top. Left Buckhorn Ranger Station about 8:30. Trail is relatively new (new to me at least) from just past the lower Ballard Road, rebuilt to avoid some private property and a cabin put in here. Trailhead has been put in at upper Ballard Road, from which it is 2 miles to pass. Snow last mile and a half underfoot, and not too easy walking. Got a blister. Better on return. One pure white snowshoe rabbit seen in the woods (where there was no snow). About a dozen deer here and there enroute in Scout.

Dec. 22. Christmas bird count with Kevin Cook, at -10°; it got up to 1° by mid afternoon. Birds not moving much.

pigeon 35
harrier 2, one female flew in right at us at Kevin's feeder
red tailed hawk, 4
black capped chickadee 8
junco 2
raven 5
magpie 18
song sparrow 7
flicker 7
Canada goose, 453
mallard 12
morning dove 1
snipe 8
starling 117
robin 3
tree sparrow 14
house sparrow 72
kestrel 1
killdeer 1
house finch 10

end 1990.

1991

includes:

Hawaii, 1991

China 1991

Jan. 30-Feb. 3. American Fisheries Society, Oregon Chapter, Conference, Salishan Lodge, Gleneden Beach. Oregon coast. Out both Friday and Saturday, on Friday at various points up and down the coast, especially some sand dunes near Florence. Saturday, with Dan Bottom, in the morning at Cascade Head Natural Area, magnificent old growth forest, then trail breaks out to sea, in the afternoon in an old growth tract on the Siuslaw National Forest.

Returned here May 1994.

Feb. 8-18. Center for Theology and Natural Science, Berkeley. Spent Sunday in Muir Woods, on the peninsula north of Golden Gate, later in the afternoon on Mount Tamalpais (tamal-pie-us). In addition to the redwoods, lots of Tanoak, Lithocarpus densiflorum, with evergreen leaves, a tree halfway between Quercus (it makes acorns) and chinquapin/chestnut, with flowers like the latter. One trillium in flower, Trillium ovatum, and a good many other things in flower. Mild climate here.

March 16, 91. Rawhide with Ron Ryder and Audubon. Yellow-billed loon, the first I ever saw. Has yellow bill and asymmetrical bill and is rather larger than common loon. Magnificent look at it through spotting scope in best of light, from the road over the dam. Also one common loon. Neither yet in breeding plumage.

Also hooded merganser, nice view. One adult bald eagle.

Coming back, at Wellington wildlife area, two short-eared owls, flying low over grassland, nice view, had both in binoculars at the same time. Also the usual of waterfowl.

March 30-Apr 2, 1991. Washington State University, Pullman. Flew to Spokane, rented car, and drove south to Pullman, arrived after lunch. Spent afternoon with Dan Holbrook and wife, drove down to see an area where the Snake River Canyon is dammed. He was once a logger. Sunday (Easter Sunday), drove over into Idaho and joined Marv Henberg and wife, Lori, and students, for rather disorganized hike into a piece of the St. Joseph National Forest, starting at a campground south of Deary. Also on hike, Nick Gies, teaches philosophy of religion at University of Idaho and Mike Clifford, Vanderbilt Ph.D., teaching there temporarily. Monday, at the University, including evening lecture, and concluding time with Michael Neville, chair. Tuesday a.m. flew home. This is the wheat belt and is the most plowed up land, every square inch of it, that I have ever seen. Very

high wheat yield. But it is not bread wheat, but noodle and pasta wheat. Deep volcanic soil.

Apr 6-9, McConnell Lecture, Alton L. Collins Retreat Center, Eagle Creek, Oregon, and Willamette University, Salem. Flew to Portland Saturday, met by Lane McGaughy, and rented car and drove to Retreat Center, checked in and had lunch. Saturday afternoon drove up to Mount Hood National Forest and hiked up the Salmon River trail, loaded with mosses. Misty rain. Sunday morning returned and drove as far as Government Camp, trying to get up to Timberline Lodge, but it was snowing and chains were required.

Returned and hiked along the lower Salmon River trail, collecting mosses in the most moss-laden woods I have ever been in. In bloom: Indian-plum, Oemleria cerasiformis (ohn-lee-re-uh ser-ass-if-formis) , an interesting shrub; Erythronium montanum, Avalanche lily; a saxifrage; Bleeding heart, Dicentra formosa; a cardamine; Oxalis, Oxalis oregona; Coltsfoot, Petasites frigidus (pet-uh-sigh-teez frigid-is). Tried another trail to a falls in the early afternoon, but too much snow.

Returned to lecture Sunday evening and Monday morning. Lecture at Willamette University in afternoon. Returned to Portland and flew out early next morning. I seem to have lost the Bushnell Custom Compact binoculars here, probably left them in the rented car, but inquiries were in vain. It really never stopped raining the whole time I was there, and I never saw Mount Hood, always buried in the clouds.

Friday, Apr 12 - Monday, Apr 15. Austin, Texas, with Texas Parks and Wildlife Symposium. Flew down Friday, met by Lee Ann Linam, in charge of endangered species in Texas, and husband, and went to barbecue at National Wildflower Research Center, founded by Lady Bird Johnson. Fire ants at the picnic. Saturday at the symposium. Sunday morning, went out to Travis Audubon Society area with David Diamond, plant ecologist, also joined by Paul Turner, doing census work, and saw the golden cheeked warbler, on endangered species list. Also saw the black capped vireo, on endangered species list, the latter in Hippie Hollow, an area with nude bathing below!

Latter part of Sunday went to a falls with Bob Murphy, Texas Parks and Wildlife, section chief. Several scissors-tailed flycatchers. Texas has relatively little federal or state land; most of it is private and this makes conservation difficult there. Austin is further south than you think; quite summery here by now.

Also a road runner. Ball moss, Tillandsia, a bromeliad, pineapple family.

Apr 17-19, University of Nevada, Las Vegas, though no opportunity to get out into the country.

Apr 27-Apr 30, South Dakota State University, Brookings. Flew up Saturday to Sioux Falls and rented car north to Brookings. Looked around campus and evening with Kent Kedl. Sunday morning went to Oakwood Lakes State Park with David Nelson. Prairie lakes, most of the trees, of which there are a number now, were brought by the settlers. Midday, saw a prairie reserve by Nature Conservancy. Lots of pelicans and a pond full of wood ducks. Saw western grebes in courtship display, where they rise up and skitter across the water. Afternoon went to Pipestone, Minnesota, nearby, where Indians mined a soft claystone for peace pipes. Sunday dinner at David Nelson's with the philosophy department. Monday on campus, supper with Nels Granholm. and drove back to Sioux Falls for early morning departure. Lots of rain on Monday. The Dakotas, they say here, should not be divided North and South but East River and West River (the Missouri, which flows through them both). East River is wetter, farmable, tall grass prairie, Central Time Zone; West River is dry, short grass prairie and badlands, Mountain Time Zone, more like Montana, Wyoming. Much the difference between Eastern Nebraska and Western Nebraska.

May 9-13, Jackson Hole, Economic Valuation of Wilderness, and Yellowstone Trip. Left Thursday early and drove up, arrived Jackson about 3.30. Hundreds of antelope in groups of 4-24 on the way up. One golden eagle. Checked into Snow King Lodge. Got with Peter Miller, Winnipeg, and wife, Carolyn, and we drove up into the Elk Refuge. 400-500 elk at some distance, though o.k. in the scope. One adult bald eagle sitting in tree. Red tailed hawk. Several mule deer. 3-4 trumpeter swans.

Rain and degenerating weather. Friday morning woke to snow. In conference all day, though in late afternoon drove back up and saw much the same, plus sandhill cranes. one moose. A few bluebirds. Heard Mardy Murie briefly that night at the banquet (wife of Olaus Marie, wrote my guide to animal tracks), before Utah congressman Wayne Owens spoke.

Saturday, May 11, after my panel, drove into Yellowstone and camped at Madison. Two moose down toward Tetons. Hundreds of bison along the road from Old Faithful to Madison. Roads very broken up from frost heaves and potholes. Cloudy but not bad, a bit cool during the night. Sunday, awoke and took off early to Hayden Valley, but started snowing and snowed off and on all day. Hayden Valley was covered with snow. Pelicans, mergansers, a few bison. This was the most snow they had had in over a decade this late in the season, they reported.

The road from Old Faithful to West Thumb snowed shut (Craig Pass), as did road south to Tetons and Jackson. Hundreds of bison all day long, often with nursing calves. Did not see any coyotes at all, though I had seen a number on an earlier trip. A few more trumpeter swans. Got a room in Old Faithful Inn for the night, an antique room built in early 1900's, with brass bed, leftover washstand, rotary light switches, clear glass electric bulbs, and unfinished wooden walls. Snowed all evening intermittently, sometimes a graupel that could be heard hitting the roof. I walked around Old Faithful area in twilight.

Monday, left 8.00 to drive around through Idaho. Sandhill cranes in Idaho, also one small porcupine alive by the roadside. Lovely mountains, coming down on the west side of the Tetons and over Teton pass back into Jackson. The Wind River mountains were quite lovely coming down, lovely clouds and a nice day, though stormy looking off in distance. Several hundred antelope again driving home.

May 22-30, 1991. XVII Pacific Science Congress, Honolulu, and visit before to Hawaii Volcanoes National Park, on the big island: Hawaii. Kilauea Crater. Thurston Lava tube. Some walks in the forest. Memorable evening walk into see the lava flow, lava pouring down into the sea. (and some decent pix).

June 1-12, 1991. North Idaho College, Coeur d'Alene, Idaho. Drove up Saturday through Wyoming, cloudy and sometimes very foggy through Wyoming, north on 1-25, but by the time I got into Montana it was beautiful. Stayed first night at campground at Big Timber. The owner had a caged bear in the campground. Drove on to Coeur d'Alene by late afternoon Sunday, stopping off at a Forest Service Station with mule display, buying maps there.

Monday through Friday teaching at National Endowment for the Humanities symposium at North Idaho College.

Saturday, June 8, drove north through Idaho panhandle (Sandpit and Bonner's Ferry), and then



over to Kalispell, Montana, and Hungry Horse. Drove down the long dirt road west edge of Hungry Horse Reservoir, long slow drive, to Spotted Bear Ranger Station, then to Pack Bridge and the main trailhead into the Bob Marshall Wilderness. Capped there. Sunday, tried to backpack into the Bob Marshall a ways, but the trail was too chewed up by horses and very difficult walking. Turned back, and drove a little further up the access road to look at the Sunburst Lake Trailhead. Saw a bear briefly on the return, from the car, and as soon as he saw me he bolted. Small one, brown.

Drove out and into Glacier National Park, capped there Sunday night at Apgar campground. Went to a Sunday evening service led by Parks Ministry seminarians, overlooking Lake MacDonald. Drove out Route Camas Road to Fern Creek, where bears were reported and got a good look at one, eating dandelions at the roadside. Watched him alone for five minutes or so, before others gathered, who tried to photograph him and eventually drove him off (after ten minutes or so).

Monday, drove up toward Logan Pass, walked to Avalanche Lake and lunched there, nice hike. Lower part is Trail of the Cedars, some fine old growth forest. Black cottonwood, Populus trichocarpa, Western red cedar, Thuja plicata, Western larch, Larix occidentalis, Douglas-fir, Pseudotsuga mezesii, Western hemlock, Tsuga heterophylla, Western white pine, Pinus monticola, needles in groups of fives, Queencup Beadlily, Clintonia uniflora, Devil's Club, Oplopanax horridum (Ginseng family), Trillium, Trillium ovatum, Blue clematis, Clematis columbiana, Western serviceberry, Asmelanchier alnifolia, Western yew, Taxus brevifolia, a shrub.

Monday evening, left the park about 4.00 and drove south. Tried to camp at National Bison Refuge, but there was no campground there, so camped in nearby small town of Charlo, free in the City Park. Tuesday, drove south, stopping a while in Missoula in camping goods stores, then steady drive south through Idaho Falls and Pocatello, then cutting across toward 1-80 in Wyoming. Bobolinks in Idaho, some large wet fields of iris in Wyoming. Capped at town of Lava Hot Springs, where there is a large hot springs. Wednesday, drove home across Wyoming. Drove about 2500 miles in the 70 Ford, without a whimper or without using a drop of oil.

June 30. Hiked to Blue Lake with Ned Hettinger, Charleston SC

July 2-7, Teaching at Aspen Center for Environmental Studies and backpack trip to Lost Man Lake. July 2, Tuesday, drove to Denver and went by airport to arrange Jane's ticket to China and Giles' to Richmond. Drove to Aspen arriving about 4.00 p.m. Lovely drive over Independence Pass. Taught Wednesday, Thursday (July 4) and Friday, three hours in morning and three hours in afternoon. Friday evening, Jody and Tom Cardarmne (daughter Kate, son Will) and friend John took me to Picnic Point, on private land, on south side of Aspen Mountain. Lovely lookout, salmon and wild rice for supper. Two deer and various wildflowers. Stayed at "The Professor's House."

Saturday a.m., drove back toward Independence Pass, and took Lost Man trail from first switchback below Independence Pass (on west side). Good climb to Independence Lake and over saddle and down to Lost Man Lake. This saddle is the highest I have ever carried a backpack (a little over 12,800 ft.). The nearest other would be Fall Creek Pass (a little over 12,600) in the Holy Cross area that Giles and I did going from Seven Sisters Lakes over to Lake Constantine. Crossed a snowfield at the pass that was about all I want to do, walked around it on return next day. Lunched at the saddle. Pitched camp and then walked **down** into valley below, where trail goes on around toward South Fork Pass and then back to Lost Man Reservoir and back out. This is also the highest I have ever camped (12,450 ft., the camp at Seven Sisters was 12,100). Rain in the afternoon but not bad, a little windy in the tent. Clearing by evening. Marmots, conies, white-crowned sparrows, pipits, no big game seen. Calm night. Walked out next day by 11.00 a.m. Pack has too high a center of gravity to make it easy walking sloping snow fields. Drove home by

4.30. Too many people coming back through the Eisenhower Tunnel, like a traffic jam at rush hour at a tunnel in an Eastern City; avoid it on July 4 weekends. Next time try Crystal Lake above Ashcroft (Stuart Mace's place); it is much recommended, though may be crowded.

Sunday, July 14. Phantom Canyon, small mammals trip, with Dave Armstrong.

Armstrong had set 160 traps the night before, caught 22 mice and rats, and saved one of each species to show and release. This is not a bad catch, maybe a little better than average. Baited with rolled oats.

The terrain changes markedly here owing to transition to Sherman granite, a Wyoming type landform, named for Sherman Hill. This is an igneous intrusion.

Deer mouse. Peromyscus maniculatus. The commonest mouse. They do not hibernate. In winter they like to live under the snow piles for shelter, making nests at the snow/ground interface. We released one up top and later, at the VIP house, saw one with a nest in a bench on the porch covering some butane bottles. Field recognition: Brownish tan color with white underparts, tail shorter than head and body and markedly bicolored.

Putting cattle on land increases the kangaroo rats. They formerly increased after the large herds of bison had come through.

Harvest mouse. Reithrodontomys megalotis. A small mouse. Builds a nest like a tennis ball. In the winter several will huddle together in a nest, maybe with their tails all sticking out. There is a groove on the face of the incisors. More brownish than the deer mouse, and smaller.

Rock mouse. Peromyscus difficilis. Big ears. Long tail, good for balancing moving about the rocks. A large mouse. This mouse is common here but this is uncommon habitat. Field recognition: grayish color, large size, relatively long ears, and tail as long as body.

Prairie vole. Microtus. Voles are called meadow mice; meadows are typically wetter and they are typically in wetter situations. A vole is a mouse, but a special kind of mouse. Little beady eyes, no ears. This one a short tail.

Pocket mouse. Pocket gopher. Kangaroo rat. All have external cheek pouches. They pack pouches with seeds, to carry them home and eat in peace. They unload the pouch by taking a shoulder and shoving it out.

Packrat middens. A midden is really just a word for a trash dump. Some are hundreds of years old. The urine of packrats is very viscous, since they are often short on water, and pollen collects in it, and is preserved as in amber. This makes them interesting archaeologically, and the flora of the past is often decoded from the pollen in packrat middens.

Mexican woodrat. Neotoma mexicana. Packrat.

Packrats are said to "trade" objects. What really happens is that they are carrying one thing, come upon another that they like better, and drop the one and pick up the other. People in cabins would find one thing missing and another in its place, dropped by the rats, and think they meant to trade.

Big brown bats and little brown bats both live in houses in Fort Collins.

July 20-21. Backpack alone to American Lakes. Left Friday a.m., late, and drove over Cameron Pass down to State Forest area. Parked and started hiking. Lunched on trail. Reached American Lakes about 3.00, and found campsite, somewhat smallish niche in the few trees above the lower lakes. Took a nap and then cooked supper in light rain. There are not a lot of good campsites here, though there is a good one across the lakes, occupied. Scrambled up to Snow Lake after supper, in rain. There is really no trail up to the lake and camping there would be impossible, all boulders along the shoreline. Ranger later said the rocks above the lakes are good for bighorn, but what would they eat?

Sunday, partly cloudy, later clearing, a pretty day. Hiked up to Thunder Pass. Met an oilman, geologist, on return. The mountains to the East are mostly an extrusive volcanic, dated 28 million years ago (Lulu Mountain, Thunder Mountain, Neota, also Mt. Richtofen). These mountains from a distance have a dark reddish cast. But the American Lakes area is an intrusive rock, also dated at 28 million years, a grandodiorite, grey feldspar. Curiously, the Nokku Crags are a Cretaceous sedimentary, turned straight up and metamorphosed by the intrusion.

Hiked out, lunching enroute. Home by 3.30 p.m. I hiked this previously on August 28, 1973, meeting a CSU graduate student geologist then. See that record. Also Don Crosby, Suk Koo Lee, and I attempted Mt. Richtofen from the Lake Agnes side on August 9, 1975.

July 28. Phantom Canyon field trip, with Matt Rand, snakes and lizards. He is recent Ph.D at Boulder, will be doing a 2-3 year post-doc at University of Texas, Austin. Did his dissertation on the red-lipped plateau lizard, see below. Carpoled the last miles in with David McPhee, CSU in Family Development, wife, and little daughter, who is "fond of snakes."

The five harps known in the reserve are:

1. Red-lipped fence lizard. Sceloporus undulatus (Eastern fence lizard) erythrocheilus, which mans red-lipped. Really just a subspecies of the Eastern fence lizard, known over much of the southern United States. It is only on rocks in this area, or going and coming between rocks. Rand caught two of these during the day. They do push ups for territorial display. On the underside there are two body stripes that are cobalt blue, and they display this. They also display an orange or yellowish chin, color is more prominent in breeding season. Rand thinks there are two forms orange and yellow, and that generally the orange can oust the yellow. A male will have a fair sized territory for a lizard, in which there are 2-3-4 females. Nevertheless many of the yellows drift between territories and manage to copulate with the females anyway.

They are easy to catch with a loop that can be retraced on a length of fishing pole. They often have small mites that attach to them, especially on the rear legs; they lose these when they shed their skin. The males can be told by two enlarged scales at the vent. They eat grasshoppers, spiders, don't seem to like moths.

Lizards have external ears; snakes do not. Even legless lizards can be told this way.

2. Prairie rattlesnake. Crotalus viridis viridis, a subspecies of the Western rattlesnake, Crotalus viridis.

3. Yellow-bellied racer (snake). Coluber constrictor. Eats lizards. Moves fast, and you usually only get a glimpse of it.

4. Bull snake. Pituophis melanoleucus (pit-u-o-fis ml-lan-o-lu-kus). Though often much larger, they can look and act like rattlesnakes, even make a buzzing sound. We caught one down at the river; I spotted it and Rand picked it up. Lots of hissing at first, but once up on the air in somebody's arms it calmed down. They can bite, though they usually do not. This was a big one, six feet long. It sticks out its tongue constantly, for a cross between taste and smell. The signals go from the tongue up to two Jacobson's organs that detect odors.

5. Western Terrestrial Garter Snake. Thamnophis elegans.

Both the rattlesnake and the gartersnake are viviparous, bear their young alive. The others hatch eggs.

6. Milk snake. Lampropeltis triangulum. Secretive, should be here; some say they have seen it. Black, white, red or orange bands around body.

7. Horny toad. Could be here, though it may be too cold for it. It is on the plains, but this is 1,500 feet higher, and the winters are rough. The horny toad is an ant-eating specialist and you can often find them on the periphery of an ant mound, taking stray ants. They won't go into the ant hill or sit on top of it, because the ants will mob them.

There are no toads or frogs here, probably because there is not enough still water for tadpoles to develop. No turtles known.

Snakes have to get out of the heat soon, because their whole body is on the ground. Lizards can stay out when it is much hotter, because they only touch the ground with their feet.

A wrist watch can be used to cast a beam of sunlight into crevices to see if there is anything in there. Works better than you would think.

Lewis's woodpecker. Common here; we saw several. Likes open areas. Look for a black bird at a distance, with red sides/face; the red comes through some distance away. It may not act like a woodpecker, but sit up in the top of a tree as though it were a flycatcher. Doesn't undulate wingbeats, and can look more like a small crow.

One very nice golden eagle, watched soaring at lunch.

August 21-22. Trip to find Drosera, sundew, this time with success. With Kevin Cook. Left Ft. Collins, 6.00 a.m., and drove to Walden. Met Betsy Neely, who first found the plants, and Holly Richter there in Forest Service office, with Ranger Charles (Chuck) Cobb. Holly Richter has been recently employed by Nature Conservancy to do a study with reference to making this a Research Natural Area. (Address: Box 3514, Lyons, CO 80540).

On the trail about 10.30, good hike in, Kevin and I backpacking. Betsy soon found the Drosera, in a smaller pond, not the bigger lake (at 9200 ft) we searched last year. It is easy to find here. She eventually found a little at the big pond, over near a ditch on the n.w corner. They hiked back out same day. Contrary to the topos, these lakes/ponds do not have any external drainage. They are, apparently, old glacial kettles.

Some of the interesting things in here are:

Comarum palustre, about like a Potentilla. Purple Cinquefoil. Has red leaves and petals, petals

shorter than the sepals. Found here the first time east of the divide by Betsy Neely.

Calamagrostis, the common grass here

Potamogeton, with floating leaves.

Spiranthes romanzoffiana. Lady's Tresses.

Carex lasiocarpa, with hairy perigynium, found here only in Colorado. Pubescent on the faces, not merely on the margins.

Carex canescens. Yellowish, common.

Sparganium minimum. Burreed.

Swertia perennis. Star gentian.

Kevin and I pitched camp, walked back in to the pond with the Drosera.

Thursday. Kevin and I worked our way down the chain of small ponds/depressions running north east from the lake at 9200 ft. down to the still bigger lake at 8985 ft., so marked but unnamed on the topo. Most of the small ponds on the map do not really have water in them, but are wet Carex areas. Found a wood frog (Rana sylvatica) in the open area, wet but no standing water, just s.e. of the lake. This was Kevin's first encounter of a wood frog in Colorado, also mine. Good black mask across the eyes makes this one easy to recognize.

The frogs we saw in here are:

1. (Striped) Chorus frog (Pseudacris triseriata). Small, an inch or so. We saw lots of them. Stripe through eye from snout to groin. Background color varies, brown, green, red, and we saw all three colors. Stripe color also varies. The most common dorsal pattern is stripes, but it may be spots in rows, or scattered, or anything in between.
2. (Northern) Leopard frog (Rana pipiens). Large dark spots on back.
3. Wood frog. Rana sylvatica. Above.

Two others that might be here are:

4. Western Toad. Bufo boreas. Also called Boreal toad. Warty skin.
5. Tiger salamander. Ambystoma tigrinum. Our only salamander.

We found abundant Drosera in the lake at 8985 feet, in the n.e. end, where there is an extensive Sphagnum mat, floating. You can jump up and down on it and shake it. This is in the vicinity of a big, abandoned beaver dam at this end of the lake. Again, contrary to the topos, there is no external drainage.

Took compass bearing due south and went back to trail, and built a good cairn where we hit the trail, also there is a blowdown across the trail here. So in the future you could go to the cairn, head due north, and hit the lake. Lunched at the campsite, and then hiked out, reached the Scout at 4.00, and drove home, by 9.00 p.m.

Saturday, September 28, 1991. Conference on Biology, Ethics, and Origins of Life. Field trip to Rocky Mountain Park, Trail Ridge Road and elk bugling. Saw about 50 elk, and heard 20-25 good calls, but enormous numbers of people there.

October 7, 91. Fabulous aspen in prime color in South Canyon Creek, first canyon west of Glenwood Springs, seen from the air on first leg (Denver - San Francisco) of the trip to China. This seems to be BLM and private land, but it looks as though you could drive up there. Quite a lot of nice aspen in much of this country.

October. In China.

report starts on new page

Report on Trip to China, October 1991
Holmes Rolston, III, Department of Philosophy, CSU

General Comments

China has 1/14th of the total land area on Earth, 1/4 of the world's people. The land area is

approximately the size of the United States, the population over four times that of the United States. There is immense variation in topography, climate, soils, ecology, and ethnic peoples. The altitude ranges from 300 meters below sea level (in the Turpan Depression of northern Xinjiang) to 8800 meters (in the Himalayas, the "roof of the world"); ecosystems range from tropic to alpine, rainfall varies from over 250 cm. annually to under 1 cm. China is unique in Eurasia in having an unbroken forest from the tropics to boreal regions. The flora is among the richest in the world, some 30,000 species (U.S. about 20,000), including 5,000 woody species, 2,800 tree species (U.S. less than 700).

China has three of the longest rivers in the world, rivers that do not always flow peacefully, due to enormous catchment basins, often steep and barren, that shed water rapidly, and due to the erosion of loess soils that build up downstream deposits subject to periodic breakthrough and flooding. The Huang (Yellow) River ("China's Sorrow") has killed more people than any other feature of Earth's surface. In China, forestry is especially important in relation to soils and sedimentation and downstream water flow. Although the Chinese have lived more or less in harmony with their landscape for millennia, they today more nearly press the carrying capacity of their landscape than do most other peoples. Human development and environmental conservation are as integrally related in China as anywhere else on earth.

The immense Chinese population is very unevenly distributed on the landscape, due to the variation in climate and topographic features. In general China is about twice as elevated in landscapes as is the United States. Eastern China is densely populated, but the interior is often lightly populated and some parts are almost unpopulated. Some 90% of China's population live on little more than 15% of the land surface. The massive size of the population, together with the large and diverse land areas, pose problems of governability faced by no other country in the world. The climate is regarded as being more erratic and unpredictable than in most other nations.

China as a nation is not especially well-watered; the runoff is about one-fifth what it would be in other large nations. The actual water caught and used in the United States is about the same as the total amount of rain that falls on China, areas of comparable size. The result is a large population, unevenly distributed, an uneven rainfall, and strain on water resources.

The United Nations Environment Program reports that there are over 300 environmental awareness groups in China. There are also over 60 universities in China teaching courses on environmental engineering and ecology. A monthly English language journal, China Environment News, is published with UNP. assistance, together with a quarterly Chinese language journal, World Environment.

Environmental Ethics in China

The comments that follow result from a brief visit and are inevitably impressionistic.

For most leaders and intellectuals in China, environmental ethics, if a legitimate inquiry at all, is rather simple theoretically, though sometimes complex operationally in practice. The problem is maintaining an environment that will support human development. Old China was a backward nation due to the exploitation of the masses by the elite, but New China (Marxist China, since 1949) is ideally competent at large-scale, long-term planning, and citizens can be expected and even required to put the common good first. Environmental pollution and the inequitable distribution of resources is capitalism's problem.

Nevertheless China discovered that it had problems in the sixties and seventies, and the current

Marxist account is that leaders assumed a maximum exploitation mode, sometimes through ignorance of the feedback loops between nature and culture, sometimes through overweening greed. That has since been rectified, a model of "rational use of nature" has replaced an irrational model. Society in harmony with nature is a better model than society exploiting nature.

The ethical issues arise mostly with distribution of what is desired and undesired. Much of China is subject to erratic and uncertain rainfall; usually there is either too much water or not enough. The question is who gets it when there is not enough and who gets it when there is too much. Likewise with food and pollutants. Especially with the Marxists, these may not be considered ethical questions, but questions of sound scientific management. Managers, it can be assumed will know and seek the optimal common good. Citizens do not have the expertise to follow technical analyses of pollution distribution, although they may have to be educated what to do in the required cleanup.

Such issues at once intersect with the population problem, which is perhaps China's number one problem. This is thought of as an ethical problem, though not particularly a problem in environmental ethics. Again early leaders of the New China made a serious mistake, thinking that rapid exploitation of nature under the new socialist regime would automatically take care of the population problem. Now, stern measures are required. Policies differ in regions of the country, especially in the autonomous regions, but the following is typical. One child is permitted and will receive a free high school education, free health care, and other benefits. With the second child, all such benefits are canceled. With a third child various punitive measures begin; adverse pressures in the work unit step up; with a fourth child the parents are subject to being dismissed from their jobs. Reports (which need to be verified from better sources) are that in sections of the country where boy children are particularly desired, this sometimes means that girl babies are less well cared for in early infancy, or even let die, in the hopes of having a son the second time around.

In "urban management" style environmental ethics, wildlife, wildlands, endangered species, ecosystem integrity, animal rights will never be mentioned. The native wildlife has been gone for centuries, although the pariah species of civilization remain (English sparrows, pigeons, magpies, mice, rats). The streams do need to be kept pure enough for edible fish and invertebrates (prawn, shrimp) that the Chinese enjoy. The markets are full of animals to eat, still alive or recently slaughtered (no refrigeration), including dogs and cats. If asked whether there any vegetarians by conviction, one gets the reply that some Buddhists formerly believed this (following from ahimsa, non-injury, the first Buddhist commandment), but that Buddhism is gone, and that the vegetarian Buddhists were mostly under the excessive sway of Indian Buddhists anyway. Most Chinese Buddhists were too practical to be serious vegetarians.

Dogs are not permitted in the cities, though cats can be kept as pets.
Many fox skins were for sale in the stores.

The Chinese Academy of Social Sciences; Universities in Beijing.

The Chinese Academy of Sciences was one unit until 1977, when, for political reasons, it was separated into the Chinese Academy of (Natural) Sciences and the Chinese Academy of Social Sciences. There are about 80,000 persons in the Chinese Academy of Sciences. There are about 5,000 persons now attached to the Chinese Academy of Social Sciences, and it does not receive particularly good support as the government is not altogether happy with some of the free-thinking elements there. Within the Chinese Academy of Social Sciences there are various institutes, one of which is the Institute of Philosophy. The Chinese do not have any field called the humanities, though they do have art, music, and literature, outside the social sciences.

The Institute of Philosophy contains about 260 philosophers in about ten departments: Department of Historical Materialism, Department of Dialectical Materialism, Department of History of Traditional Chinese Philosophy, Department of Dialectics of Nature, Department of Ethics, Department of Aesthetics, Department of History of Western Philosophy, Department of Modern Western Philosophy, Department of Logics.

The Chinese do philosophy of nature under the term "dialectics of nature," which for them also includes philosophy of science. In addition to the Department of Dialectics of Nature in the Chinese Academy of Social Sciences, the Chinese Academy of Sciences has a Department of the Dialectics of Nature in the Graduate School.

A principal philosopher interested in environmental ethics is Professor Yu Mouchang, who is a research professor with the Institute of Philosophy, Chinese Academy of Social Sciences. He has been there over thirty years, been reading environmental philosophy for ten years. See bibliography below.

Tsinghua University has about 10,000 undergraduates, about 3,000 graduate students. The total university community, support staff and others is about 40,000. There are even factories on campus, for the applied training of the students, all of whom are encouraged to have some factory training. Students may also work to pay for their college expenses. There is a Department of Social Science, within which there is a section of philosophers, about 18 philosophers.

Beijing University is alleged (at least by the others) not to welcome foreign visitors and lecturers. There were several accounts of Westerners trying to enter there, unaccompanied, and being turned back at the gate. But Yu Hui took us there without any problem and gave us a tour of the campus.

People's University is a large university with a generally open campus. They do not have strong programs in the natural sciences.

Lecture Schedule

Thursday, October 10. Lecture at Graduate School, Chinese Academy of Social Sciences. Host: Professor Chen King, Director, Department of Ethics, Institute of Philosophy, and Secretary, Chinese Society of Ethics. Host: Prof. Luo Guojie, Vice-President of the People's University of China and Chairman, Chinese Society of Ethics. Host: Professor Wei King-Min, Director, Section of Ethics, Department of Philosophy, Beijing University, and Vice-Chairman of the Chinese Society of Ethics. Host: Dean Li Bochum, Department of Dialectics of Nature, Graduate School, Chinese Academy of Sciences.

Friday, October 11. Lecture at People's University, hosted by Chinese Society of Ethics. Hosts: Same as Thursday, Oct. 10.

Monday, October 14. Lecture at the Research Center for Eco-Environmental Sciences, Department of Systems Ecology. Hosted by Dr. Zhao Jungshu, Professor and Deputy Director. The Research Center for Eco-Environmental Sciences has about 700 persons, with about 30 in the Department of Systems Ecology. These thirty mostly study facets of human ecology. Also met here Jason Weisman, an American who is a visiting researcher.

Tuesday, October 15. Lecture at Chinese Academy of Social Sciences, Institute of Philosophy. Hosts: same as Thursday, Oct. 10. Also Qiu Renzong, Senior Researcher, Institute of Philosophy, Chinese Academy of Social Sciences. His principal field is medical ethics. He spent a semester

at Georgetown University and a semester at the University of Wisconsin. He is writing the article on the history of Chinese medical ethics for the Encyclopedia of Bioethics, Edition II, Macmillan.

Wednesday, October 16, Lecture at Qinghua University. Host: Professor Liu Yuang-Liang, Vice-Chairman, Department of Social Science, Tsinghua University. Host: Professor Quan Yi, Department of Environmental Engineering, Director National Laboratory of Environmental Simulation and Pollution Control, Tsinghua University. Host: Zeng Xiaoxuan, Department of Social Science, Tsinghua University.

Thursday, October 17. Lecture at Beijing Agricultural University. Hosts: Professor Han Chun-Ru, Department of Agronomy, Beijing Agricultural University. Host: Professor Wang Hong Kang, Director of the Environmental Protection Major, Beijing Agricultural University. Host: Professor Zhang Xiang-Qin, Social Science Department, Beijing Agricultural University. Host: Professor Zheng Wufu, Social Science Department, Beijing Agricultural University.

Met at the airport by Prof. Lin Xiashui and Fan Rui Ping, our interpreter through much of the trip. Met at the Guest House by Professor Liu Yuang-Liang, Vice-Chairman, Department of Social Science, Tsinghua University.

Guide for the weekend was Xu Xiang Dong, Department of Dialectics of Nature, philosophy of cognitive science.

Suzhou Institute of Urban Construction and Environmental Protection

Flew to Shanghai and rode train to Suzhou for visit to Suzhou Institute of Urban Construction and Environmental Protection, also Suzhou University.

Interview and consultation:

Host: Yao Yanxian, President.

Host: Quanda Yang, Dean, and Chairman, Department of Environmental Protection.

Host: Dr. Zou Enmin, Department of Environmental Protection

Host: Professor Xu Guangming, Marxism Teaching Office, a philosopher who has a translation of my Environmental Ethics in progress, with a team of three graduate students assisting him.

At Suzhou University:

Dinner hosted by Department of Politics, Suzhou University. There is no department of philosophy, but philosophers are housed in the Department of Politics.

Host: Professor Wang Junfu, Chairman, Department of Politics, Suzhou University.

Bibliography

--Qiu Renzong, editor-in-chief, Guowai Ziranhexue Zhexuewenji 1990 (International Philosophical Problems in Natural Science 1990), Chinese Academy of Social Sciences, Institute of Philosophy. Beijing: Social Science Press, 1991. ISBN 7-5004-0885-4/B 181. There are section introductions, but all the articles are translations from Western books and journals. Section I is on Philosophy of Science: Scientific Materialism. Section II is on Science and Society: The Relationship between Human Beings and Nature. The section editor is Yu Mouchang, Institute of Philosophy, who gives an introduction to environmental ethics, "Current Focus of the Study of the Relationship between Human Beings and Nature." The section contains three articles (1) G. A. Davedova, "Problems of the Relationship between Human Beings and Nature in Marxist Historical Philosophy" (pp. 104-

129, translated from Russian; (2) M. B. Kushkova, Human Beings and Nature (pp. 130-145, translated from Russian; (3) Holmes Rolston, III, "Is There an Ecological Ethic? (pp. 146-157, translated by Ye Ping (Northeast Forestry University, Harbin) from English in Philosophy Gone Wild, originally in Ethics. Section III is on Philosophical Problems of Nature: the Self-Organization of Nature. It contains a dozen articles, for example Ilya Prigogine on irreversible thermodynamics and several articles inquiring how evolutionary creation has taken place through the self-organization of nature. The book has just been released; they claim it has sold well, though many books of this kind in China are as much "distributed" to libraries and agencies as sold. Already about 3000 copies have been sold or distributed.

--Yu Mouchang, Sheng Tai Lun Li Xue (Ecological Ethics). Xi'an (in Shaanxi Province): Science and Technology Press, forthcoming. The manuscript was completed in 1988, but is still in press.

--Yu Mouchang, Sheng Tai Xue Zhe Xue (Ecological Philosophy). Kunming: People's Press of Yunnan Province, 1991. In Chinese. 3.60 Yuan. 267 pages. ISBN 7-222-00741-5. Nine chapters. Section I is foundations: holism in ecosystems, the laws of ecology, energy in ecosystems, and the major categories of ecophilosophy. Section II is on the methodology of ecophilosophy. Section III is on ecology and modern society, applying the theory of ecology to practice in environmental affairs. The author sets forth a Marxist ecophilosophy for China.

--Yu Mouchang, Sheng Tai Xue De Xin Xi (Ecological Information) Shenyang (in Liaoning Province): Science and Technology Press of Liaoning Province, 1982). Written for a popular audience to introduce some fundamental ecological ideas, at a time when ecology was a new subject in China.

--Yu Mouchang, Dan Da Shehui Yu Huan Jing Ke Xue (Contemporary Science and Environmental Science) Shenyang (in Liaoning Province): People's Press of Liaoning Province, 1986. 300 pages.

--Yu Mouchang, "Sheng Tai Lun Li Xue," ("Ecological Ethics"). Chapter 12, pages 297-308, in Chen King, Xian Dai Lun Li Xue (Modern Ethics). Chong Qing (in Sichuan Province): Chong Qing Press, 1990. Introduces Aldo Leopold's land ethic, as interpreted by Holmes Rolston and J. Baird Callicott.

--Two articles from Environmental Ethics have been translated into Chinese. The first is Richard Cartwright Austin, "Beauty: A Foundation for Environmental Ethics" (Fall 1985), translated by Yu Hui (the daughter of Yu Mouchang, above, who teaches English at Beijing University) and appeared in Ziranxue Zhexueweni (Philosophical Problems in the Natural Sciences) 1988, no. 1, pp. 85-92.

--The second is J. Baird Callicott, "The Metaphysical Implications of Ecology" (Winter 1986), translated by Yu Hui, and appeared in Ziranxue Zhexueweni (Philosophical Problems in the Natural Sciences) 1988, no. 4, pp. 66-74.

This journal was published by the Institute of Philosophy from 1978-1990, but they were forced to stop publication when their financial support from the government was withdrawn.

--Wang Rusong, editor in chief, Zhao Jingzhu and Dai Xiaolong, editors, Human Ecology in China: Annual Report of the Department of Systems Ecology 1989, Research Center for Eco-Environmental Sciences, Chinese Academy of Sciences. Beijing: China Science and Technology Press, 1990. 251 pages, all in English. The reports are apparently seldom printed in English but this one was made possible by a UNESCO Man and the Biosphere grant.

--Nong Ye Zhe Xue Ji Chu (The Basis of a Philosophy of Agriculture), by a Working Group of the Chinese Society of Dialectics of Nature. Beijing: Science Press, 1991. 361 pages. Entirely in Chinese. A contact and one of the working group is Zhang Xiang-gin, Beijing Agricultural University, Beijing China. She is also one of the authors.

--Holmes Rolston, III and James E. Coufal, "A Forest Ethic and Multivalue Forest Management," translated into Chinese, and used in an inside staff news source, Information about Ecophilosophy, at Northeast Forestry University. Publication forthcoming. Translated by Ye Ping, Social Science Department, Northeast Forestry University, 150040 Harbin, China.

--Leopold, Aldo, "The Land Ethic," translated by Ye Ping, a philosopher at Northeast Forestry University.

--Rolston, Holmes, III, "Values in Nature," translated by Yu Goping, an economist at Northeast Forestry University

Both are translated into Chinese in a special issue of Information of Ecophilosophy, an occasional publication of the Research Office in Ecophilosophy of the Northeast Forestry University, Harbin, 1989, No. 2.

--Ye Ping (see above), "Man and Nature: A Review of Western Ecological Ethics" (in Chinese), Tzu-Jan Pien-Cheng-Fa Yen-Chiu (Studies in Dialectics of Nature) 7(no. 11, 1991):4-13, 46. Published by the Chinese Association for the Dialectics of Nature.

--Ye Ping (see above) has a series of six short articles on environmental ethics in Lin-Yeh Yüeh Pao (Forestry Monthly) (in Chinese) running from August through December 1991. "1. What Is an Ecological Ethics?", July, no. 7; "2. The Conception of an Ecological Ethics," August, no. 8; "3. The Growth of an Ecological Ethics," September, no. 9; "4. The Present Situation in Ecological Ethics," October, no. 10; "5. Ecological Ethics Applied to Forestry Management," November, no. 11; and "6. Ecological Ethics and 'Two-Crisis' Countermeasures," December, no. 12. The two crises are that waste materials in air pollution harm the Earth in two ways: destroying forests and creating a greenhouse effect.

--Lester Ross, Environmental Policy in China. Bloomington, ID: Indiana University Press, 1988. 240 pages. Ross maintains that "exhortation and environmental ethics" (p. 60) have been massively tried in China and massively failed. By this he means that earlier Marxist environmental campaigns, such as those for reforestation, exhorted the Chinese to good environmental citizenship, to do what was in the larger public interest, such as plant trees for future generations, and that, although this resulted in the largest tree planting program in human history during waves of enthusiasm, the tree programs failed because there was no sustained monitoring and interest waned as soon as the enthusiasm passed. The trees died for lack of care. No one owned them; everybody owned them. In contrast, all that will work is programs that appeal to the self-advantage of the person over a foreseeable future, such as woodlot planting for fuel. Somebody owns the trees. Or at least is entitled to the wood and responsible for their care. Incentive changes behavior, not moral exhortation. Richardson, see below (p. 180), is not so sure.

--S. D. Richardson, Forests and Forestry in China (Corvelo, CA: Island Press, 1990). 353 pages. Excellent, thorough, by a New Zealand forester who has observed forestry in China over thirty years. Balanced portrayal of the successes against the massive failures. An earlier book, of which this is a major revision, is Forestry in Communist China, 1966.

--Vaclav Smil, The Bad Earth: Environmental Degradation in China. Armonk, NY: M. E. Sharpe, Inc. and London: ZED Press, 1984. 245 pages. Extensive account of serious environmental

degradation and highly critical of the Maoist government and massive, bumbling Chinese bureaucracy. Deforestation and resulting erosion and flooding is China's most serious environmental problem. Much of this results from Marxist idealism about growing grain in unsuitable areas. The land use mistakes, when coupled with population, growth, have China on a disaster course. The silting of the Huang (Yellow) River is one of the most intractable environmental problems on Earth. The most fundamental problem is not population size, or relative poverty, or political instability; it is a staggering mistreatment of the environment, which will prove the most serious check on China's reach toward prosperity. Smil is a geographer at the University of Manitoba.

--Li Wenhua and Zhao Xianying, China's Nature Reserves (Beijing: Foreign Languages Press, 1989), 190 pages. Li Wenhua is one of China's foremost ecologists; Zhao Xianying is a geobotanist who has studied in the United States. Quite useful general introduction to nature reserves in China. The rationale they give: resources, aesthetics, scientific research, environmental protection, education, tourism. Humans have, in the past, had the wrong attitude toward nature, one of exploitation. "We once judged our ability to squeeze nature for all its worth as an important indication of humankind's civilization and progress. Often as not, the cost of our conquests over nature was the devastation of those elements so vital to our own existence--the earth's environment and natural resources. We were, in effect, destroying our own life-support system. Living in harmony with our planet means cherishing and protecting the natural world" (pp. 1-2).

China was late forming any conservation strategy. The first reserve was in 1956, and nineteen reserves were set up by 1966, but most of these gains lost in the Cultural Revolution. Since 1976 there has been steady improvement. By late 1981 there were 76 reserves, by 1986 there were 383. A goal is 500 reserves by 2000. But one must use considerable care; many of these are paper reserves only (the designation as a reserve of the forests that remain on a former Buddhist temple site, although the area may be much used).

--Xu Weishu, Birds in China (Beijing: Foreign Language Press, 1989). 72 pages. Short introduction to the birds of China.

Environmental Issues

China never had and still does not have a long-distance food transportation system. Energy costs are too high and spoilage too great, without refrigeration. Farmers near the big cities supply locally, and most of what is eaten in Beijing is grown within 100 kilometers of the city. For several thousand years the urban wastes, mostly food wastes and excrement, all easily biodegradable, was recycled on the fields near the cities. Farm animals ate the garbage and the nightsoil went on the fields. Repeated crops of rice and vegetables did take their toll on soil nutrients and farmers were often eager to go to the cities and receive the free fertilizer. All that changed when the cities industrialized. Chemical fertilizer is available, cheaper if one takes into account the time and cost spent collecting the natural manure. Herbicides and insecticides are available and can be combined with the fertilizer (all applied by hand or with very simple machines. And the stuff coming down the sewers from the industries is toxic or not biodegradable.

Miscellaneous Notes

Chinese academics are poorly paid. They make about \$ 40 per month. When several academics said they would like to be able to stay informed on activities in environmental ethics, I mentioned the International Society for Environmental Ethics (ISEE) and the Newsletter, to realize that the annual dues (\$ 10.00) is a quarter of a month's salary. They are not able to buy Western books,

and must use library copies, which are often in short supply.

Few Chinese can afford air travel, and most must still get around on trains and buses. Or bicycles. To attend my lectures one professor had traveled by rail from the Shanghai area (940 miles, 23 hours on the train, each way), another from the Harbin area (northeast China, 870 miles, 20 hours on the train, each way.)

end of China report

Saturday, November 16, 1991. Charleston, SC. Bull Island, in Cape Romanain Migratory Bird Refuge. Spoke at College of Charleston, Thursday and Friday. With Ned Hettinger. The Island was extensively damaged by hurricane Hugo a couple years before. Most of the pine trees were broken off 20-30 feet up the trunk. There are many palms and these stood pretty well. Also live oaks, which had the smaller branches blown off but the massive trunks stood. winds were 150 mph and some say higher, for about two hours, though there was rain and wind for several days. Sullivan's Island, where Ned lives, was evacuated. His (rented) house was blown down; he picked up the pieces and put them on a lot he bought.

Took boat over. The island is separated from the mainland by extensive Spartina wetlands, with some channels through open water. About 40 minute ride. Red-headed woodpeckers and Eastern bluebirds at dock. Nice great horned owl perched enroute, said to feed on the rail in the Spartina. Out at low tide and oysters evident; return at high tide. Lots of oystercatchers. Lots of cormorants. Maybe some loons. Both great egrets and snowy egrets. Great blue herons. Whimbrels.

Walked around the island. The island has two red wolves on it; one is penned and the other free. The pups from this pair are reintroduced in North Carolina. Saw wolf track several times. Also

raccoon tracks and turkey tracks. Ate lunch at beach on the open ocean and saw about half a dozen porpoises. Returned inland and went to an area with alligators; saw four in the swamps. The first one of considerable size; others average; mostly in the water. The ponds on the island are more or less diked off from the salt water, originally to raise rice, but later to attract freshwater birds, waterfowl for hunters. Hugo breached these dikes to some extent. But there are perhaps two hundred alligators said to be on the island; they must nest in freshwater but after can take brackish water.

Two more porpoises in water near boat on return. Previous day there was a nice Cooper's Hawk in the City Park at the Battery.

Dec. 4, 91. Ran 5 miles to celebrate belated birthday. I was too sick to run on Nov. 19, still recovering from the virus/bug I picked up in China.

Dec. 9, 91. Lion Gulch alone. 21 bighorns on the last rimrock before entering Big Thompson Canyon. They seem to be moving down into the Big Thompson Canyon country. Left trailhead about 9.15, good hike up, nice weather. Snow underfoot half the time, but well packed from others who had hiked it. Lunched up top at Walker Homestead (where Giles, Adam McCambridge, and Mark M. and I camped). Hiked out by 3.00. Drove up in park, 108 elk in two big groups. 15 deer. Use a temporary, quick stuff sack for the brown down jacket, when you have to take it on and off frequently.

Dec. 21, 91. Christmas bird count, with Kevin Cook, and five others. Up and down the river at the Eeyrie. Half day, cold in early a.m, but after that quite pleasant. Clear sky.

white-crowned sparrow 3
black capped chickadee 12
magpie 47. Very active
great blue heron 2
starling 230
rock dove 61
waxwings, probably Bohemian 25
crows 20
brown creeper 2
robin 31
flicker 10
geese 54
downy woodpecker 2
gull sp. 1
song sparrow 7
tree sparrow 10
kestrel 11
house finch 7
blue winged teal 7
mallards 35
juncos 20
snipe 7
common merganser 4
common goldeneye 4
golden crowned kinglet 2. Very nice view in good sun.

Magpies build a nest of sticks. Fox squirrels build a nest of leaves.

Dec. 28, 1991, Eaton Reservoir vicinity, Trail 315, toward Pratt Creek, Deadhorse Mountain. Left about 7.00 in Scout, alone. Drove to Cherokee Park uneventfully. Good flock of robins enroute. Snow removal stops at the junction in Cherokee Park on Road 80c, toward Sand Creek Pass. Nevertheless it had been a little plowed here and there, and much driven over, so there was no trouble, although I was on snow pack frequently. Good redtail hawk seen in tree through scope. Clear day. Originally headed toward Acme Creek, but decided to do the Trail 315 instead. Started without snowshoes, but turned back to get them and was on snowshoes all the time thereafter. Started hiking about 10.15, lunched up the trail about 12.30, back out by 2.30. Returned to hike the Acme Creek trail s.e. parallel to the creek, until it reaches the right angle turn to s.w. at Acme Creek (from about 2.45-3.45 p.m. Foot traffic only here, try it in summer.

Highlight of the drive out, about twilight, was a bobcat, seen nicely. It leapt a bit on some rocks left of the road, and looked different. Bounding look was not like a coyote. I stopped and got a good look through binoculars. At first it was a bit hidden, and I thought maybe I had mistaken a large owl or something. But then it came out unmistakably, and shortly vanished. The ruff (frill of hairs about the neck) and the pointed tufts on the ears are memorable. This was in Phantom Ranch country, 3-4 miles west of the Lower Wildlife Unit Campground (where I once left to hike into Phantom Canyon from the west side). The one I saw at Ft. Collins waterworks was June 6, 1970, twenty one years ago!

Thirty deer during the day, one group of fourteen. There is a good deal of accessible country up this way, mixing both the National Forest and the Colorado Division of Wildlife areas.

end 1991.

1992

January 5, 1992. Loch Vale. Tried to get Giles to go and went by his trailer. Left about 7.30, on trail about 9.30. Hardpacked snow and I walked all the way to the Loch, carrying snowshoes on pack. Lunched at the frozen lake. Hardpacked snow made it sometimes a little hard to get a footing where the snow had filled in the trailbed at a steep angle. Lovely day, virtually cloudless. Hiker was running up behind me coming down and I turned quickly to let him by, stepping back, lose my balance and fell. Otherwise uneventful hike out. 12 deer. 205 elk, 100 of them at one time in Horseshoe Park. Saw 25 people carrying or on snowshoes and nobody at all skiing, but the trail would have been pretty icy for skiing.

Saturday. February 22. Portland Oregon. Rented car and drove out the Columbia River Scenic Highway. Road goes up the Sandy River and climbs to the top of the upland, though which the Columbia has cut a canyon. Lunched in car at Vista House on Crown Point. Road descends with many falls. Walked in to Bridal Veil Falls. Hiked starting at Wahkeena Falls area for about three miles, returned and went to Multnomah Falls, now towards dark. Spectacular falls. Hiked here a little. Drove in to Embassy Suites Hotel in Tijingard, a Portland suburb.

Sunday. February 23. Drove out to Mount Hood area and hiked Salmon River trail in majestic old growth, same trail I hiked last year. Lovely day, dry the whole hike. Got up to a high bluff open area with scenic overlook, covered with Rhacomitrium canescens. Several wrens notable in here. Five miles roundtrip, in here about seven hours. Returned to hotel after dark.

Monday, February 24. Lecture in conference. Flying home, saw Mount Hood clear for the first time this year or last. Also clear view of Mount St. Helens to the north and even Mount Ranier in the further distance.

Wednesday, April 8. Lake Woodruff National Wildlife Refuge, near Deland, Florida. Spinoff from speaking engagement at Stetson University, following University of Georgia, and Yale University Law School. Host: Don Musser. Breakfast on a cook-it-yourself griddle at DeLeon Springs. Walked around the springs area. Then to Lake Woodruff Wildlife Refuge, visited Visitor Center, and then walked around Pool 1. Mockingbird, red-bellied woodpecker, common gallinule, coot, cormorant, anhinga, glossy ibis (seems to be uncommon here), black-necked stilt, great blue heron, Louisiana heron, snowy egret, boat-tailed grackle. There were two alligators, one quite large (12 feet) in the water, though half visible. Two thirds of the way around the pool we came upon another, about 5 feet, completely out of water on the water's edge, and we passed only six feet away from it. It never moved.

Thursday, April 9. Waiting for transfer on limousine to Orlando, at countryside motel transfer

stop, still dark in early morning. Heard whippoorwill call several times.

Nice weather throughout the trip. Dogwood was in good bloom, as well as redbud in the Athens, Georgia area.

April 24-26. Louisville, KY, Central APA and Harvard trip, Harvard Environmental Network. On panel with Father Thomas Berry.

May 14-17. Corvallis, Oregon trip. Spent Saturday in H. J. Andrews Experimental Forest, an experimental area within Willamette National Forest, operated by Oregon State University. Hosts: Fred Swanson, a geologist/forester who is a director of the forest; Peter List, philosopher, Oregon State University; David Wallin, graduate student there; Hermann Gucinski, who is coming there after assignments in the East. Graduate student who is studying the northern spotted owl, Keith Swindle.

Introductory remarks, walked down to river through old growth, walked up to a flume to test landslides, then to an area where they are watching logs rot for 200 years! This is also prime spotted owl habitat and there are seven pairs in here that are closely watched. But Keith Swindle was unable to locate any for us to see. Greyhound bus that another group was using got off the road. Jerry Franklin, well-known forester, had class in here.

Went up to Mack Creek area and hiked 2-3 hours in old-growth forest. Very nice experience. Douglas-fir, cedar, hemlock. Commonest wildflower under foot was Cornus canadensis, called Bunchberry there, excellent displays.

Nice bushes of Rhododendron macrophyllum, about like the Eastern version. Vanilla Leaf, Achlys triphylla, was common, new to me, distinctive leaf. Common shrub was Vaccinium parviflorum, Red Huckleberry. Dicentra formosa, Bleeding heart. Clintonia uniflora, Queen's Cup (lily). Oxalis oregana, Oxalis, is a principal ground cover. Anemone deltoidea, Windflower. Mitella pentandra, Mitrewort. Nurse logs often noted. The young hemlocks can get established here, though they cannot compete on the ground with Oxalis and other herbaceous plants there. As the log decays, they get roots down and into the soil. Varied thrush, seen nicely. Winter wren heard singing often.

Brazil and Central America trip, follows on new page.

Brazil and Central America. 1992

UNCED United Nations Conference on Environment and Development, in Rio

May 23, Saturday. Left Fort Collins, flew to Miami, joined J. Baird Callicott, University of Wisconsin, Stevens Point, flew Varig to Rio de Janeiro, overnight, arriving Sunday.

May 24, Sunday. Flew from Rio de Janeiro on to Porto Alegre, met by Fernando Jose da Rocha and wife, Maria Carolina, and taken to hotel.

May 24, Monday - Friday, May 29. Conference on Ethics, University, and Environment at the Federal University Rio Grande do Sul in Porto Alegre.

May 30, Saturday. Drive to mountains. Drove due North about 75 km., to vicinity of Petropolis. This area was settled by Germans and Swiss.

May 31, Sunday. Flight back to Rio.

Met by Daniel Crabb, Union Church of Rio de Janeiro, and took taxi to Hotel Gloria, downtown Rio, registered for Global Forum, then I went with Daniel Crabb on bus to his home in condominium at Barra de Tijuca. Daniel Crabb, Av. Alvorado, 270, Bloco 2, Apt. 1707, Edificio Alpha Sirius. (021) 385-6388.

Baird's roommate is Rick Wilke, dean of natural resources at the University of Wisconsin, Stevens Point.

June 1, Monday. At Global Forum
I rode the city bus across town both ways, something of an ordeal.

June 2, Tuesday. At Global Forum

June 3, Wednesday. At Riocentro at the United Nations Conference on Development and Environment. A hassle getting in and getting credentials.

June 4, Thursday. At Riocentro

June 5, Friday. At Riocentro
Heard Jacques Cousteau speak.

June 6, Saturday. Tour of Rio. In the morning I took bus tour and cable car up the Corcovado hill with statue of Christ on top. Left from Hotel Intercontinental. In the afternoon took bus tour and cable car up the Sugarloaf (Pao de Acucar). We came down about dark, so that the lights of

the city came on while we were up there.

Supper that evening with Brian and Tina Miller, Condominium Rio-Mar, Rua Ivaldo de Azambuja, 66, Barra de Tijuca CEP 22793. Seafood supper. Missionaries from Minneapolis, with Evangelical Free Church.

churrasco (shure hahss ko) - the barbeque where various meats are brought round on a skewer.

June 7, Sunday. Spoke at Union Church of Rio de Janeiro

June 8, Monday. Flew to Cuiaba.

Left Barra at 4.00 a.m. for early morning taxi ride to airport, left airport 6.00 a.m. Flew to Belo Horizonte and then over the state of Minas Gerais (meen nus shjuh rice, like an sh before the j in French jardin). Flew to Brazilia, then to Cuiaba. The airport is in a twin city, Varzea Grande. Varzea means floodplain, the Great Floodplain of the Cuiaba. Cuiaba is the name of the river. Jogged around the high school soccer track near the hotel. Hotel Eldorado, and best hotel on the whole trip.

June 9, Tuesday. Chapada dos Guimaraes trip. My guide is Sergio Alves. Address: R. Mal. Floriano Peixoto, 1584, CEP 78020 - Cuiaba, MT. The name of this state is Mato Grosso, mato = vegetation, mat, grosso = great. The abbreviation is MT because MG goes to Minas Gerais. Trip arranged by Expeditours. Crops in the lands I flew in over are soybeans, rice, maize. Chapada means tableland. Guimaraes (sh ge mah rain es, not all that easy to pronounce in English) is a family name, a family who lived in the region. The vegetation on the landscape today is called cerrado (seer hah do), a mixture of trees and brush.

Birds seen:

guira cuckoo. (gweer uh) One flew over the road; many seen later.

crested caracara. One eating carrion on the road; others later.

rhea (ree uh) - large, approaching the size of an ostrich.

seed eater. like a crested sparrow.

black vulture. same species as in U.S.

turkey vulture.

American kestrel.

red and green macaw. Two flying overhead, seen nicely, and, later, one coming into a nest in the cliff, perched on the rock edge.

smooth billed ani (ah knee)

shiny cowbird

curl crested jay

chalk browed thrush

cattle egret

13 species of birds.

cercropia (suh kro pe uh), tree with sizeable palmate leaf.

We passed by, in the distance, geological formations shaped like a wineglass.

From an overview, dumps of gold mines seen in the distance. Nelore (nuh lor e), cattle. The

white cows in the fields.

There was a large yellow and black snake, roadside, seen well, but the guide did not know what kind it was.

Rice, covered with beans, sprinkled with a mixture of manioc root and beef jerky ground together.

farinha (fuh reen yuh) (farinha means "meal, flour" - manioc flower sprinkled on the beans and rice.

Manioc. Genus Manihot sp. esculenta, outside Brazil is often called cassava. Spurge Family, Euphorbiaceae. Tapioca plant. The prussic acid has to be leached out before eating. Native to Brazil. Fleshy roots are ground and starch washed out and then heated until the starch grains explode. This mass is then made up into various forms for marketing. Tapioca is used for puddings. The natives grate the roots and make bread from it.

Manioc is sometimes grown from seed, but the more common practice is to plant pieces of the stem (as with sugar cane). In regions subject to frost the canes are buried until spring and then are cut into lengths of about five inches for planting. The roots do not keep well after being dug so they are allowed to remain in the ground until processing is ready.

Orange, Lemon, Lime are all genus Citron, thought to have originated in Southeast Asia, probably China or Malaysia, though Jews used anciently a wild form of the Citron, called Etrog in Passover ceremonies. Rue family, Rutaceae. The Grapefruit, also Citron, is thought to have originated from orange or lemon as a sport in the West Indies.

June 10, Wednesday. Pantanal trip, first day

The Pantanal is the world's largest wetland, unless the whole Amazon basin is itself called a wetland. Pantanal means "swamp." There are 650 bird species here, 230 species of fish. It does not drain into the Amazon basin, although the Amazon basin is not far to the north. It drains into the Paraguay River. Parts of it are in Bolivia and Paraguay, a little in Argentina. It is an immense alluvial plain of the Holocene epoch. Rainy season is October to March. Flood season is December to May. Dry season May to October.

At the first stop, roadside, with water on both sides:

savanna hawk - reddish

roadside hawk

rhea

rufous horonero (hor ro near o). Also called ovenbird. It builds a nest of mud like an oven. These were often seen later, sometimes built on telephone or power lines.

great kiskadee (kiss kuh dee) - a flycatcher, like a kingbird

green ibis

southern lapwing, like a plover

tropical kingbird

wattled jacana (juh kah nah)

guira cuckoo.

whistling heron - nice, flying over the road
small, unusual falcon, unidentified
rufescent tiger-heron
great egret - all white, larger
toucans - three flying across road

2 caimans here.
termite mounds

Many of the trees have large termite and ant houses in them, like big galls high up the tree.

Poconé (po ko na uh), the town enroute

purplish jay
second stop, roadside

wood stork
roseate spoonbill - lots of them
anhinga - lots of them here, also later
night heron
southern lapwing - lots of them
buff necked ibis
snowy egret
red and green kingfisher
barred antshrike
striated heron
bare faced ibis
ringed kingfisher
great black hawk - nice, soaring, white upper tail
jabiru stork
little blue heron - uncommon, from the U. S., a migrant

There was a large congregation in one area. In the group I photographed there were roseate spoonbills, great egrets, wood storks.

sayacca tanager (sye yacca)
caimans photographed
later, at bridge, many lying in the sun.
lizard crossing road, greenish, probably a small iguana lizard.

whistling duck - lots of them
green kingfisher
neotropic cormorants
white necked heron. Virtually a great blue heron, but white necked.
rufous tailed jacamar (jack uh mar) - colored like a hummingbird.
rufous cacholote (cash o lot)

Pousada Porto Cercado, the lodge where we stopped, spent two nights. Pousada means a lodge, simple hotel.

Checked in, lunch at lodge.

Red-capped cardinal. Like a red-headed woodpecker somewhat.
English sparrow.

Evening walk.

Vermillion flycatcher. Lovely view and lovely bird.

snail kite. with a hooked bill. You can pick this up in the distance.

tico-tico-rei. *Coryphospingus cucullatus*. A finch, English name unknown, a red bird
capped heron

whistling heron - with blue eye patch

green winged saltator

black capped mockingthrush

black collared hawk

chacho-chacha-laca. (chatch o chatch a lak uh) - three in tree, seen nicely

limpkin

yellow billed tern?

macaw - blue winged or golden collared, couldn't separate what species. Flew over.

turquoise fronted parrots. Flew over.

canary winged parakeet. At dusk, seen well. Yellow wing patch.

hummingbirds, unidentified

Southern screamer, heard, not seen. Seen next day.

pieb water tyrant (Family is Tyrannidae, tyrant flycatchers, Eastern Kingbird is in genus
Tyrannus)

Lightning bugs in the evening.

The power generator here produces 127 volt current.

June 11, Thursday, second day in Pantanal

night and early morning, howler monkeys heard. The roar can be heard 2-3 km.

thrush-like wren, about the lodge

We went out for the morning in a boat, first upstream.

black skimmer, lots of them

plumbeous ibis plumbeous means lead-colored, dull gray.

collared plover

undulated tinamou - ground bird in woods, like a big quail We went ashore and stalked it for a
while.

southern screamer. Seen well, like a turkey, on bushes, riverside.

white winged swallows - all the time over the water

yellow rumped cacique (cuh seek)

canary winged parakeet, seen again

black collared hawk - seen well, collar is really just a black patch.

The floating water hyacinth is Aguapé, Pontederia lanceolata.
iguana lizard. Two of them, photographed, on bush.

howler monkeys. Seen in the trees, one black male and brown females and juveniles. They can move rapidly through the trees and like to get away from you.

return for lunch. leafcutter ants carrying leaves across the patio walkway.
afternoon boatride.

Fisherman caught a piranha, shortly after I lost my hat when it blew off and sank rapidly. We tried going up a bay or tributary and the channel was too shallow and the water weeds too thick. Returned to do fishing ourselves. I caught a piranha; the group caught several plus some catfish. These were made into piranha soup for supper.

Evening boatride.

Numerous caimans, eyes a bright orange in the spotlight. jacaré in Portuguese
howler monkeys calling
capybara. Three of them on a sandbar, seen up quite close in the spotlight. World's largest rodent, size of a cocker spaniel.

There are four caiman species, two sizeable ones and two dwarf ones.

Black caiman (jacare-acu) (Melanosuchus niger). Can be huge, to 6 meters, but much overhunted.

Spectacled caiman. (Caiman crocodilus). Only to 2.5 meters, usually 1.5 to 2 meters. This seems to be mostly what I saw.

Dwarf caiman. Paleosuchus palpebrosus

Smooth-fronted caiman. P. trigonatus 1.5 meters.

June 12, Friday. Last day in the Pantanal.

yellow rumped cacique

giant antshrike (a wren), roadside, nice.

scarlet headed blackbird - English name? Ambyramphus holosericeus

Aeglaeius. No English name, like a female yellowish blackbird

limpkin

macaws

ruddy ground duck

grey necked wood rail, two of them in road

2 unidentified parrots

crested oropendola. yellow outer tail feathers

One opening in the road, a wet field with cattle in it, was especially full of birds.

maquari stork (muh kwa ree) a migrant from the Amazon, mixed in with

wood storks

buff necked ibis, lots in the field

plumbeous ibis

little blue heron

pied water tyrant. whitish bird

75 species in the Pantanal

13 species Chapada
88 species
end Pantanal trip

Carlos Ravazzani, Hilario Wiederkehr Filho, José Palo Fagnani, and Sílton da Costa, Pantanal: Brazilian Wildlife. Edibran ISBN 85-85348-02-X in English. Another edition is in Portuguese. Looks good, seen in bookstore in Cuiaba. Recent, about \$ 50 there.

llano (yah no), plural llanos, a Spanish word, not a Portuguese one, for open grasslands. Same root as "plane" p-lanos, with the p dropped. A flat, treeless land.

June 13, Saturday. Flew to Manaus.

David Leonard Everett, linguistics professor from Pittsburgh and his wife, a professor at Carnegie Mellon met in airport and on plane. Lots of the Amazon native languages are still unwritten. His book, A Lingua Piraha e a Theoria da Sintaxe (The Piraha Language and the Theory of Syntax): Descricao, perspectivas e teoria (Descriptions, perspectives, and theory) Campinas: Universidade Estadual de Campinas, 1991. ISBN 85-268-0082-5.

The Amazon

The Amazon basin covers half of Brazil. The basin is in nine South American countries and is half the South American continent. Manaus, the largest city on the river or in the basin, has only one paved road into it, from Porto Velho to the South and Cuiaba below that. That road crosses six tributaries of the Amazon by ferries, often broken down or backed up with truck traffic. A terrible paved road, frequently closed in the rainy seasons. The Transamazon highway is completely unpaved and there are no buses on it during the rainy season.

The Amazon is the second largest river after the Nile in length and by far the largest in volume. The volume is thirteen times that of the Mississippi, four times the volume of the Congo, its nearest rival, and is 20-25% of all the water runoff on Earth. The lower parts of the Amazon are 5 km. wide; the delta is 400 km wide. Ocean going vessels can go 3,000 km. upstream. And it all once flowed the other way! Then there were no Andes.

Since it has a zillion tributaries and since the name is not used throughout the length, many prefer to speak of the Rivers Amazon, rather than just the Amazon river.

Alex Shoumatoff, The Rivers Amazon (San Francisco: Sierra Club Books, 1978).

Harald Siolo, ed., The Amazon: Limnology and Landscape Ecology of a Mighty Tropical River and its Basin. Dordrecht/Boston: Dr. W. Junk Publishers, 1984. Some thirty articles by various authors, rather good. For example: "Ecology of the varzea, floodplain of Amazonian whitewater rivers," articles on aquatic mammals and reptiles, soils, fishes, indigeneous peoples, etc.

Anthony B. Anderson, ed., Alternatives to Deforestation: Steps Toward Sustainable Use of the Amazon Rain Forest. New York: Columbia University Press, 1990.

varzea - floodplain, seasonally flooded. Only about 2% of the whole basin, but prominent beside the rivers. This flooded area can be 200 km. wide.

igapo - permanently flooded areas

terra firma - upland rainforest

The Marañon is the tributary upstream with the larger flow and was long considered the source, but it was found with aerial photography that the Apurímac-Ucayali system is longer.

The name Amazon starts at Naura, shortly above Iquitos, though the name seems not to be all that much used here. Already it can be 4 km. wide. It is only 106 m. above sea level here, with 3,680 km. still to go to the sea. This is still in Peru.

It enters Brazil at Tabatinga and from here to Manaus it is called the Solimões. The name goes back to King Solomon. Early explorers thought that King Solomon's mines would be found here.

There are tidal effects to Obidos.

There is less delta than one might expect, due to strong northerly currents in the Atlantic, though the fresh water does go far out to sea.

There is an erratic tidal bore which forces shipping to go via the straits of Breves and thence to Belém. There is a sense in which this isn't the Amazon at all but the Para.

How long is the river? A matter of definition. If you include the longest route, also include the detour via the Para and Belém, it is longer than the Nile.

Flying into Manaus, there were long reaches of forest, seen from the air, flying up the Madeira River, with big curves and sweeps in the woods, which seemed to result from residual river bends, like gigantic oxbow lakes filled in.

The jet plane would fly twenty minutes without a sign of a human being, though, with the binoculars, I could see limbs in the trees. We were not flying that high.

David Everett delineated the boundary of the Pirahã Indian Reserve (see map) in 1980 and was surprised to see it shown on the map. He said he was glad the Brazilian government was taking it that seriously.

Seasonal rise and fall of the river at Manaus is 45 feet. Some families who can take boats to their porches in the wet season have to walk an hour to get there in the dry season.

High species diversity in the Amazon was once thought to be the result of a little-changing, wet environment. Few species were stressed out to extinction by severe climate changes, and new ones accumulated. But more recent work suggests that there has been more climatic change in the Amazon than thought; it was considerably cooler in glacial times. Also, there are sometimes big storms, and, in times of drought, considerable fires in some regions.

An oddity is that different sections of the Amazon have different faunas, though the habitat in between seems continuous enough to permit them to mix.

Checked into Monaco hotel. Joined Baird, already here.

June 14, Sunday.

Baird and I walked to the Opera House and to the market at the docks. We bought hats.

June 15, Monday.

Trip to Amazon Lodge.

Picked up at hotel, transferred to a boat down the Rio Negro and then out onto the Rio Solimoes. Crossed the Meeting of the Waters, the black water from the Negro, the brown water from the Amazon. This is indeed evident, out in the middle of the river.

Crossed to south side, took bus at town of Careiro. Bus ride down the road toward Porto Velho, terrible road and rough riding bus. Photographed the water lilies with the upturned edges. What are these. Non-native? Lotus?

Later: No, this is Victoria amazonica, Amazon water lily, a native to South America, family Nymphaeaceae. Another, somewhat smaller species is in the Pantanal, V. cruziana. Good illustration in Royal Horticultural Society, Encyclopedia of Garden Plants, on hand.

Transferred to three motor boats and rode upriver, up the Araca and Mamori Rivers, onto Lake Juma, a longer ride than I had anticipated and I got too much sun.

Arrived Amazon Lodge. A sizeable floating lodge. There is a group of about a dozen travel agents, trying out this tour. Guide for the day Elcio Winhote, also Max Maia.

Boat ride in the afternoon, almost immediately to the island across from the lodge, where they have some placed some spider monkeys, which they feed. The monkeys can swim, but don't like to, and if fed will stay on the island.

Continuing the boat ride, we saw one group of howler monkeys in the trees. These were all black. Lots of howling from the other side of the river.

Return for supper.

Evening boat ride. The guide caught by hand two of the smaller alligators. Which of the caimans are these?

Lots of howling from howler monkeys.

The candiru is a slender, three-inch catfish that normally attacks other fish, fastening to their gills by its spiny hooks, where it sucks blood. It is by instinct a crevice seeker. The young candiru, only one-sixteenth inch thick, can penetrate the human ear, nose, urethra, vagina, or anus. They then erect their spines and die of suffocation. The struggling fish causes intense pain, and must usually be removed surgically. But it really isn't a human parasite as it soon dies in humans and can't feed or reproduce.

June 16, Tuesday

In the morning, a walk in the forest in the rain, using machetes to cut paths as we went. Lots of

palm trees in here. A Brazil nut tree. The Brazil tree, distinguished from the Brazil nut tree, is almost extinct. A wild chocolate tree. We drank the water from a vine.

In the afternoon, Baird and I began the paddling trip. Outfitter is Nature Safaris.

Left about 2.30 p.m. Boat ride up Lake Juma.

Guide: Luiz Epifanio da Silva

Rua 13 de Maio, No. 257

Coroado II - Manaus, AM (Amazonas)

Brasil - CEP - 69000

Fone (092) 642-1030

The boatman is Claudecy Lima.

Night spent at a caboclos homestead, in hammocks on the porch. Howler monkeys calling. Some rain that night. Whip-poor-will like calls throughout the night. Caboclos (kuh bow klos, from an Indian word), a mix of Amerindian and Portuguese blood, but virtually anyone living in the hinterlands is considered a caboclo.

Manioc plants all around the house. Chickens.

June 17, Wednesday.

Took boat on up the river.

Found campsite and built the shelter house.

late snack lunch

boat ride, more monkeys seen. Another species?

nice macaws, red and green, overhead

nice yellow rumped caciques

lots of white winged swallows

supper in the dark, on the boat, by candlelight.

slept in the hammocks.

Baird's broke and had to be repaired in the middle of the night.

Monkeys howling in the night.

June 18, Thursday.

savannah hawk, screaming at breakfast

boatride upriver and trek in the woods.

lunch, nice toucan in the trees. Cuvier's toucan?

very long tailed lizard after lunch, near the shelter. 1 1/2 feet, with tail.

lots of howler monkeys heard in the night.

June 19, Friday

Baird and I went paddling. Luiz and Claudecy came with breakfast on the boat.

Packed up and return downriver to camp. Black caracaras, nice view of two on a branch near the river.

porpoises breaking water, seen better here than before.
stopped at a homesite where caboclos were cutting manioc, a big pile of roots.

stopped to give gasoline to a woman at a homesite
stopped at the house where we had spent the night. Left groceries there. Then met the man
and his family on a boat, gave them more groceries.

Stopped at a house where they were roasting manioc.

Return to lodge about 2.00 p.m. idle afternoon.
Alligator hunting that night, caught one. Piranhas had eaten its tail off some.

glorious stars at night. Southern Cross evidently visible. You can see the Big Dipper, but not the
north star, which is below the horizon. The glow from Manaus is visible in the distance. In the
tropics day and night are each 12 hours, hardly varies summer or winter, though it does vary
perhaps fifteen minutes if you are a few degrees north or south of equator. The moon rises
straight up and sets straight down.

Lots of noises in the night at the lodge. There are nightjars that catch bugs on the roof and
flutter around, making strange noises.

June 20, Saturday.

Up at 5.30 a.m. to go out with Luiz and look for birds. Monkeys howling very vigorously in early
morning. Saw a few birds and mostly couldn't identify them in the bush. Nice dolphin breaking
the water, 4 feet long.

There is a bird that makes a startling call. Maybe a screaming piha. Pee pee yo, an explosive
call. Almost constantly heard around the lodge and on these boat trips.

The group there went on a trek and got lost. The guide got lost in the jungle, and so we were not
able to leave the lodge until about 4.00 p.m., three hours later than intended.

Arrive at the transfer bus about 6.00 p.m. Ferry across the Amazon in the dark. Night at
Monaco Hotel.

June 21, Sunday.

Flew to Miami, night in Miami. Nice flight north over the Amazon and could see lots of country,
including, later, Venezuela. There are some cliffs and canyons in here with surprisingly steep
walls. Saw the Orinoco River from the air. Lots of very remote country in here, though the
upper half of Venezuela is well populated.

Met on the plane Marco Vincio Cerezo Blandon, who directs a nature foundation in Guatemala.
He is the son of the President of Guatemala, studied with George Wallace, who says he will
probably soon be minister of environment in Guatemala.

June 22, Monday.

In Miami. Did laundry in the morning.

Flew to Tegucigalpa in the afternoon for IDEA conference. International Development Ethics Association. No luggage for several days.

June 23, Tuesday.

Baird and I were on panel on wilderness in Third World. I moderated a panel in the afternoon.

June 24, Wednesday.

Field trip to shrimp producing area. Controversy between the big shrimp operators and the locals. Locals are organizing against the shrimp industry.

Very overused countryside.

The bus ran over and killed two small pigs enroute.

birds on the field trip:

mot-mot, with a racquet tail

wood storks

wattled jacana

great egret

redwing blackbird

anis, curved upper bill

Prominent in the ponds where the shrimp are were four-eyed fish, Anableps. They have two eyes for above water and two eyes below water. Really one eye, divided into upper and lower lobes so that the two eyes actually function as four eyes. They skim along the surface when alarmed, seeming almost to walk on water.

Hot day, long trip. Supper at a restaurant overlooking the water. Two brown pelicans fishing.

June 25, Thursday

Moderated panel on Earth Summit at Rio.

Finally got luggage, in early morning.

supper with Kate Rawles

native dancers in the evening

June 26, Friday

on panel with Baird on intrinsic value in nature, midday.

Flight to San Jose via San Pedro Sula and Managua, Nicaragua. Rode on this flight with Luis Camadro, philosophy, at the University of Costa Rica, who was at the IDEA conference. He doesn't know what Sula means in the name.

Flew over the Ulva River. The airport at San Pedro Sula is surrounded by big banana plantations. Very rough flight after takeoff from San Pedro Sula in stormy clouds. We were bounced around more than I have ever been in a jet. Rather scary.

toquiro, the Spanish equivalent for favela.

June 27, Saturday

Whitewater rafting trip on Rio Reventazon. There were about forty people, with 6 in a boat, with guide.

Nice day, drove to river through coffee and banana plantations
oropendola colony, of many nests in an overhanging tree over the river. They nest near wasps, which sting monkeys that come to try to get the oropendola eggs.

Weather is cooler than you might think for the tropics, though the water temperature is not cold.

Lots of the fence posts are "living fence posts," growing at the top. There is frequent use of some sort of small tree, rather like a palm tree, also several other kinds.

In Guatemala alone there are more varieties of plants, birds, and other animals than in the entire United States, an example of biological diversity caused by geographical diversity. Many different topographies. Fodor Guide, p. 65.

June 28, Sunday. Barva Volcano.

Picked up at hotel and then drove through Heredia, visited old church there, with strangler figs in the yard. They are pollinated by a wasp. The palms here are royal palms, Roystonea regia, introduced from Cuba.

My guide for the day: Werner Rodriguez, Cudigo Postal 2300, Apartado 499, San Jose, Costa Rica. Tel. 722910. Also along in the 4WD ride, Carlos Coles who runs Jungle Trails. He studied under George Wallace. He is now on crutches, had a leg operation recently.

Coffee is introduced from Ethiopia, bananas from India. One of the scientific names for one of the bananas has the root to be wise, Musa paradisiaca var. sapientum. Banana family, Musaceae. It was thought that eating bananas makes you wise.

Coffee is Coffea arabica. Madder family, Rubiaceae

Eucalyptus trees are much planted here.

Hike was in lush, epiphyte-burdened forest all day. Barva Volcano is 2900 meters = 9500 ft, and this above sea level in the distance, so there is dramatic change of elevation. The dominant trees are oaks, to 125 ft. high. Frequent understory of Chusquea bamboo. Many bromeliads, often with red pigmented leaves if in the sun. Lots of moss festoons. Some nice tree ferns in here. Many lianas (lee ah nuhs), liana is a climbing plant with roots that drop to the ground, root from lig, bind, line.

birds seen:

piratic flycatcher, eating white seed-fruits on a fence.

rufous-collared sparrow

mountain elaenia (ee lane ee uh)

fiery throated hummingbird

mountain robin

collared redstart

purple throated mountain gem (a hummingbird)

ruddy-capped nightingale thrush

black billed nightingale thrush

black and yellow silky flycatcher
slaty flower piercer
blue crowned mot-mot - nice on the phone line on the way back home
blue gray tanager

We heard, but I did not see the resplendent quetzal. Loud call. Werner tried to flush this one out, without success. A pair had been nesting earlier where we lunched, but the fledglings were gone and the parents gone.

14 species of birds

Aroids, with the big leaves.
Xanthosoma, Phyllodendron
Poor man's umbrella. Gunnera.
Selaginella
Melostoma, sp. The purple-lavender flower bush all the way up the trail.

The Costa Rican National Park System has 28 units, and encompasses over 10% of the country's land area, a higher percentage than any other country in the Western hemisphere.

June 29, Monday. Rincon de la Vieja Volcano Park

Bus ride from San Jose to Liberia, 9.00 - 1.30, rather crowded, sometimes hot. Flatter and more cow country up north.

Met by Elias Baldiaceda, in old Toyota 4WD. (= biblical prophet's name, Elijah). Liberia takes its name from the former town of Guanacaste (also the name of a tree and the name of the region), of which a large specimen stood in the central crossroads. The town once got "liberated" from the Nicaraguans.

rain on the way up.
mot-mot on the way in
lunch at the Alberque Lodge.

Hard rain in afternoon. The lodge has its own hydroelectric power. A big new lodge is being built near here, and the road in is to be paved. The owner here is Alvaro Wiessel Baldiaceda, much interested in environmental conservation and ecotourism.

I tried to walk to the mudpots about 4.00 and took a wrong road. Returned and found the right one. Walked to park edge, but it was getting dark. Lots of parrots and parakeets, but I couldn't tell them at a distance and in the twilight. Lots of leaf cutter ants.

white-throated magpie jay. Several seen well.
lots of howler monkeys heard
several quails along the road
frogs loud in the distance that night

June 30, Tuesday.

Horseback ride to volcano. Rode through good dense forest. Includes some tree ferns, Cyathea sp.



**June 30, 1992. Costa Rica
Ride to Rincon de la Vieja**



**Mantled howler monkey
Costa Rica, June 30, 1992**

Three groups of monkeys passed on the ride up. One group threw sticks and fruits at us. The monkeys are:

white faced capuchin (Cebus capucinus), in Spanish: mono cara blanca, black with a white face and frontal area. This was the first group.

black handed spider monkey (Saimiri oerstedii), mono arana (= spider in Spanish). Though another book gives Ateles geoffrey, the taxonomic names do not seem to be too stable. The second and third groups.

Mantled howler monkey. Alouatta palliata, mono congo in Spanish. Big and dark; they can be either black or dark brown. (photo of this one)

The horse riding was hard on my knees. Reached the top, left horses, and hiked upward, later with only myself and the guide. Got cloudy, clouds drifting in over the summits, and we turned back after walking past the highest divide some distance. The guide spoke only Spanish and we had a hard time communicating.

Rincon de la Vieja is 1,916 m. (6300 ft) with two craters. One contains a hot lake. The other is vegetated with a cold lake. There were violent eruptions in 1966-1970, with lesser eruptions in 1983-84. Mario A. Boza, Costa Rica: National Parks/Parques Nacionales. San Jose: Editorial Heliconia/Fundacion Neotropica, 1988. Nice picture book.

Tracks of deer up here, the white-tailed deer? The white tailed deer here is the same species as in the U.S., but it is smaller in size. Another deer is the red brochet.

Many rather leathery leaved plants at the timberline, or edge of the vegetation - volcanic area. One is cupey (English) or cope (Spanish), Clusia sp.

Tapirs are said to be reasonably common in the upper parts here, they often come to the lakes for water and their tracks can be seen there.

On the return horseback ride, saw a coati. (mammal in the racoon family)

coati-mundi. The term refers to a solitary male, over two years old.

I did better riding the horse out than I thought I might.

Walked around the mudpots on the return. Las Pailas, the Cauldrons.

July 1, Wednesday.

Birding before breakfast.
stripe-headed sparrow. Rather like a white crowned
red-billed pigeon
white-winged dove
inca dove
great-tailed grackle

keel-billed toucan. Splendid view in the lodge yard, up in a tree, just before breakfast. A marvelous bird.

After breakfast, walked to Azufrales, thermal springs, but didn't really have time to see them, though I got to the area.

Various parrots flying overhead.
lineated woodpecker

Lunched about 11.00 and drove out in Toyota to catch the bus in Liberia. Bus ride back to San Jose. Night at Grand Hotel Costa Rica.

July 2, Thursday.

Up at 3.20 a.m., left San Jose 6.00 a.m., flew to Tegucigalpa, with stop at Managua, carrying my luggage, unwilling to trust it to Sahsa Airlines. Often clear flight with broken clouds. Sandinista helicopters in the airport at Managua. Changed planes in Tegucigalpa. Landed in Belize, then to Miami, and switched to United to fly to Dulles and then to Denver. Home about 10.00 p.m.

end of Brazil and Central America trip

August 8-9, 1992 Woodland Lake, alone. Frustrated because I tried to get Giles to go.

Left 7.00 a.m., drove to Hessie in Jeep, on trail about 9.30. Uneventful hike up. Some group had a 4WD with enormous tires in the wilderness, saw them first below and later at the Woodland Lake Trail/Jasper Lake Divide, pulling a tree out of the road. Steady climb on up, lunched halfway up this part of the trail. Pitched camp and took a nap in light rain. Cleared for supper.

Sunday, hiked up into Skyscraper Reservoir, fresh sheep sign in here, but I didn't see any. Returned, packed up and walked out.

Met Bruce Mednick, student I taught in 1974 on way out, now with wife and two girls. Hiked back out on the south side, the old road. This is an easy walk. King Lake Trail is well marked, try it sometime. Relocated the Cornus canadensis, Bunchberry on the way out. It is not far below the Lost Lake Trail turnoff; find a section of the main trail that is corduroy and a side trail that veers off into the woods some south of it. It is in there.

Lots of Boulder and Denver Metro people in here; avoid it in crowds, parking could be a problem, but it wasn't early Saturday morning.

August 21, Friday. Cabwaylingo State Forest, south of Huntington, WV, with Mary Jack. Hiked up the Sleep Hollow Trail in the morning (no. 3 on their map), nice trail, goes up mostly a grown over road grade. Goes by some cliff overhangs and tops out at a natural gas well. Then the roads get confused, though this somehow connects with the Martin Ridge Trail (no. 4 and goes back down the other side. Returned.

Lunched in a picnic area, and, after lunch, tried the Copley Trail, but it proved a scramble too steep up. Returned to find the Indian Trail (no. 1), which is a pleasant climb to a ridge, then about ½ mile atop the ridge into a campground area, also with Tick Ridge Firetower, but we did not go far enough to see the tower.

Typical vegetation of the Southern Appalachians in August, some things I hadn't seen, or hadn't seen in bloom for a while. Indian pipe. Silene rotundifolia is a rare plant in here, collected only once and that in Cabwaylingo State Forest. The name of the forest is from four counties: Cabell, Wayne, Lincoln, and Mingo.

August 24, Monday. At Woods Hole, MA, chartered boat to Martha's Vineyard and lobster supper at a club there. Nice cruise over the water, lovely day. Gulls, cormorants, osprey nest in distance.

Sept 10, Thursday, flew to Missoula.

Sept. 11, Friday. Keynote speaker on aesthetic appreciation of wildlife at National Watchable Wildlife Conference.

Sept. 12, Saturday. Hiked with Tom Birch. First to his cabin, then to Mission Mountains. Drove

around through Milltown/Bonner, then up into Swan Valley (Seeley Lake), past Holland Lake turnoff, then left on good dirt road to trailhead for Glacier Lake. This is the Mission Mountains Wilderness on the Flathead National Forest, though the Lolo National Forest is not far away and we drove through it on the way in. The western side of this range is the Flathead Indian Reservation, the Mission Mountains portion designated both wilderness and a sacred area.

We had planned to backpack, but Tom thought the weather too foreboding, as where we were headed was above predicted snow level. The two previous days had been glorious, but a front was moving in.

Parked and had hardly walked two hundred yards up the trail when we spooked a cub bear, got a pretty good look at it. Later, talking to others, several had seen it, but no sign of the mother. Rather gray, grizzled color, but nobody thought it was a grizzly cub.

Hiked in and out of rain, with glimpses of the higher peaks. Rather nice in the semi-stormy weather. Lunched at Glacier Lake and then went on up to Crescent Lake. Several grouse flushed, presumably blue grouse, though they do have a Franklin's grouse here. Couple of rabbits.

Returned about 5.30. Perhaps three dozen deer, mostly in twos and threes, on the drive out, all whitetails. This would have seemed to me to be mule deer habitat. Several more grouse roadside.

Sunday, Sept. 13. Slow morning as Tom was catching a sore throat. Walked up the Grant Creek drainage, above his cabin, in the afternoon. He turned back but I continued on, with a local dog who was very enthusiastic. Three stream crossings in here; I chose to walk rather than the sometimes marginal log crossings. Turned round at a waterfall. This is in the Rattlesnake Wilderness.

Monday, Sept. 14. Worked in Tom's "Library" cabin.

Tuesday, Sept. 15. Flew home.

Aldo Leopold's granddaughter, daughter of Nina Leopold Bradley, is in a race for governor of Montana.

Rick Graetz, Montana's Bob Marshall Country, said to be the best introduction of the Bob Marshall Wilderness. Published by Montana Magazine, Helena, 1985.

Smoke Elser, 3600 Rattlesnake Dr., Missoula, MT 59802, well-known local outfitter. I talked to a person in the airport that had just been in for a tour of Bob Marshalls. He does not advertise, doesn't need to. He is the author himself of a book, Packing In, on how to pack in, about ten years ago. Cheap car rental: RentAWreck, \$ 17 per day, 2401 W. Broadway. 721-3838.

Continental Divide Trail Society, P. O. Box 3002, Bethesda, MD 20824. They publish a series of guides on the CDT, including one for northern Montana.

Oct. 3, in the Minnesota River Valley, en route to Gustavus Adolphus College and the Nobel Conference. Saw a bald eagle perched over the river. Lovely, full adult, and fall leaf colors all around. With Jane and our college hosts.

Rocky Mountain Park reports that the Long's Peak Trail was really only open two weeks this summer, the shortest hiking season in memory. There was late snowmelt and early snowfall resulting in trail closure. The normal season is a period of about five weeks.

Nov. 17. Ran ten miles to celebrate my 60th birthday (Nov. 19). Shonny spotted me and took a few movies. She had a conflict on the 19th. Did very well so far as lungs are concerned, but my joints were somewhat sore afterward.

end 1992

1993

Jan 3, 1993. Snowshoed alone to Nymph Lake from Bear Lake. Giles said he would go but didn't show up. Left about 8.10. Group of a dozen bighorns in Big Thompson Canyon, rather closely hanging together; some females some young males. A little later, three nice rams, all 3/4 curl, right at roadside. Some snow, some sun. Left Bear Lake about 10.00 a.m. Moderately cold. Snowshoeing o.k., but shoes tend to slip somewhat on steep hillsides, and, coming back once, I fell down a ways. Made Nymph, but was too wintry to eat there, and ate coming back. Out about 1.00 p.m. Saw more snowshoes than skis on the trail today. Took a nap in Moraine Park and then watched elk there. About fifty. Drove over to Horseshoe Park, but found none in the park, though about 15 lower down in the cabin area.

January 9. Savannah Wildlife Refuge, across the river from Savannah, GA in South Carolina. Took a tour with a woman there, Jane was along. Flat, grassy waterfowl areas, with some woods. Numerous great blue herons, great egrets. Bufflehead. Saw some ducks at too great a distance to tell them much. Very nice morning, after considerable rain, though I didn't have good binoculars and often couldn't make out what I was seeing. Saw some deer running through the water at a distance. I was speaking to the Society for Christian Ethics in Savannah.

January 29-February 1. Bozeman, MT at Montana State University Cinnabar Foundation Symposium, and Yellowstone Park. Flew up Thursday a.m., over mostly snow-covered country. Stayed at Torch and Toes bed and breakfast, with John Mumma, regional forester, who was fired for refusing the demanded timber cut. Symposium Friday and Saturday. Saturday evening with Boo Hurley on the Yellowstone River, right out in the back yard. T. H. (Tom) Watkins, editor of Wilderness was there.

Sunday a.m. 3 adult bald eagles flying up the river, while we were eating breakfast. Drove down into the Park with Corky Brittan, then up the Lamar Valley Road to Cooke City, lunched there, and return. In groups: 12 bison, 85 bison, 36 bison, 52 bison, 19 bison, 8 bison, plus perhaps a dozen singles here and there. I think the group of 85 is probably the most I have seen at once in Yellowstone. Various group of a dozen or so elk, totaling perhaps a hundred. Then we came on one immense group of about 400 out in the valley.

Three nice bighorn rams, one a clear full curl, the other two nearly so, on a hillside in full sun and not far from the car. Three coyotes, the first right at the side of the road. The second was in among the herd of 400 elk, and once was chased away a bit by one of the elk. The third was at roadside, and then in the road, the backed away. It was lame at the front left foot. It was also wearing some kind of collar.

Perhaps 300 mule deer in the fields on the way home, outside the park. They also have a lot of white tails. Recently five mountain lions were shot (by legal license) in the area behind their house. Marvelous day.

Stayed that night with Corky Brittan. They have a cabin further up in the mountains with apple trees and bear regularly come in to eat the apples in the fall.

February 7, 93. Sunday. Eagles trip to plains. Left about 6.30 a.m. Various unidentified raptors on the way out. About 100 antelope. Nice redtail. Several kestrels. Lots of nice strings of geese in the air.

One adult bald eagle perched in a tree out in open field, between the river and the reservoir at Riverside. Nice in scope. Riverside (and all the others, except Prewitt) frozen solid and the country mostly covered with snow. One adult bald seen from the rim at Riverside.

A whitetail deer was fording the Platte on the return, then a buck in the fields. Tail is broad and grey/brown but edged with white even when down. Mule deer is more narrow, more rope like, white but black at tip. Does the muley raise its tail when running? Whitetails have a main beam to the antlers; muleys branch without a main beam. Nice pair of pheasants. Kingfishers. Great blue heron. No eagles at Empire.

Drove to Jackson, but did not go in; it was so frozen up. No eagles there. Lunched in park at Ft. Morgan. Various redtails. Kestrels. One nice rough leg; the tail is a give away.

Drove to Prewitt. This is now a pay area, \$ 3.00. Walked in since road was slushy with snow. Two adult bald eagles here. The first was first flying and seemed to provoke a big take off of geese who were out on the ice; later the eagle landed on the ice. The second was perched across the lake, also adult.

Stopped off at Fossil Creek Reservoir on the way back; there was one immature bald eagle there (I think). Total five eagles.

March 14, 93. Lake Forest, Ontario. Skied around Tom Settle's farm in very cold weather. Was giving lecture at University of Guelph.

March 20, 93. Sold Scout to Mike Hammon, Flag Drive, Laporte, who already had one exactly like it, even the same color. Was going to use mine and save his other one for parts.

March 28. Wellington Ponds. Lots of redheads. About 20 great blue herons in the rookery. The day before I think I saw a good flight of white pelicans way in the air over town, but did not have binoculars. A flock of large white birds.

April 3, Saturday. Short hike on Indiana Dunes, spin off from Ron Engel's International Union of Conservation Naturalists (IUCN) group, led by the superintendent of the park. Rather cold. The park is a patchwork. Friday night was at Frankfort, Kentucky, Kentucky State University.

April 4, Sunday. Dinner in restaurant, with four large racoons feeding right outside the window.

April 11, Sunday. Duck pond and Fossil Creek area for ducks. About the usual.

April 18. Sunday. Hike (3.00-6.00) to Horsetooth Falls in Horsetooth Mountain Park. Squall hit as I was going over the ridge and beginning to drop down, but after that it cleared and was rather nice. Lots of pasqueflower. Spring beauty. Yellow violets. Blue Mustard, Chorispora. Mahonia. Ten deer as I was climbing up the ridge coming back out.

April 30. Friday. En route to Denver to Steve Bissell's (Colorado Division of Wildlife) Ph.D. thesis defense. About two dozen pelicans at Fossil Creek Reservoir.

May 8. Saturday. Crow Valley alone. Windy. Lots of yellow rumped warblers, some orange-crowned warblers. No thrushes, people said it was too early. Western kingbirds. Two mockingbirds. Blue jays. One brown thrasher (presumably). Flicker. One barn swallow. A few doves. Lots of horned larks on grasslands, lark buntings. Meadowlarks.

Drove up past the Work Station. There was a great horned owl with two large owlets in a nest (looked like an old magpie's nest), in the first drainage north. Watched them at some length through scope, nice view. The three of them were almost too much for the nest.

Drove on north and took the dirt road west (No. 96), and then drive up on the rough dirt road to (allegedly) Murphy Reservoir, but what I got too was all dried up (with a 3a sign indicating this was probably the place). Lunched there, and returned. Mockingbirds singing quite noisily on return.

Probably two subadult golden eagles, one on drive out, and one near Work Station. Large birds, lots of white on the underside. A couple harriers.

Take the Jeep to do the marked 36-mile bird tour.

Friday, May 14, 1993. Okefenokee Swamp. Left Valdosta State University about 1.30 after lecturing there in the morning and evening before. With Jim Hill, philosophy professor. Freakish storm hit the town the afternoon before, after I arrived, and twisted out several dozens of trees here and there throughout town, though there was no storm at all in the part of town I was in, and slept through it. Some said it was a tornado?

Drove to Fargo and thence to Stephen C. Foster State Park, contained within the Okefenokee National Wildlife Refuge. This is principally a campground and boat renting and launching area. Nice campground. Walked around the nature trail, lots of Sphagnum moss. Also with us was Ari (Aristotle) Santas, born in Greece though raised in the U.S., another philosopher at VSU. He was joined after supper by his wife, Pat, and two young children.

Pileated woodpecker, nice views. They are common here. Armadillo about dark, but still nicely visible, and rather tame. I watched him at length on edge of road and crossing road. They first appeared here in the 1960's. Much evidence of their digging along the roadsides.

Barred owls calling in the night, first the typical calls before we went to bed, and, in the middle of the night, a terrible skwacking and fussing, said to be a territorial fuss. Also chuck will's widow (presumably, from range maps, not a whip-poor-will).

Saturday, May 15, 1993. Left about 8.00 to canoe for the day. Five canoes, including Brad Bergstrom, Dept. of Biology, VSU, Valdosta, GA 31698, recently tenured here. He studied at CSU, but was dissatisfied with his committee on small mammals. David Armstrong was on his committee. Also Jimmy ?? a biology student, though older and knowledgeable. Betty Derrick, chemistry, VSU, Mary Braswell, Hannah ? from Germany.

Canoeed to landing at Billy's Island, and got out and walked around. Billy Bowlegs was an Indian who lived here. Indians persisted in the swamps and raided the settlers some. There was in early 1900's here a Cypress Timber Company town. There were cypress in the swamp said to be 2,000

year old, often many hundred of years old, and all these were cut out. The typical tree we saw was cypress but only about a hundred years old. We saw a few that were three or four hundred years old. This is Pond cypress, Taxodium distichum nutans. Another one is bald cypress.

Pines on the island were loblolly and slash. Loblolly characteristically has persistent twin cones. The needles have a more bottlebrush effect. Slash has needles about the same but gathered more at the tip to produce a circular effect. Bergstrom think the original pine here may in fact have been longleaf, now gone due to fire suppression.

Alligators. One seen night before in the boating area. About twelve seen during the day, always at the edge of the waterway, with eyes and upper head and often upper part of the back out of the water. Passed quite near to some and they did not spook, though others did. Some seemed large, six feet or more. The saying is that snout to eyes in inches is the same as head to tail in feet. The "bullfrog" here is the pig frog, Rana grylio, often heard during the day, very deep voice.

Prothonotary warblers much in evidence, with notable call. Saw many dozens of them, often up close. Another warbler here is the yellow throated warbler, heard not seen. Eastern kingbird. Great crested flycatcher, several seen. Red-headed woodpecker. Red shouldered hawk, heard not seen. Red eyed vireo in Billy's Island area.

Lining the waterway is Spatterdock, a floating yellow "lily", Nuphar advena, with broad leaves emergent from water. Mixed with this but less frequent is White waterlily, Fragrant white waterlily, Nymphaea odorata, with more oval floating leaves that do not emerge from water. The common fern is chain fern, Woodwardia virginica.

Also seen: Wax myrtle, Nyrica cerifera, common shrub, with bay odor to leaves. Red bay, Persea borbonia. Loblolly bay, Gordonia lasianthus. Titi, Cyrilla racemiflora, with a raceme, green, not yet in full flower. Swamp fetterbush, Leucothoe racemosa.

Of some interest is the climbing heath, which is a vine that runs under the bark on cypress and then emerges, to form a bush.

Palmetto. There is a saw palmetto, the common one, and a bluestem palmetto. Easiest way to tell them apart is by a square (in saw) or a triangular effect (bluestem) where the stem joins the leaf. Also cabbage palm, introduced here, and when they are small they can look like palmetto, but the stem runs way up into the leaf in a long triangular narrow wedge.

Tupelo. Nyssa ogeche. Ogeche lime. (make a fruit that suggests a lime in color and shape).

Red maple. Acer rubrum. Several Smilax, greenbriar.

On the drier areas, Live oak, Quercus virginiana.

Returned about 4.00.

On the way back to Valdosta, stopped roadside outside of Fargo. Pitcher plants, Sarracenia minor. There is another larger one, gets two feet high, Sarracenia flava. Also here sundew, Drosera intermedia. Also several unknown plants. A nice large pink orchid, leafy stemmed.

May 16, 93. Sunday, after arrival from Georgia. Hike at Plotterkill reserve with Paul Genest

(pronounced shjuh nay), philosophy department Union College. "Kill" through Dutch country here means "creek." Catskills means "cat creek," the reference being to pumas. The rock here is graywacke interspersed with shale. Graywacke really refers to a small, sand sized gravel included in the rock; if they were larger it would be a conglomerate. It is usually gray, and wacke means stone in German. But graywacke is also of interest because it forms in undersea sediment slides, where the continental shelf steeply descends to the ocean floor. There are sometimes rapid slides here and it is believed that these deposits are shifted from elsewhere in a few hours or even minutes. They were discovered when they cut undersea telephone cables, and because they cut several cables at differential times, they have been clocked to move 60 miles an hour or so.

The New York Mountains are the ABC's, Adirondack's, Berkshires, and Catskills. The Adirondack Park is quite an area, two and a half times the size of Yellowstone, contains state-designated wilderness, and ninety percent of the wilderness in the Northeast.

Plotterkill was nice for the Polygala paucifolia, Bird on the Wing. Trillium erectum. Maianthemum canadense. Thalictrum. Asarum canadense, Wild ginger. Jack in the Pulpit.

May 16. Wolf Hollow with Carl George, Union College. We first went out to his home, a geodesic dome on the top of a hill/mountain. Redstart seen in trees there. Bobolinks during the walk at the top of the climb up the hollow, in a field. One dogwood in good flower on the road up, but this is really too far north for much of this species. Lots of coltsfoot, Tussilago farfara roadside.

May 22, 93. Canoeing with Carl George, Union College, on Canada Lake in Adirondacks. He has taught biology here 25 years, undergraduate at Michigan, Ph.D. from Harvard. Also Dan Miksky, philosophy honors student from Cape Cod, and Angela Carni, philosophy major, who had canoed in some summer camps. Drove n.w. up the Mohawk River, which is a canal with locks here. Through Amsterdam, thence to Johnstown (not to be confused with Johnstown, Pennsylvania), and then to Caroga Lake and to Canada Lake (shown on Exxon map). Put canoes in here and canoed across the lake and down what was once Sprite Creek (shown on Exxon map), now a flooded arm of the lake, about 4-5 miles, 10 miles roundtrip.

Lunched at Stewart's dam on Sprite Creek. Headwinds somewhat going down, and rain coming back for a while, then calm. Then a wind came up just as we tried to cross the open water of the lake. There were whitecaps on the lake and we had to head the canoe into the waves and paddle rather strongly to get across, also avoiding getting the canoe parallel to the waves, lest it get water in it, which could add up to being swamped. Afterward it became quite calm, and on the whole, a nice day throughout. Stayed cool.

Adirondacks means "land of the bark eaters." Mohawk means "man eaters," since they were cannibals; there are (says Carl George) lots of references to Mohawks eating people, and not apparently for ceremonial reasons.

Cornus stolonifera, Red osier dogwood. Populus tremuloides, Quaking aspen. Potamogeton crispus, Pondweed, an aggressive introduced one, that Carl George had to organize parties each year to get it out of the pond he studied for 20 years. Pinus resinosa, Red pine (Norway pine), but a native, and a good pine here. (Norway maple, common here in street plantings, is not native, came from Europe. Brassica, yellow mustard common in the fields. Populus deltoides, Cottonwood, with a deltoid leaf.

Drove through a shrine to a Jesuit missionary who has been canonized, Isaac Jogues. This is the

Auriesville shrine.

Red fox ran across road and got a brief, though good look at him. Nice bush tail, and rather small, shouldn't be confused with a grown coyote half again this size. Woodchuck. Beaver swimming in water in lake. The beaver leave no tail ripple, a muskrat will. Saw a couple of the spawning grounds, or nests, of the fellfish, Semotilus corporalis, on the way back. These are remarkable underwater piles of gravel carried there in the mouth of the fish to form lodging places for the eggs and young when they spawn.

Virbunum alnifolium, Witch-hobble, a nice shrub seen all day. Leaves are big and evidently opposite, white marginal flowers are showy. Bluets, Houstonia caerulea, spectacular in the lawns of the summer homes along the lake from the canoe. Sorbus, Mountain-ash. Waldsteinia fragarioides, Barren Strawberry, this is a common groundcover. like Fragaria, strawberry. Trillium undulatum, Painted Trillium; these have a red flash at the base of the white petal. Tillium erectum, Red Trillium (=Stinking Dog Lily). Panax trifolius, Dwarf ginseng, which Carl George had not seen before and the best plant of the day. Mitchella repens, Partridge-berry. Lycopodium lucidulum, Beargrass, lots of it. Populus grandidentata, Big-toothed aspen. Sasparilla, Aralia nudicaulis. Clintonia borealis, Clinton's lilly, small, greenish flower, with 3 long, 3 short stamens. Larix laricina, Tamarack, of interest as a deciduous conifer. Myrica Gale, Sweet gale, fern-like leaf. Nemopanthus mucronata, Mountain-Holly, very common along the edge of the water while canoeing.

Uvularia, bellwort. Dryopteris spinulosa, Spinulose wood-fern, the big, nearly evergreen one, lying flat on the ground now, often after the snow. Viola spp., purple violets. Medeola virginiana, Indian cucumber root. Tiarella, foamflower. Lonicera, a shrubby one that is aggressive here. Prunus cartina ??, with fuzz on the midrib underside. Podophyllum, May-apple. Maianthemum canadense, Canada Mayflower. Actaea pachypoda, White Baneberry. Oxalis, though not in bloom. Arisaema atrorubens, Jack in the pulpit.

Canada geese, 3 pairs, with 19 goslings. Flock of about 8 least sandpipers. Great blue heron. Ring-necked pheasant. Indigo bunting, nicely seen in tree, good color. Note the paired notes, a giveaway on the call. House finch, they are rather new here. Ovenbird heard. Kingfisher. Solitary vireo, has a call like a red-eyed vireo, but more slow and anaemic, definitely so. Hairy woodpecker. Redwing blackbirds. American goldfinches. Morning doves. Lots of bobolinks in a big open field of alfalfa. Savannah sparrow, with stickpin. Barn swallow. Red-tailed hawk nesting in power line pylon. Chipping sparrow. Junco. Pair of Common Mergansers on the lake. Mallards.

Stopped on the way back at bookstore in the home of K. R. Dorn Book Service, 8 Walnut Avenue, Johnstown, NY 12095. He specializes in natural history, and has his own collection of bird books. Interesting place, modest house on an obscure street, loaded with natural history books. He buys estates and sells a lot to dealers.

Sunday, May 23. Train ride down the Hudson to New York City and thence to Princeton. Lots of mute swans seen in the river and adjacent backwaters. This species has escaped and is established as feral in these waters.

Saturday, May 29, Mohunk Preserve, with Carl George and Paul Genest. Also Carl's wife, Gayle, Paul's wife, Barbara, Canadian as is he. Met there by two biologists, Rob Ohlberg, who teaches at Union, and his wife Andrea, who teaches biology at Siena College, a nearby Roman Catholic college. Also three students. The Ohlbergs do research on neurons in dragon flies, which are large neurons. Insects, though small, can have large neurons; mammal neurons can be smaller because

they have myacin ??

Drove south in van to the Preserve, about 70 miles. The nearby town is New Paltz. These are the Shawangunk Mountains, seems to be pronounced more simply, "Shawn-guns." The Catskills are nearby. There is an enormous Mohunk Mountain House, a grand hotel for 500 people on the top of the mountains, with a glacial lake. Walked up to Sky Top, a tower on the rolling top, rather windy, nice view of Catskills and lower lying farmland, though on the whole rather forested. Six wild turkeys walked across a field below, some distance away, but easy to see in binoculars. Then walked around the lake, to lunch at "The Granary," with big outdoor spread.

The lake has no inlet or outlet, but was gouged out along a fault line by the glaciers; these are called sky lakes through here. There are six of them.

Joined at lunch by Paul C. Huth, the Director of Research, also by Gail Mihocko, and after lunch taken on tour of the research station. A pivotal figure here was Daniel Smiley (1907-1989), an old time naturalist who watched and kept records of the area for sixty years. He was a second generation in a family of Albert and Alfred Smiley, twin brothers who built the hotel. Allegheny woodrat. Three skins of a woodrat, or packrat once common here, now extinct, infected by a nematode worm in the scat of raccoons that the packrats would collect. A reintroduction experiment failed. Hemlocks through here were much desired for the bark for tannin, often taking only the bark and letting the trees rot. This is also gypsy moth country, with the chestnut oak a favorite tree often killed when defoliated two years in a row, but the blight seems to have passed through and the woods adjusted to it. The composition now has fewer chestnut oaks, and the moths when they come back through do not create an epidemic. In a recent incident, a coyote took a good-sized tomcat, in a few seconds. A fisher reintroduction succeeded.

The rock is a quartz conglomerate, with rounded pebbles within, locally called the Shawangunk grit, a favorite for millstones. Especially on the tilted side, the hard surface forms a pine barrens, that is, an area of pitch pine, up to 10 feet high or so, with lots of exposed rock and thin, nutrient poor soil, often with some Vaccinium beneath. Deep fissures in the rocks here are called "ice caves," and may contain ice a good part of the year.

Drove around what is usually restricted to a walking road, the Laurel Ledge Road.

Comptonia peregrina, Sweetfern, which I first saw at Montreat. A main pine on the ridges is Pinus rigida, Pitch pine. We went by a rhododendron bog; Rhododendron maximum, the same one that is in Virginia. Some famous Indian excavations here, with arrow points dated back 9,000 years, which seems almost too close to the retreating glaciers to expect that humans would have been able to live here.

Cypripedium acaule, Pink Ladyslipper Orchid. One plant with two fine blossoms on the way out.

This is famous rock climbing country, and there were 250 cars parked along the lower road from climbers.

They are especially careful with their meteorological observations, and have a good data base with which to judge acid rain. Jim White, who is with Arctic and Alpine Research, CU Boulder, is a friend of Paul Huth, and they still send him isotope materials.

Woods are full of laurel, Kalmia latifolia, the same one that is in Virginia. Saw a good many chestnuts, still sprouting from the roots of the trees. The Chestnut blight came through here in 1913-1915.

Union College has a set of the original Audubon prints, a big folio edition in which there are 435 prints. The original subscription was only 150 or so.

June 5, Saturday. North Lone Pine Trail, from Redfeather, aborted, then some on Mt. Margaret Trail. Drove up in Jeep, to find the road was closed below the trailhead. Parked and hiked up the road about 3/4 a mile and then cut up the creek on old lumber road, hitting the main trail. But soon there were more snow drifts on the trail than I wanted to walk over, though the woods on the whole were reasonably clear of snow. Turned back. Sheriff at the gate said the road should be open by this time of year. One deer in woods.

Returned thinking first to do the Lady Moon Trail, but apparently this does not go to the lake but is a one way trail around to the road that goes down from the Potbelly to the Poudre. Hiked a ways on the Mt. Margaret Trail. This is 4 miles one way, looks like a good trail with not much climbing, often more though savannah grassland than through forest.

Bluebirds, juncos, robins, some flycatchers, kinglets. No thrushes heard. One bobolink along about Hansen Ranch, on the way up. The usual early spring flora. Some pasqueflowers fully gone to seed; some in full bloom. Thermopsis. Mertensia. Draba. Thlaspi (=Noccaea, now in Weber). Harbouria trachypleura, Whiskbroom parsley. Buttercups. Delphinium nelsonii. Lovely displays of wild iris, Iris missouriensis. Three deer in nice velvet seen about Ted's place. Cool day; it has been rainy.

June 8-14, 93. Drive to Phoenix (Tempe) and Society of Conservation Biology Meeting. Tuesday, June 8. Drove down I-25 into New Mexico. Nice drive down. Camped at Bernalillo (15 miles north of Albuquerque), at Coronado State Park, overlooking the Rio Grande River with lots of water in it. Coronado came through here and wintered here in 1540, up from Mexico, looking for the legendary cities of gold. There was an Indian Kuana Pueblo here then.

Wednesday, June 9. Drove south to Albuquerque, then I-40 into Arizona to Holbrook, lunched there. The continental divide on I-40 is 7,200 feet. Drove south thru Sitgreaves National Forest and Tonto National Forest (thru Heber and Payson, in some surprisingly good ponderosa forest, quite lovely. This country is high, 6,000 ft. Then you drop down the Mogollon Rim (essentially the end of the Colorado Plateau), and it dries out and heats up, to Mesa, Tempe, Phoenix, at 1100 feet or so, and temperature rises 20 degrees.

Lots of saguaro cactus (suh gwa row, or suh wa row) on the last part of the trip (also spelled sahuaro, sawuarro. These are really not found in New Mexico or Texas, and only a very few are found in California. They can grow 50 feet high and live 200 years. (The organpipe cacti are two others, found only in the s.w. corner, vicinity of Organpipe Cactus National Monument. They are smaller with more columns, more like a pipe organ.)

Sunday, June 13. Drove north to Flagstaff, thence to Tuba City, in the Navajo nation, lunched there. Drove on to Four Corners and Cortez, camped a little short of Durango. Nice drive through spectacular country, not far away is Monument Valley. Went into the Four Corners marker a few minutes. Camped at Kroeger Campground above Hesperus. Nice campground for my purposes, quiet and only a few people around. Cool, even cold in evening, in marked contrast to Phoenix when I left. One mule deer. Lots of thrushes singing. Nice wildflowers on the drive in.

Monday, June 14. Drove home through spectacular mountain country all day. North from Durango

to Silverton, over Coal Bank Pass, 10,640 feet, then over Molas Pass, 10,910 feet, then down into Silverton. Then up over Red Mountain Pass, 11,018, and down into Ouray. Ouray is in a nice setting. Plenty of snow still on all these mountains. Then to Montrose and up by Blue Mesa Reservoir to Gunnison. Lunched at a picnic ground off Blue Mesa Reservoir. From Gunnison over Monarch Pass, 11,312, and down to Poncha Springs (nearly Salida), turned north to Leadville. Car hesitated there and changed fuel filter, and was more apprehensive coming home. Over Freemont Pass, 11,318 feet and then to I-70. Through Eisenhower Tunnel, 11,118 feet. Lots of high mountain driving, spectacular day. Home about 8.30 p.m.

June 17-20, 93. Roan Mountain. Thursday. Flew to Tri-Cities airport and got car, drive through Johnson City and Elizabethton to Carver's Gap, and pitched camp there. Neither this nor the Twin Springs area halfway up are billed as camping areas, but neither is camping prohibited. Drove up into the gardens and had picnic supper there. Saw a fox running across the parking lot. Nice day.

Friday. Hiked to Low Gap. I first did this hike with Jim Sommerville in the spring of 1963, when we got soaked and lost the trail and had to come off an intended backpack. I hiked it June 21, 1965 with Kirk Allen and Pit Lyons, and then with Jim Sommerville Memorial Day, May 31, 1966. Climb to Round Bald (5,825 ft), then descend to Engine Gap, then climb Jane Bald (5,800 ft), then descend to a gap, then climb halfway up Grassy Ridge Bald, with Appalachian Trail cutting off sharply halfway up and going slabside of the mountain, then a steady drop to Low Gap (5,050 ft). There is now a trail shelter here. The shelter formerly below Grassy Ridge is gone. Returned, lunching at overlook halfway back. Lovely day, and lovely rhododendron on Round, Jane, and Grassy Ridge. There are Angora goats, about 80 of them, inside a large electric fence enclosure, who are to eat the blackberries that threaten to disrupt the balds. About 6 miles roundtrip. Rain in the afternoon.

Drove to Crossnore, NC for the Southern Appalachian Highlands Conservancy Meeting that evening, stopping for a look at Linville Falls, but only had time to go to the upper falls. Program by Ken Pittman, a landscape architect from North Carolina State and his graduate students. On the way back I pretty surely saw a bobcat in the headlights. Sizeable animal, no tail, and quite a jump off the road into the bushes.

Saturday. Hiked the trail along the road to Roan rhododendron gardens. A trip leader failed to show and four of us went anyway. Went to the old Cloudland Hotel site, also the the Roan High Knob AT shelter and found the Roan High Knob highpoint, with geological survey marker, 6,286 ft. Returned, then drove back and hiked out to Roan High Bluff. People were camped out this way; with good flat areas. In the evening returned to Crossnore, with time to go into the viewpoints overlooking upper and lower Linville Falls. Evening program by David Startzell, Executive Director of the Appalachian Trail Conference.

Sunday. Big Yellow Gap. Packed up and drove down and picked up the road from the State Park up to Big Yellow Gap; the trailhead is at a house up the hollow, blacktop all the way but narrow. Hiked steady climb, with some slabside portion, about 2 miles. Blue-blazed trail, weedy below but fine after that. Reached the Gap. There is an old barn converted to AT shelter use not far below. You can reach this gap more quickly from the North Carolina side, and it would make a good stay for a climb of the Hump the next day. Returned and repacked and redressed for the flight to Washington at a picnic area in the park. Sunday 4.30, flew to Washington to judge NSF/NEH grants the next day.

Geum radiatum, a federally endangered species, seen in Roan Gardens. This is a good sized Geum. Catawba rhododendron. Laurel. Flame Azalea. Ribes. Houstonia serpyllifolia, bluets. There is a rare one with a salverform corolla, not seen. Partridge berry, Mitchella repens. Gray's lily, but not yet bloomed out. Red spruce, Picea rubra, Frazer's fir, Abies fraseri. Sandmyrtle, Leiophyllum buxifolium. Vaccinium erythrocarpum, Mountain cranberry. Maianthemum. Crataegus, hawthorne. Oxalis, though not in bloom. Trillium, past bloom. Jack in the pulpit. Three toothed cinquefoil, Potentilla tridentata. Yarrow. Mountain ash, Sorbus americana. Elderberry, Sambucus pubens. An important grass here is Danthonia compressa, Mountain oat grass.

Frank Barclay is dead, but his widow survives. Fred Behrend is dead. He had a stroke out while hiking and was dazed, then was found at night, thought he was alright but was hospitalized and died a few days later in the hospital. Talked to Ed Schell, Johnson City; he seems to be the knowledgeable amateur here now.

June 25-26, Friday, Saturday. Seminar in Environmental Ethics in Rocky Mountain National Park for Rocky Mountain Nature Association. Pulled camper up, first time with Jeep, and pitched it in Little Horseshoe Park. Forty bighorns on both sides of the road and crossing the road at Sheep Lakes, holding up traffic and rangers only allowing a few cars through once in a while. All ewes with about fifteen lambs. I think this is the largest group I have ever seen at once.

Led seminar that evening at old Hidden Valley Ski Area building. Next day, seminar briefly in the building, then hiked into the Pool, interpreting as I went. Returned about 2 and finished the seminar at 3.15. Uneventful trip home. Lovely weather. Others heard coyotes in the night, I didn't. Ed McKinney, Matt McKinney's father, who now lives in Estes and does a lot of volunteer work for the Forest Service; he was an engineer at Rocky Flats. Matt Luter, recently moved here from Maine and Utah; wife also with him in the campground. Carl Koch, teaches biology in the Chicago area in high school, doing a special studies project on environmental ethics.

July 3, 93. Lake Agnes, alone, in search of the Continental Divide Trail. Guidebook says it comes down by Lake Agnes, but there is not such trail, and it seems to have been rerouted to skip this northern inverse loop. Left about 7.30, lovely day at the start, on the trail about 9.30. The road to Lake Agnes is no trouble by car but it is narrow and you hope you don't meet anybody. Trail goes up from Agnes Cabin, comes to a divide Stream Trail left, Woodland Trail right. I took Stream Trail up, lots of snow banks. Reached Lake Agnes, and tried to locate Continental Divide Trail, climbing up from the northwest corner. But no luck and lots of snowbanks.

Returned on the Woodland Trail to the junction, which is where the Michigan Ditch takes off. Scrambled up there, as this is also where the trail was supposedly routed. Met ditchrider in pickup truck. This is the most snow remaining for this time of year in 11 years. The pipe here is wooden, was made of fir milled in Oregon, shipped to the plains by train, and hauled in by mule, 90 years ago, assembled on the spot, with lots of creosote. And it still works with little repair. Took a road down and reached the parking lot about the time it started raining, then freezing rain, getting colder. Lunched under a tree. Weather deteriorating, and soon freezing rain and snow. Returned to find a car stuck in road, which a 4WD vehicle pulled out.

Returned. Very windy in town. 2 deer enroute.

On purchase of further maps, despite the guidebook description, this loop of the Continental Divide Trail seems to have been cut out. It is a bit of an odd loop, since here you are really going north eventually to get south, also the terrain is formidable. It is hard for me to see how the trail every really got down into the Agnes Lake basin, from the trail up from Baker Pass.

In Europe:

July 18-21, 1993. Royal Society of Philosophy, Annual Conference, University of Wales, Cardiff,

keynote address: "Value in Nature and the Nature of Value."

July 24, Saturday. After night in Porthmadog, drove to Llanberis, and, with Jane, rode the cog railway up Mount Snowdon. Cloudy, but rather good views until the last twenty minutes of the ride, which were socked in. Socked in and rather unpleasant on top. Sheep country all the way. Large numbers of people were hiking it. 3,560 ft. high. Drove back over Lanberis Pass, on to Betws-y-coed, on to Pontrefoelas, and over the Denbigh moors, heather moors, to Denbigh. Night at a farmhouse near St. Asaph.

July 26, Monday. At Windermere. Weather came and went but there were nice periods, some sunshine. Lunched overlooking the lake south of Windermere town. On to Coniston water, visited John Ruskin's grave. Drove north to Grasmere Lake and village, went to Wordsworth's grave. By the end, a rather good day weatherwise. Drove back to Lancaster and stayed in Kate Rawles' flat.

July 27, Tuesday. Rainy. Drove back to Windermere and drove over Kirkstone Pass. High, nice drive, pretty in the clouds, to Ullswater. Stopped, walked into Aira Force, a very romantic waterfall. The area here is associated with Wordsworth's, "I wandered lonely as a cloud" among the daffodils. On to Keswick, by Derwent Water to Rosthwaite toward Borrowdale. Cumbrian Mountains. Hiked a bit at Rosthwaite, up toward Resting Stone and Watendlath Tarn. Tea in hotel here. Drove round Holister Pass. Spectacular country. Buttermere, Crummock Water, to Lorton, and back over Whinlatter Pass to Keswick. Then by Thirlmere, Grasmere, and back to Lancaster.

July 28, Wednesday. In the morning drove through Trough of Bowland (Forest of Bowland, coming out vicinity of Clitheroe. Good moor. In the afternoon drove on to Manchester.

July 29. Debate on the Greening of Mars, Department of Philosophy and Center for Philosophy and the Environment, University of Manchester, U.K., Keekok Lee, Coordinator.

August 2-6, Monday-Friday. Arrabida Mountains near Lisbon in Portugal. Near Setubal, overlooking the sea.

Invited address, "Environmental Ethics: An American Perspective," Estudos Gerais da Arrábida-Conferências do Convento, Ambiente: Fundamentalismos e Pragmatismos. Arrábida (near Lisbon), Portugal. Professor Francisco Nunes Correia, Director. A Conference for officials in environmental decision-making, sponsored by the government of Portugal commemorating five hundred years since the Portuguese discoveries in the New World.

August 4, Wednesday. Hike through brushy forest to the high point of the range, made difficult by a Quercus with leaves like holly. Sunset on top, and hardly out by dark.

August 6, return from Portugal to England and drive north to Scotland.

August 10, Tuesday. Hiked up Ben Nevis. On trail at 8.00 a.m. Good day, though upper one-third of the mountain remained in the clouds. Few people were on the trail at first, but I passed many hundreds on return. Windy and cool, though I hiked nearly to the top without jacket, had jacket on at the summit, and kept it on all the way down. A steady climb, a slog, but worth it. 4,406 ft. I was



**Rolston on Ben Nevis
August 10, 1993**

here first with Dick Baker in 1957, 36 years ago. Many memories, and what will the next 36 years bring? On the summit there is a war memorial, a ruined shelter, a defunct meteorological station, and a cairn. Steady walk down.

August 22-28, 1993. Invited address, "Rights and Responsibilities on the Home Planet, at XIX World Congress of Philosophy, "Mankind at a Turning Point: Philosophical Perspectives," Institute of Philosophy, Russian Academy of Sciences, Moscow, August 22-28. Also, paper on "Environmental Ethics and Development Ethics."

Friday, August 27. Drive south from Moscow through open country to Yasnaya Polyana, Tolstoy's home estate. Many birch trees, rather uninhabited country generally, though there were numerous clusters of summer homes, dachas, where Muscovites come from the summer, most with vegetable gardens. Through Tula, much torn in the war, and economically depressed in the current Russian collapse. Yasnaya Polyna means "shining glade" and is a once-aristocratic state. Tolstoy was born and lived here all his life, except for periods in the military in the Caucuses and some winters in Moscow. Kept as a nature preserve and working farm. Walked to Tolstoy's grave, in the woods about a half mile away, a simple grassed mound in the forest. Here is "the green twig with the secret of life."

Back in the States

September 13, 93, Monday. Day in Rocky Mtn. National Park with Bob Crumby and Judy, also Jane. Snowed all day! Went to Bear Lake. Some few but good elk in the late afternoon.

September 29-30. Ghost Ranch, Abiqui, New Mexico. Nice flight down, Mesa Airlines, small plane, didn't fly too high, and you could see lots of aspen in good color. Very decent weather at Ghost Ranch, lovely in the evening with moon, but didn't have much chance to get out. U. S. Forest Service symposium on spiritual values in forests.

October 8-11, 1993. Oak Ridge, TN, at symposium on ethics and the environment. Fall colors premature but not bad. Sunday, October 10, drove to Cherokee National Forest, Madisonville, thence to Tellico Plains (by the lake from the Tellico Dam, and then on FS 210, good paved road, to Bald River Falls. On to FS 126 and back around south to Holly Flats Campground, reaching it for lunch. Hiked Bald River Gorge Trail all afternoon, hiking back north up the river (Trail # 88). It had rained some in the morning and things were wet, but nothing falling. Very nice, fall colors not bad. Lots of arbutus in here. Stopped at a good plot of Lycopodium, thinking about how ancient a plant it was. Total length of this trail through back north to Bald River Falls is 4.8 miles. (See description in Skelton, Wilderness Trails of Tennessee's Cherokee National Forest, p. 210, 217. Camped at Holly Flats, quiet evening, nobody else in the campground.

Monday, drove to Cades Cove in Great Smoky Mountains National Park. Back to Madisonville, then to Maryville, then to Townsend, and into Cades Cove. Very good colors and nice, reasonably sunny morning. Drove around Cades Cove, with many memories of camping there before and looking for deer thirty some years ago. Too many cars on the road. Lunched en route, near one of the restored churches. Left about 2.00 to catch the plane from Knoxville, and back in Fort Collins that night.



Tolstoy's grave

October 29 - November 2. Lexington, VA: Washington and Lee University, and Rockbridge Baths. Flew to Richmond Friday to get Jane, where she had been a week, drove up to the Valley Saturday a.m. in the rain, went through Staunton and by 320 North New Street, which has just been sold, after being in the family since the 1920's. Drove to Hebron cemetery and on to Churchville, then back down Route 42 to Goshen and into the Pass that way. Lunched at the memorial in the past. Rainy, but leaf colors good. Drove around Rockbridge Baths. Drove into Lexington, and got in to the Robert E. Lee Suite in the guesthouse! Dinner that night with Danny and Elizabeth Welsh.

Sunday. Went to church at Bethesda. Clarence Tolley, Branner Tolley were there whom I remember, and remembered daddy. Nobody seemed to know how to climb Jump Mountain. Driving around before church, Jane and I saw five wild turkeys, in a field, up Walker Creek. After church, changed clothes and I took off up a road between the old Adams house and the old Sterrett house (about where Aunt Liza used to live), now a tree farm. Hiked in rain into the base of the mountain, but did not get to or very near the top. Some snow falling and ice on the trees up here. Goretex boots got very soggy wet. About four deer, mostly tails in the woods. Woods are rather cut over.

Supper with Harlan Beckely and some W&L faculty.

Monday. Morning, drove back to Goshen Pass, talked to the woman who now runs a greenhouse at old Gibson place, then went through the pass to the Scout camp and got a map. The Scouts have put the trails on the new topo map and they are all on the west side, which is public. Mostly from a swinging bridge over the Maury River on the west end of the pass. If I had known this the day before I could have hiked to the top.

Monday afternoon and evening, spoke at Washington and Lee. 10.00 p.m. drove back to Richmond, arriving 12.30 p. m. Flight out Tuesday at 7.00 a.m. and back to Ft. Collins to teach Tuesday night.

November 7. Hiked to the Loch in Loch Vale with Andrew Brennan, of Perth, Western Australia, formerly of Stirling Scotland. Took snowshoes, but never put them on. Several dozen elk in the evening.

Nov. 17 to Nov. 28. Oxford and Norway, with Jane. Spoke at Oxford on Thursday, Nov. 18, flew to Oslo on Friday, and went to a reception that night, met Arne Naess for the first time. Saturday, Nov. 20., train to Geilo and stay at cabin there. With Per Ariansen, Jon Wetlesen, Torben Nielsen (all in philosophy, University of Oslo), Martin Ishoy (Danish, doing theology and environment at Aarhus University), and Inger Marie Lid (doing theology and environment at Oslo). Rode train up and gradually into more and more snow with the climb. Cabin is at Geilo, a ski town, not all that far below timberline here, toward 5,000 feet. Weekend in the cabin, which belonged to Torben's family. Went out and hiked up a nearby road for a while that afternoon, but it gets dark early (4.00 p.m). Very wintry scene out the window. Zero degrees Fahrenheit.

Mostly birch, somewhat smallish tree, but whether this is because it is second growth or natural I could not find out. The birches here seem to be Betula venucosa, B. pubescens (introduced into New England, B. alba in Gray, White Birch of Europe), B. nana (arctic and subarctic, cf. B. Michauxii, Dwarf Birch in Canada). Lots of spruce, Picea abies, Norway spruce, often cultivated as a shade tree in U.S., introduced from Europe. [It's the Norway pine, better called Red Pine,

Pinus resinosa, that is, in fact, native to the U.S., most abundant and growing to largest size in northern Midwest states, often planted in northern parks.] There is some pine here, Pinus sylvestris, Scotch Pine, cultivated in U.S. and locally naturalized). This pine proved to be much more common over on the western side. They served us local trout that had been caught and frozen. Also cloudberries picked in the summer, Rubus chaemaemorus. These are found also in the New World north, Labrador to Alaska, and down into mountains of Maine and New Hampshire.

Sunday, went out in the late morning and skied up the same road we had hiked before, only further up. Sunday toward dark Torben and I went on snowshoes down to the river. Very frozen.

Monday, caught train over to Bergen. Lovely train ride over the frozen plateau, the Hardangervidden Plateau. Two prominent summits here are Hardangerjokelen and Hallingskarvet. Then down into Bergen. Train ride is 307 miles. Monday night, ate reindeer. Tuesday, spoke at the University of Bergen. Wednesday, train ride back. Clear blue sky to the top, lovely with snow on the ground as the train climbed to the top. By the top it was snowing, and snowed all the way down, snowing hard in Oslo, where they usually do not get that much snow. Thursday and Friday, spoke at Oslo, with Arne Naess as commentator. Saturday, toured the Viking ships, the Kon-tiki, and the Fram (which went, in the ice, near the North Pole). Sunday, went to the Cathedral Church. Monday, flew home, 25 hours from Oslo to Ft. Collins.

Dec. 17, 93. Loon on pond in front of the veterinary medical school. It has apparently been around several weeks. Possibly injured and can't fly further south. Nice view.

Dec. 20, 93. Plains, Wellington, Nunn, Central Plains Experimental Station, Crow Valley. Bluejays, harrier, red tail, pheasants at Wellington. Nice views of coyote hunting in a field, watched him ten minutes, pounced on this or that, but I never saw that he caught anything. Coyotes are usually grey, but they can run to reddish brown, as this one did, especially in summer and on the plains (Rodeck, Guide, p. 48). Bushy tail held low when running. Typical hunting pattern is to follow a trail quickly, then freeze for a moment or two with alert head and ears, then pounce.

Drove to Nunn. Nice prairie falcon, sitting on a haystack, almost at roadside. I could see the sideburns well, then he flew and I got a good look at him in flight. Soon came upon a large golden eagle, right at roadside as I came up over a hill. I got him in the scope, though he really filled the scope. Then he flew, perched further off, and I watched him twenty minutes. Full sunshine and as nice a view as I remember. Rough-leg hawk, white tail, black terminal band.

Drove by Central Plains Experimental Range, then on to the Chalk Cliffs area and lunched at the off-road vehicle racetrack there. Sunny, but windy, and rather bleak. Broken snow.

Drove on east, and where the road jacklegs one mile south, saw a badger in the fields. Still full sun, and watched him in the scope for twenty minutes. Then walked over to see his tracks in the snow, but they were rather nondescript. The track is supposed to have long claws on the front feet and to be pigeon toed. Rear footpads are put in front pad tracks, so that the result is only a string of two, not four. Short-legged and quite a waddle to it as it walks, you could probably spot this waddle from a distance even if you didn't know what it was (maybe you could confuse it with a porcupine). They are mainly active at night, dawn, dusk, but this was 1.30 p.m. The badger is a carnivore and active throughout the year. Eats anything, but likes to dig out ground squirrels. Feeds more on mice in winter.

Kestrel. Unidentified black hawk. Went in Crow Valley and looked around, but not much moving

there. About fifteen antelope on the way home, further out on the plains, and then, just east of the Severance turnoff, there were about three dozen more in the field. I think this is the closest to Fort Collins I have ever seen them. Lots of horned larks, all day long.

Dec. 26, 1993. Rawhide Power Plant. Audubon bird count, with Kevin Cook, along the dam.

Common Goldeneye, 42

Ruddy Duck, 1, white cheeks on male, but tail not seen cocked up

Ringneck Duck, 2, bold white ring near tip of bill

Pintail, 18

Bufflehead, 28

Mallard, 243

Western Grebe 1

Scaup, 64

Hooded Merganser, 5

Common Merganser, 36

Gadwell, 54

Shoveler, 19

Pied Bill Grebe, 10

Horned Grebe, 13

Earlier that day, others had seen two Red-necked grebes, very unusual here, but I did not see them.

Bald Eagle, 1 immature, 1 adult, nice flying over

Canada Goose, 476

Oldsquaw Duck, 2. Unusual. This is an arctic sea duck. Seen well, a pair that stayed together.

Herring Gull 2, uncommon but regular here in winter. larger, pinkish legs

Rig-bill Gull, 9

Townsend's solitaire, 1, in Russian olive at the power plant building

House finch

1994

January 2, 1994. Pool and on beyond a ways, on foot in snow. Tried to get Giles and he stood me up for the fourth time! Nice day. Four bighorns on the hillside in distance above the Dam Store right at the mouth of Big Thompson Canyon, then two more in the narrows. Then two rams right on the steep bare rock about one-third of the way up the hillside, in the narrows. They were moving parallel and a little up, picking their way, jumping a bit here and there. Spectacular sight.

Drove on into the park, bought an annual pass, and on toward parking lot. But I had to hike the last .7 mile in. There was about half inch of fresh powder snow on the road. Later, on the trail, it covered up the icy spots, of which there were surprisingly many. Often the trail was a solid sheet of ice, and going was slippery, though where there was dirt underfoot, no problem. Fell down twice, once going on, once coming back. The fall broke the little glass thermos I have had for thirty years. Lots of coyote tracks, but little else. Spitting snow from the misty clouds up the canyon and towards the peaks, but there was blue sky behind toward the East. Reached the pool and went to the second bridge beyond, then a little further. Lunched back at the pool, experimenting with hand warmer gadgets to keep my fingers warm. Then hiked out. Carried the snowshoes but never put them on.

Drove around to see elk. It was windy and they were not in the parks, but down nearer the Fall River Entrance Station, about 60 of them. Nice sight. Saw about four in Horseshoe Park. One mule deer in the canyon, on return.

January 11, 1994. Two great horned owls in the CSU Library parking lot. I came out of the office to hear them calling each other. They were sitting on the lights and hard to see above the bright lights, even when you knew they were there. But one flew to another post and I could see it clearly. Mating calls and behavior, I suppose.

January 23. Out on plains with Jane trying to see snowy owl, failed. Left about 7.30, and nice adult bald eagle at the South Platte crossing between Masters and Riverside Reservoir. Two men who stopped there said they had just seen the owl, way out on the ice, due north from the outlet. But when we got there I couldn't find it, though I scanned the reservoir as best I could. Then drove around to the east side and walked up to edge and scanned some more. Colorado Fish and Wildlife person who stopped by there said he had seen it two weeks before, but couldn't find it on the ice either. The owl has been around several weeks. Another good adult bald eagle up at the inlet area. Six deer right at us in the trees and brush.

Went on up by Orchard and Weldona, to Jackson Reservoir. Lunched there. Lovely day. Then drove back, tried Riverside again without luck, and drove home. Stopped off to see the loon one

more time at the Veterinary Medical Pond. Lots of geese during the day, but not all that many other waterfowl.

February 3, 94. Spoke at Wildlife Conference at Lake of the Ozarks, Osage Beach, MO. Flew back in Division of Conservation light plane, a Cessna, over half the state to Kansas City, in order to make flight out of Kansas City to get back to teach in Ft. Collins at 5.00 p.m. Lovely flight low, absolutely clear day, and clear view of the countryside. Missouri now has a good number of bald eagles in the winter, and they even organize eagle watching days to go and see them.

Alberta

March 9-18, 1994. Alberta, Canada, and Jasper National Park.

March 9-11. Lectures at Augustana University College, Camrose

March 12, Saturday. Drove from Edmonton to Jasper National Park. Six coyotes seen variously in the fields enroute, three at once. Lovely day and nice drive. Country is snow covered, though surprisingly this somewhat disappears in the valley bottom as you approach Jasper. Three bighorn sheep roadside. One adult bald eagle seen perched in tree over river. Perhaps a hundred elk, including some very nice bulls. Staying at Lobstick Inn. A lobstick in the past was a tall tree with all but the top branches lobbed off, as a landmark. Rivers have an outwash effect, due to melt and runoff in spring.

March 13, Sunday. Joined Peter Duck (Willow Root Environmental Ltd, P. O. Box 995, Banff, Alberta T0L 0C0) and Clare M. Zschaler, P. O. Box 705, Las Vegas, NM 87701). Rainy day off and on. In his van, drove down Athabasca River a kilometer or so and cut off into road to Moberly Flats. Walked in flats just south of Snaring River and below the Palisades, up to the river. Found a number of wolf tracks in here, and followed them a while. Several piles of scat. Then walked around the area to the north of the bridge over the river. Lunched in the vain in the rain. Afterward drive down the river to some sand dunes adjacent to the road on Jasper Lake on the west side, with Talbot Lake on the East side. Then we walked around the airfield area, and found several well-eaten carcasses there, mostly skin and bones left, also some of the scattered rumen (the grass in the rumen that the animal had been eating when killed). This is where the park wardens (as rangers are called here) often dump animal carcasses that are killed on the road. Eighteen bighorns seen in scope across river. Two more on hillside on return.

Seen:

--red-osier dogwood

--black spruce (Picea mariana), narrow ragged crown, drooping lower branches, often a club shaped top. This species is often in wet areas.

--white spruce (P. glauca)

--Engelmann spruce (P. engelmannii)

--Lodgepole pine (Pinus contorta)

--Low juniper (Juniperus horizontalis), one I don't know, quite low on the ground.

--Douglas fir. This is as far north as Doug fir grows and it is thought to be being replaced by lodgepole pine.

--Amelanchier sp.

--Hylocomnium splendens. This is a very common moss here.

--Pleurozium schreberi. Also quite common.

--Shepherdia. common here.

--Dryas drummondi

--Aspen

--Balsam poplar (Populus balsamifera). Big resinous buds compared to aspen. This is common here.

Wolves were gone from Banff for forty years, but returned there on their own, from Jasper, where they have been continuously present. Noisy ravens that stay and don't move on are good indicators of a wolf kill.

One redtail hawk, though on the whole buteos are not much in evidence, at least at this time of year.

March 21, Monday. Maligne Lake Road, past Medicine Lake to Maligne Lake. Skied the loop around to Loraine Lake. Lovely day. Looking for evidence of caribou, and found various caribou tracks, mostly older ones in the snow. The track is like two kidney beans side by side. Another sign seen is cratering in the snow, where they push it back to dig out lichens beneath. Elk also do this, but differently and not in such deep snow. These are woodland caribou and only found a few at a time, not in big herds. They are considered to be in decline here. Coyote tracks. Snowshoe rabbit tracks.

Paul Paquet is the wolf expert in the area, but his work is now over. Shelly Alexander was also involved.

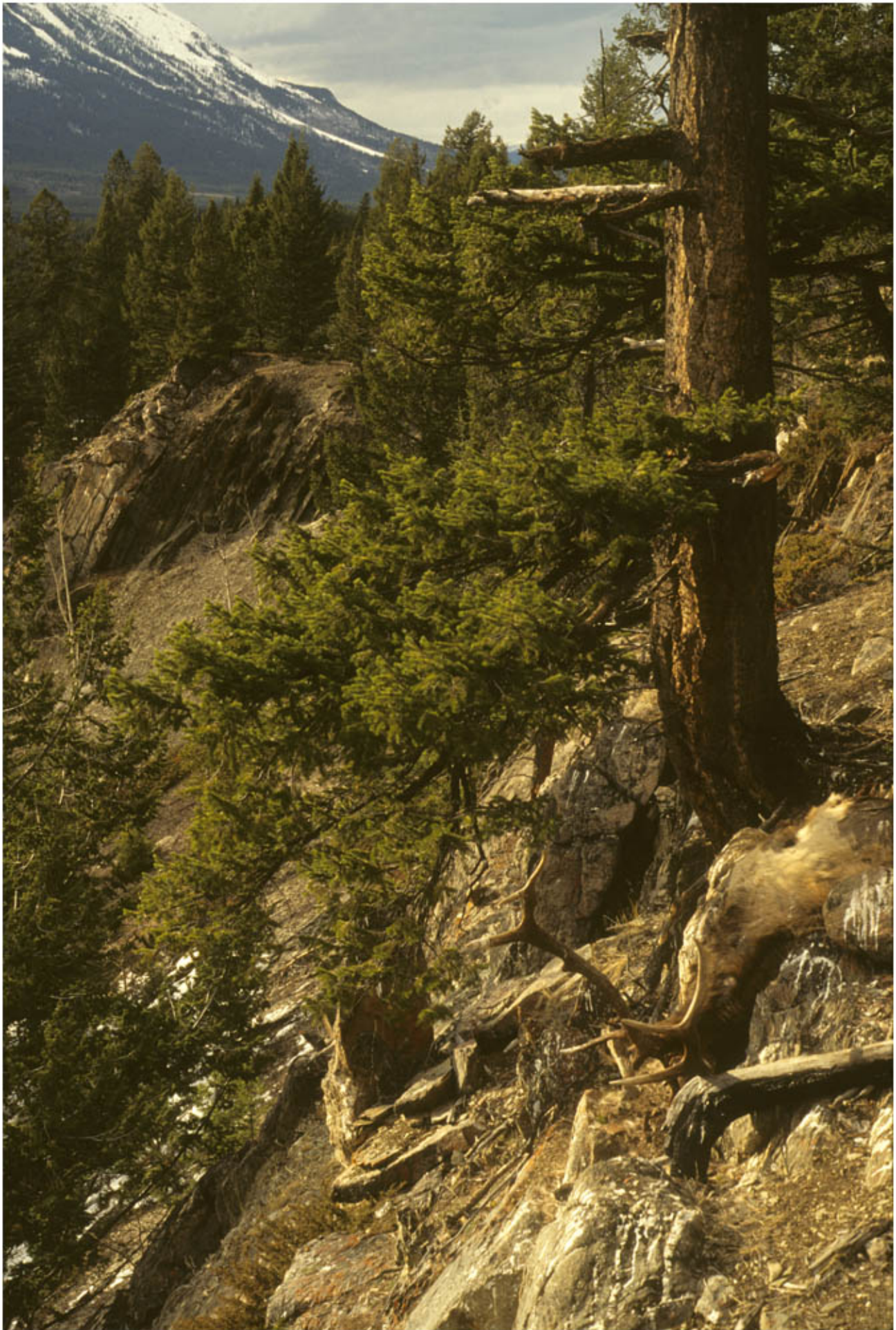
Alpenglow. The alpine peaks in the waning evening sun, but more specifically said to be a reddish re-illumination of the peaks after they have passed into shadow, that results from a refraction of the sun's rays resulting from a cooling of the air.

March 15, Tuesday. Drove up Icefields Parkway a short distance, crossed the Athabasca River. Hiked through lodgepole pine to Prairie de la Vache. Found moose skeleton, eaten by wolves, then wolf tracks, and followed them a couple hours. Lunched overlooking the valley. Then we did a shorter loop in the lower end of the valley and found more wolf tracks but couldn't follow them. Returned to van.

Then we went a short distance back toward Jasper to a trailhead toward Jasper, the Valley of the Five Lakes Trail. Walked in forty minutes, then climbed a steep hillside. Saw a raven carrying something (meat) in its mouth, then another doing the same thing, and traced the ravens back to a tree up on a hillside. There we found a fine bull elk carcass in a quite spectacular location, at the edge of a cliff. The carcass had been dead some days, with the odor of decay, but was not easy to get at, since part of it was somewhat draped over the cliff. There were fresh wolf tracks in the snow with blood in the tracks, where wolves had been at the carcass earlier that day or the night before. We examined the carcass, then drew back to an observation point and waited until toward dark, but saw nothing except the ravens that returned.

Shepherdia, common shrub. Arctostaphylos uva-ursi, Kinnikinnik, Bearberry, is certainly common here, a massive ground cover beneath the lodgepole, or in somewhat open areas of lodgepole. It seems an important bear food.

March 16, Wednesday. In early morning, we returned to the wolf kill site off the Valley of the Five Lakes Trail, and waited a while, but saw nothing further. The tracks seen yesterday had melted. Went down into the valley floor and found some day old or so tracks and followed them a while. Wolf scat in here; there are intestinal parasites in the scat. Found elk antlers several times, often





rather eaten.

Returned to van. Drove to Wabasco Lake area, and hiked in. Another wolf trail in here. Followed it half an hour. Lunched in here. Pileated woodpecker holes, rectangular. The pileated runs coast to coast in Canada, but stops in the U.S. at the Mississippi (though a few come into Idaho panhandle from Canada). Also Three-toed woodpecker sign; it flips the bark back to get beetles, it doesn't drill in. One robin, the first of the season.

Drove to Columbia Icefield, spectacular scenery along the way. But there was a white-out at the Icefield Center and we were unable to walk in to the glacier and icefield. Separated from Peter Duck and Clare Zschaler here. I returned to Jasper. Adult bald eagle on the ice down the river, near some kind of a carcass that was at the edge of the river. Many ravens also at the carcass. Picnic supper on the Snaring River/Palisades Road.

March 17, Thursday. Drove to Yellowhead Pass and crossed over a while into British Columbia. Named for a blond trapper who lived in the area. After lunch, drove back to Edmonton. Two bald eagles, one adult (presumably the same as the night before) and one immature, at the carcass on the river, and, again, lots of ravens, also now magpies. Passed the McKenzie Highway, which goes up to the Alaska Highway.

Israel

March 18, 1994. Friday. Flew home, hastening to get packed for Israel.

March 19, Saturday. Flew to Israel, via Zurich, Tel-Aviv, then flight in four engined prop plane to Eilat. This is the Israeli city at the north end of the Gulf of Aqaba, a northeast extension of the Red Sea, with the Sinai peninsula on the west. The Jordanian city of Aqaba is adjacent.

March 20-24, in Society for the Protection of Nature in Israel, 40th Anniversary Conference, with the two trips below worked in.

Israel is long and narrow (290 miles by 85 miles), with a varied topography, from forested highlands and fertile green valleys to mountainous deserts and from the coastal plain to the semitropical Jordan Valley and the Dead Sea, the lowest point on Earth. Rainfall ranges from 20-50 inches in the north to less than an inch in the far south. Climatic conditions vary greatly within a short distance. Approximately half of the country's land area is semiarid.

Israel has faced modernization and development with a mushrooming population, often given higher priorities than nature conservation. Building, reclaiming, planting, and "making the desert bloom" have been national necessities, and most Israelis took for granted that the mountains of the Galilee, Judea, and the Negev, the Mediterranean sand dune coast, the River Jordan, and the coral reefs of Eilat, the sunbirds, gazelles, and the ibex, the myriad wild-flowers would all be there forever. Yet the growth of Israel as a modern state has threatened to destroy the landscape. Israel's most effective organization here is the Society for the Protection of Israel, which operates 26 Field Study Centers, and annually involves nearly twenty percent of Israel's population in outdoor recreational, conservation, and learning activities.

The SPNI is the only mass participation environmental movement in the Middle East. It sponsors Eretz Magazine (The Land), a quarterly in English, featuring both nature conservation and the conservation of antiquities. It also organizes an extensive series of nature tours for both Israelis and tourists from abroad. The Society celebrated its 40th anniversary this year, with a major international conference (March 20-24 in Eilat) on the role of NGO's in protecting nature, and reappraising successes and failures in Israel and many other developing nations. The Society for the Protection of Nature in Israel has 45,000 members. Yossi Leshem is executive director; Yoav Sagi is chair of the official board. Contact SPNI, 4 Hashfela Street, Tel Aviv 66183 Israel. Phone 972 (country code) 3 (city code) 375063. A U.S. address is 25 West 45th Street, Suite 1409, New York, NY 10036. Phone 212/398-6750.

Israel has set aside some 120 nature reserves, encompassing nearly 400 square miles. Israel's fauna and flora includes over 380 bird species, 150 mammal and reptile species, and near 3,000 plants. The population is 90% urban.

Projects and issues. A major campaign against wildflower picking has been remarkably successful. A Voice of America transmitter installation once planned for the Negev that threatened 2,000 acres of environmentally sensitive land has been relocated. There is an effort to reintroduce to the landscape all the fauna and flora mentioned in the Bible that have since become extinct in Palestine (for example ostriches and wild asses). The environmental impact of the National Water Carrier, taking water from the north through a network of pipes to the more arid south, has been monitored. A current project includes assessment of Highway 6, a four-lane, limited access highway that (paralleling exiting Highways 2 and 4) could be environmentally disruptive.

Israel is a major flyway for migrating birds from Africa to Asia and Europe. The birds prefer not to fly over water and get funneled through Palestine. Over a million birds of prey pass through the Eilat and Sinai desert region each spring and fall, about twenty species are observed. As many as 220,000 honey buzzards (a buteo hawk) have been seen in a single day. Radar images have depicted lines of storks virtually as long as the nation itself. The effect of development, as well as of air traffic, commercial and military, on this migration is under study.

I spent two mornings with birding groups, trips sponsored by the International Birdwatching Center, Eilat. This was the time of their spring migration festival.

March 23, Wednesday. The first day was a trip to watch for migrating raptors flying over the desert hills. Led by Reuven Yosef, originally from India but now an Israeli, and Bill Clark, who is an American but lives here. Israel is a major flyway for migrating birds from Africa to Asia and Europe. The birds prefer not to fly over water and get funneled through Palestine. Over a million birds of prey pass through the Eilat and Sinai desert region each spring and fall, about twenty species are observed. As many as 220,000 honey buzzards (a buteo hawk) have been seen in a single day. Radar images have depicted lines of storks virtually as long as the nation itself.

The birds were often high, especially later in the morning, but not always. Many came in low enough to get a good look at them. The leaders were skilled spotters and could identify the birds at great distance. There were teams of spotters scattered a key spots in the mountains. Their daily count is 5,000-7,000 birds now, sometimes as high as 10,000. We went back partway up Mount Yosef, the mountain where the Dalai Lama had spoken the day before, and then all the way to the top, then a couple other observation sites.

black kites, with long tail, many dozens seen.

steppe buzzards, a buteo hawk, rufous. Probably the most common bird of the day, hundreds

seen.

steppe eagles, short tail, drooping wing tips. Perhaps a hundred seen.

osprey, only one or two seen.

long-legged buzzard

northern harrier (but which one is this in guide?)

black stork, about thirty in one flight

lesser spotted eagle, unusual here

Eurasian kestrel

brown necked raven

pallid swifts

red rumped swallow

Hiking trip through the Red Canyon, with narrow wash-out channels that you have to slide down through. One fox seen silhouetted in the evening as we got back on the bus, said by the leaders to be a red fox. Israel even has a few wolves, apparently the same species as in the U.S., circumboreal and down in Europe and Asia to Israel.

March 24. Trip up the valley bottom, led by John Morgan, the chief ringer (which is what they call a bander) at the banding (or ringing) station here.

short-toed lark

lesser short-toed lark

red rumped swallow

ostrich (on Biblical reserve)

palm doves

collared dove

common bulbil

black stork, flight of several dozen overhead

Arabian babler

olivaceous warbler

Palestine sunbird

brown necked raven

Hoopoe lark, singing

desert finch

Ruppell's warbler

common swift

Northern wheatear

Isabelline wheatear

Spanish sparrow -- different species but a variation on an English sparrow

Northern swallow

bar-tailed desert lark

bimaculated lark (having two maculae. A macula is a spot of skin differentiated from other skin)

graceful warbler

little green bee eater

alpine swift

spur winged plover

barn swallow, or swallow

lesser whitethroat (warbler)

pale crag martin

Dead Sea sparrow - very local here, nowhere else
crested lark
white wagtail (= pied wagtail?)
steppe buzzard

black stork, nice group over head.

Seen in the Nature Reserve, with a sort of zoo at one end of it. Caracel, gray wolf, hyrax (like a cony), Arabian oryx, Scimitar-horned oryx, addax (large, light-colored antelope), Somali wild ass. African wild cat; this is the ancestor of the housecat, and looks much like it.

Returned to conference for the midafternoon.

Yossi Leshem came and got me (along with Sara Parkin) to go to see the Lichtenstein's sandgrouse come in for the evening. This grouse feeds in the desert during the day and returns regularly at dusk to some spring, in this case a modest spout spring on the edge of town. Some 40-50 people had gathered at the edge of a cliff to watch with as many spotting scopes. We waited for the dusk to fall and about twenty birds came in, apparently in pairs mostly, with a strutting display. Then they drank, and flew off.

Yoav Sagi is chair of the board; I had met him earlier in Ottawa. Yossi Leshem is executive director; robust and full of energy. He is an expert in bird migration and hopes to return to this soon.

See "The Red Sea," in National Geographic, November 1993.

March 25, Friday. Morning. Went to the Coral underwater observatory. You can walk down underwater and see myriads of fish. Quite a contrast in the wealth of fish life underwater and the desert above ground. This is as far north as coral reefs come.

Flew to Jerusalem. Afternoon in old city, though it was largely shut down due to strike, one month since Hebron massacre, also this is Jewish sabbath, also the Passover.

March 26, Saturday. Trip to Massada and Qumran, in Judean desert. Went swimming in the Dead Sea. St. George monastery carved into the desert canyon hills, on return. Saturday night, Passover seder with Avner de-Shalit, political science, Hebrew University.

March 27, Sunday. Flew to Paris. Nice views of the alps flying over; they are more extensive than I had imagined. It took some while to fly over them in the plane. Night in Paris.

March 28, Monday. Arrived in Ft. Collins. end Israel trip.

April 2, 94. Saturday. Visit to La Brea tarpits in Los Angeles. Saw, in place in tarpit excavations, the bones of ground sloths, dire wolves, sabre-toothed cats, camels, mastodons, western horse. Petroleum seeped to the surface here and, evaporating, formed tar, or asphalt, which became an

animal trap. Predators came in to eat the trapped herbivores and, in turn became entrapped themselves. It became a sort of self-resetting trap, and collected many thousands of animals from about 40,000 to 10,000 years ago. So these are Ice Age animals, perhaps the best fossil collection from that period on Earth. One human being has been found here, a woman, who seems to have been killed, judging from her skull. Area is now a park within Los Angeles.

April 17, Sunday. Wichita Mountains Wildlife Refuge, Oklahoma. Day trip while speaking at University of Oklahoma, Norman. Drove down with Judith Little, finishing Ph.D. degree here and taking job at SUNY Potsdam. Also along: Mary (visiting Kant scholar from University of California, San Diego). Linda Wallace, botanist and ecologist met the next day, is working on a study here, compared to Yellowstone. Plants here respond negatively to grazing; in Yellowstone they respond positively.

Refuge is principally for bison, elk, and longhorn cattle, also some deer. All seen. The longhorns are wild only in a limited sense; annually they are rounded up, some sold, many castrated to make steers (which have the longest horns of all), and connoisseurs keep track of all their blood lines. The surrounding land is flat, but here there is a mountain uplift, which produces an open oak forest, intermingled with grasslands. The oaks are post oak (Quercus stellata) and blackjack oak (Q. marilandica). The grasses are Little Bluestem (Andropogon scoparium), Big bluestem (A. gerardi), Indiangrass (Sorghastrum nutans), Hairy grama (Bouteloa hirsuta), and Blue grama (B. gracilis). Nice prairie down town. Sparkplug trouble in the car forced us to take a long lunch, while the car cooled down enough for a mechanic to replace it.

One scissors-tailed flycatcher in town the next day.

April 25, 94. Hike to Nymph Lake, and toward Dream Lake with Johan Hattingh, Stellenbosh, South Africa. We could walk on the snow, about 2 feet of it typically. Snowing steadily as we walked, and it was not easy to find our own tracks on the way out. We turned back short of Dream Lake, lack of time, and going was somewhat rough. Long stretch of wet and/or cloudy weather in here.

May 8, 94. Crow Valley alone. Jane is in Richmond with her mother. Nice day but windy. We had had hail about midnight the night before and hard rain in town, but no signs of rain by the time I reached Crow Valley. Pheasants, mallards, Canada geese. Meadowlarks. Doves. Lark bunting, lots of them. Bullock's oriole, brilliant colors. Audubon's warblers, perhaps two dozen. Orange crowned warbler (I think so). Western kingbird. Swainson's hawks, half a dozen. Mockingbird, singing profusely, but only saw one. Say's phoebe. Cowbird. Bluejay. Tree sparrow. White crowned sparrow.

Went north to road a couple miles north that goes back west (in by the Marsilea) and drove it on through for the first time. Really a quite good road after the first mile, and not bad anywhere. Horned larks, lots of them, with skylarking behavior, high in the sky to mark territories. Lots of lark buntings in here. Savannah sparrow. Turned back south and came out on the main blacktop road. One group of four antelope, then another of twelve antelope. Two burrowing owls in the prairie dog town at the south end of the diagonal. Six white pelicans overhead on the return trip.

May 13, 1994. Oregon. Hike in Cascade Head Natural Area, old-growth forest with Steve Radosevich, professor of forest science, at Oregon State University. On the coast, north of Lincoln City. I hiked this with Dan Bottom in February 1991. Miner's lettuce, Montia perfoliata, especially prominent underfoot and in full bloom. Salmonberry, Rubus spectabilis, in both bloom and fruit; the berry is a big salmon colored raspberry. The trail later rises to a grassy headland (here called a prairie). This is a Nature Conservancy area. One racoon seen well in the forest. Also a black-

tailed deer, which Radosevich seemed to consider a separate species from mule deer. But Burt & Grossenheider say that it was formerly called a distinct species (Odocoileus columbianus) but is now regarded as a subspecies of mule deer (O. hemionus). Nice weather. One red-tailed hawk nice over the sea cliffs. (Later, did this area gain, Dec. 1995.)

Later, drove to his study area, looking at some old growth enroute. He maintains that the alder that come back after a clearcut fix nitrogen and help to fertilize the Douglas fir that area planted, if there are not too many alder. But at least a moderate number of alder make the Doug fir do much better. Many replanted hillsides on the drive back, all they ever plant here is Doug fir, and they always replant. Oregon law requires replanting within a year, else there are fines, on public and private land both. After 12-15 years, the hillsides begin to look forested again, with trees about as high as a person is tall. That evening, dinner with him and his wife, Lynn. He is raising a vineyard.

Saturday, May 14. Mt. Saint Helens trip.

Left Corvallis early and drove north of Portland. Turned off (as I had been told in Corvallis) at the Woodland exit and drove in to Cougar. But the road is closed here any further, due to snow, though open by June 1. Returned, and drove further north to the Castle Rock exit and went in through Toutle. There is a good visitor center shortly before Toutle, with the mountain yet 43 miles away (tho visible from here in good weather). Then drove on to the Coldwater Ridge Visitor Center, not long since completed. There is still to be completed a Johnson Ridge Observatory.

The whole north side of the volcano blew out, an enormous explosion, tossing around rock chunks as big as the Empire State Building, and producing the largest landslide in recorded history. May 18, 1980. The initial blast was all in a minute or so, though the mountain had been bulging for days, the north side moving out several hundred feet. Rocks the size of grapefruit were tossed as far as the visitor center, 7 miles away, arriving at up to 600 miles per hour. Trees were devastated for 150 square miles by this "stone wind." People were killed up to 17 miles north, some 50 plus persons killed, although there had been large evacuations in the days before. The last 10 or so miles you drive through is the blast zone, largely desolation. Yet on the south side of the mountain trees survived. After that there was a gigantic dust cloud that came up, drifting eastward, and putting dust layers in three states. Spirit Lake was remade, filled with debris, and the lake level rose 300 feet. Some persons there who had refused to be evacuated were lost, especially a man named Harry Truman.

Heard a talk by a ranger naturalist who had been a school girl at the time of the blast, with her grandparents and other members of the family present. She was in Toutle, and there when the blast occurred, in her house, and swiftly evacuated. Went on a ranger naturalist tour through the new plant growth. Ate a late lunch here.

There is a volcano dome forming inside the old crater now, though nothing much has happened there in recent years. It still puts out steam, visible from the Visitor Center. One deer on the way in. A little rain late in the day, but otherwise good weather. Returned to Portland. Flew home, Sunday, May 15. In the summer, the thing to do seems to be to go to Windy Ridge for the view.



The Rosenquist Photographs
Mount St. Helens
May 18, 1980



5:30 AM



8:27 AM









May 20, 1994. Stretch of Appalachian Trail, south of Harper's Ferry, West Virginia. I was doing a study retreat on environmental ethics and went a day early, Rolling Ridge Study Retreat Center. Left from the center, and walked on old logging and farm roads to the trail, about 2 miles. Parts of these woods had all the oaks killed by the gypsy moth, though new ones were coming up underneath. Quite a number of chestnut sprouts seen, high as the roof of a house. Reached the Appalachian Trail and turned south. Mostly walking through second growth woods, but reasonably nice. Reached Crescent Rocks, though this is named Raven Rocks on the topo. Lunched there. Met two young through hikers, then two older ones at the lookout, where some 7th graders were practicing rock climbing. One of the older hikers borrowed my binoculars to look at something, and made it out to be a bear across the ravine, but I never saw it. Returned, exploring some side trails, one blue blazed to a spring marked Sand Spring. Returned to origin, then walked north a ways, then back to Retreat Center, for session that evening.

Ovenbird, one seen flying, and then a really nice one coming back; he/she walked around for me two or three minutes in plain sight within ten feet, best view I have ever had of one. Turkey; she walked out on the open trail, saw me warily, then walked, then ran down the trail a considerable distance, perhaps half a minute of observing her before she flew. Towhee. Two deer on the upper trail, the one seen best a rather large doe. Chipmunk. Vireo, but what kind? Pileated woodpecker. Pewee. Black vulture. Hairy woodpecker. Indigo bunting. Cardinal. Cuckoo, heard not seen.

Chestnut oak. Azalea mostly past bloom but some good. Laurel in bloom, witch hazel, blackberries, lots of Jack-in-the-pulpit in various sizes, false Solomon's seal, Mayapple, lots of it. Conopholis, Cancer-root, parasitic. Geranium. Jewelweed. Arenaria. Dioscorea, yam. Grape. Lepidium, white mustard? Baneberry. Virginia creeper. Sassafras. Vaccinium (huckleberry, both low and high bush). Leucobryum. Bracken. Dogwood. Sarsaparilla, Aralia. Cinnamon fern. Beech. Greenbriar. Big-toothed aspen. Poplar. Honey locust. Anemone. Osmorhiza, Sweet Cicely. Stellaria media, Chickweed. Pin cherry. Uvularia, Bellwort. Ash. Dentaria, toothwort. No trilliums seen. A frequent tree in conspicuous bloom was Fringe-tree, Chionanthus virginicus, opposite leaved rather like dogwoods, but with four long strap shaped corollas, in Olive family. Nobody knew it and I had to key it back in Colorado.

May 21, Saturday night, church supper and I spoke at Shepherdstown, West Virginia, Presbyterian Church. Met wife of Howard Zahniser, who wrote the Wilderness Act, and saw it through 66 drafts before getting it through Congress. He has been long dead, died a few months before it was passed in 1964. Also his son, Ed Zahniser was there, and on the panel that commented on my talk (the video excerpts on environmental ethics); he is a writer for a government agency in environmental interpretation, and an advocate yet for more wilderness, especially inside the national parks.

May 23-24, Monday, Tuesday. Pawling, New York, at Holiday Hills YMCA Conference Center, with Consultation on Judaism and Ecology. Two morning birdwalks. Notable: calls of pine warbler and prairie warbler. Nice Baltimore oriole. Otherwise the usual birds. Lots of ticks through here and the guide had had Lyme' disease. Brief stroll about the grounds with Steven Shaw and David Ehrenfeld. You can tell that an area has been formerly been cleared, or date how long it has been cleared, if there is a "wolf tree," a spreading tree such as would not grow in a forest but only grows in the open. A bad pest is Japanese barberry, Berberis Thunbergii, since deer will not eat it, thorny, and it seems to kill other plants. The wetlands here are full of Phragmites, Giant Reed Grass, looks like but taller than a cattail from a distance, introduced from the Mediterranean.

June 3-5, 94. Backpacking in North Fork Big Thompson, camped at Halfway Campsite and hiked to Lost Lake, alone. Friday. Left home 8.00 a.m., drove to RMNP and got permit, then drove around to Dunraven Glade Trailhead. On trail about 10.30 a.m., nice day. Lunched about Deserted Village, and made the campsite about 2.30, pitched camp, but then went to sleep for two hours! In the evening I walked around to Sylvanmere campsite. Sign says 5.6 miles in. A little rain in the night, not much. Saturday, spent the day hiking on up to Lost Lake, something over four miles. Nice day, walking around snow here and there in the upper half of it, and, over a great snowfield yet perhaps 300 yards across just prior to the lake itself. Returned at leisure. Sunday, nice day. Hiked out, lunched at the river below Cheeley camp, reached car about 2.30. People were no problem Friday and Saturday, but Sunday there were too many horses coming out, and about ten horse trailers and 35 cars in the parking lot. I did this trail first in 1970, then with Giles for his backpacking merit badge in 1987. Twenty miles of hiking, so I can still do it in my 62nd year. Asolo boots did fine, but leave the heel cups out of them. Second toe on right foot tended to get sore.

Seen and listed if in flower only: Canada violet, Mertensia, Hydrophyllum, Shepherd's purse, Capsella, Boulder raspberry, Smilacina stellata, Strawberry, Arabis, Caradmine, Arenaria, Geranium, Potentilla, Saxifrage, Arnica, Marsh marigold, Caltha, Trollius, subalpine buttercup, Alpine Primrose, Primula, Alpine Candytuft, Thlaspi, Calypso orchid (groups of 12, 8, 100, 30 and various singles and pairs; this seems to be a good trail for this orchid), Coralroot orchid, one place must have had 200 flowering stems rising up, not yet really open. Thermopsis, Elder, Sambucus, Harbouria, Clematis, Androsace, Blue violet, Pipsissewa, Chimaphila, Blue-eyed Mary, Collinsia, Polemonium, Sky pilot, Snowball saxifrage, Alpine phlox, Phlox, Rydbergia, Hymenoxys, Erysimum, Wallflower, Alpine sandwort, Arenaria obtusiloba (Minuartia), Snow buttercup, Ranunculus adoneus.

A glimpse of a band-tailed pigeon, not all that far from where I saw the one in 1987. I saw it behind a tree trunk, but could see the tail, and the head sticking out the other side. Several reasonably good looks at a ruby-crowned kinglet, though always fleeting. They seemed to be moving around at all elevations and not to have settled into their territories yet.

There is good Hylocomnium splendens on the banks opposite the Cheeley camp part of the trail.

One Western Toad, Bufo boreas, in the subalpine, with yellow line down back. Not very active but moving around some. Several elk in the park; two deer roadside.

June 7, 1994. Trail Ridge Road, after speaking at Rocky Mountain Interagency Interpretive Training Workshop, Estes Park, YMCA. With Ian Voges from South Africa. Drove up Trail Ridge Road on lovely day, with the scenery at its best. Several elk visible through scope about timberline over Forest Canyon. Two coyotes at the Rock Cut; one was lying down and never got up, though it moved its head around, as though it might be injured, perhaps hit by a car? This was maybe 75 feet off the road. The second was apparently its mate and lingering nearby, active. It came quite close to the road, perhaps having been fed? I was ten feet from it. This is the closest I have ever been to a wild coyote.

June 10, Friday. Loch Vale, with Ian Voges.

June 17-July 8, 94. Finland trip.

June 17, Friday, flew to Helsinki, via London, arriving, Saturday, June 18. Night at Hesperia Hotel. June 19, flew to Joensuu, and bus to Koli, a national park with a hotel conference site overlooking Lake Pielinen (Pee uh lin en), a large lake.

Finland is one of the most northerly countries in the world and one of the largest countries in Europe, about one third of it lying north of the arctic circle, and with the population mostly in the southern one third. The southern parts are less cold than geography might indicate, due to North Atlantic currents and the Baltic Sea. The landscape is largely glaciated; Finland was under ice 9,000 years ago. It is now typically rather flat, full of glacial lakes, with frequent esker ridges and moraines. The Finnish natural landscape is often said to consist of three elements: forest, mire, and water. Forests cover nearly 70% of the country and over 10% of the landscape is water, 188,000 lakes. Finnish forests cover more area than the entire United Kingdom. Extensive mires in the north (30% of the landscape) can look the same, but some thirty types are taught to Finnish forestry students, and the official mire classification scheme contains a hundred site types. The Finnish name for their own nation, Suomi, has the root "suo," mire. The hills are commonly called fells, in the northern parts typically treeless on the summits with some forests in the lower areas.

Only 8% of the land is cultivated, largely barley and oats. Above the arctic circle, the sun does not set in the north for some seventy summer days, nor does it rise in the winter; in other parts of Finland the sun rises about 9.00 a.m. or so and sets about 3.00 p.m. in winter; in summer days the sun sets but it hardly gets darker than twilight. About 40% of all people living north of the arctic circle are Finns.

Finnish forests are pine, spruce, and birch in the north, forming taiga, with aspen and alder in the central parts and the south. The Forest industry is a mainstay in the economy, with timber and forest products accounting for about 38% of Finland's exports. One controversial area is the draining of peat mires to plant pines, the favored timber tree, which grows poorly in soils that are too wet. Some claim this is a success, others are not so sure. There is debate about the extent to which middle-aged forests versus old-growth forests function as a CO₂ sink for the rest of Europe, also debate about how far peatlands serve as restrainers or promoters of the greenhouse effect. Peatlands produce methane, at the same time that they fix much carbon. Peatlands are said to contain 13% of the world's decomposable carbon. Peat is also burned for energy, filling about 5% of the Finnish energy demand. (Story in Universitas Helsingiensis, University of Helsinki Quarterly, 2/1993)

Pentti Takala, Director-General of the National Board of Forestry and a board member of World Wide Fund for Nature, reports that the annual growth increment in Finnish forests is 80 million cubic meters, but only 50 million of that is used. Consumption of wood is declining and every year, in significant amount because of recycling elsewhere in Europe, especially in Germany. Europeans believe that Finnish forests are being destroyed and may be reluctant to buy Finnish wood products. By this account, Finland's forests produce some 30 million cubic meters of wood more than its industry can process. But environmentalists contest this as too timber-oriented an account of values in Finnish forests and see Takala as a champion of a now-outdated intensive forestry management. Intensive forestry, monocultural wood production, is said by many to be the main reason for the loss of biodiversity in Finnish forests. Finnish forests supply about 70% of what the domestic forestry uses, though Finnish forest industries also import logs from Russia, because they are cheaper.

Forestry in Finland is surprisingly private and small scale, an average holding being 80 acres, by

perhaps 300,000 landowners. There is, and has been for a century and a half, a strong replanting program and legislation. One sees forests in all stages of growth as a mosaic on the landscape. Most state-owned forest land is in the north, where timber grows very slowly. Private forestry is often uninterested in this relatively nonproductive forest land. Private forests are increasingly held by inheritance by Finns who now live in cities, and inheritance laws tend to fragment the holdings further. Some maintain that this leads to poorer management of forests; others that Finns are more interested in non-timber values in their forests.

The timber cycle is about 80 years.

Increasingly Finland has become industrialized in this century and now most Finns live in cities. There are lumber related industries, metal and engineering industries, electrical plants, shipping and shipbuilding, textiles, and furniture. Most of these Finns are some one generation away from the land, though most of them still own, through their families, some rural land.

Some leading environmental issues are forestry, including old growth forests, the preservation of rural, cultural landscapes, including meadows, as people abandon farming to move to the cities. Nature has been characteristically a dominant component of Finnish life and Finns are concerned about preserving what they call their representative national landscapes. One issue is the destruction of eskers, the sand and rock materials of which are required for fill for roads and urban building. Pollution is a major issue, both by air, including acid rain from domestic and foreign sources, the latter including Russia, Poland, Germany, Estonia, and others. There is water pollution from forest industries, and from fertilizers used in agriculture, which into both freshwater lakes and marine archipelagoes, where they flush out slowly. Some express concern about new roads and harbor developments, with an anxiety about Finland's becoming a transportation route into Russia.

Moose hunting is a popular sport in Finland. This is the moose (*Alces alces*) in the American sense, which is called an elk in most of Europe. The summer population is about 125,000, reduced to 80,000 in the fall hunt. Some claim that proper forest management is both good for timber and for moose, who may favor reforested lands, including drained peatlands. Moose favor wetlands when these are available, but they are frozen much of the year, when moose feed on saplings. This can result in much damage to new forests. Few seem opposed to this kind of hunting, since it is also seen as animal population control and necessary to maintain the forests. (Story in Universitas Helsingiensis, University of Helsinki Quarterly, 2/1994)

Finland has about thirty national parks, and some twenty nature reserves, located in representative parts of the nation, though the larger parks tend to be further north and the acquisition of parkland has been reduced because it often has to be acquired by purchase from private interests. There are forests, eskers, peat mires, marshes, taiga, fells. About 5% of Finland can be classed as wilderness in something like the U.S. sense, though this includes areas used for reindeer herding (as against perhaps 2% wilderness in the continental United States, though there is de facto wilderness beyond that). About 7% of the Nordic countries is wilderness, which represents virtually all the wilderness in Europe.

There is a traditional right of everyman's access, which means, in effect, that any person has the right to walk across private land anywhere in the nation, also to camp for a night or two, though not build fires, and also to pick wild berries and mushrooms. Certain restrictions prohibit approaches to buildings. This means that there are, in effect, no "No trespassing" signs in Finland prohibiting access to natural lands privately held. This is also true in other Scandinavian countries.

Reindeer are herded largely by Sami (=Lapp) people in much of northern Finland, as they have been for many centuries. These reindeer live in a semi-wild status, sometimes attended only twice a year, once when calves are earmarked for identification and once when rounded up for slaughter, though in some winter situations owners may feed reindeer a supplemental diet. There are about 7,600 reindeer owners. Reindeer roundups gather some 230,000 reindeer, with about 130,000 to 150,000 slaughtered annually, about 70% of these are the season's calves. Highway accidents and trains kill about 4,00-5,000 each year.

The landscape is glaciated with lakes and eskers, and in the Koli area there is an especially high one that gives a grand view over the lake. An esker is water-borne deposit from the outwash of a glacier, formed in a tunnel under the glacier. This is different from a moraine which is ice deposit, not water deposit. They occur in long, tortuous ridges, esker chains, with the general direction of the ancient drainage. They are serpentine ridges of gravel and sand; they can even go uphill and downhill over the country rock somewhat, since they were formed in tunnels under the ice. Typically 100-150 feet high, but can extend many miles in length. On the eskers are various forests, but especially pines, here only Norwegian pine, Pinus sylvestris.

The surrounding country is lakes and mires, and pine grows poorly in the mires. They are often somewhat open. Kettles may leave round ponds without external drainage, called "dead-eyes." Often people like to live on top of the eskers, there is less frost, fewer insects, no bogs. The mires are peat (aapa mires).

Besides pines, the forests are spruce (Picea abies) (only thought to have reached Finland somewhat recently, 3,000 years ago), and various birches. Pubescent birch (Betula pubescens), typically with several main trunks and twisted branches. B. verrucosa = pendula. Also aspen (Populus tremula).

Also, alder (Alnus incana or glutinosa). Lots of Rowan tree, Sorbus, Sorbus aucuparia. Some juniper (Juniperus communis). Lots of willow, Salix.

Wildflowers:

Lily of the Valley, Convallaria majalis. Common in the woods. This is widely planted in U.S., but not native with us. The native species is C. montana.

Vaccinium myrtillis, bilberry, with a blue berry. Not in U.S. and Canada, though a very similar one is.

Vaccinium vitis-idaea (grape of Mt. Ida), with a red berry. Same species is in U.S. I found it on Mt. Katahdin.

Heather, Calluna vulgaris

Wood sorrel, Oxalis acetosella, a white one. Seems to be close to O. montana in U.S. northern states.

Wild Geranium, Storksbill. Erodium cicutarium, lots of it. Naturalized from Europe in the U.S., and all over the place.

Cow parsley, Anthriscus silvestris (like Queen Anne's Lace), a big white umbellifer, perhaps the most conspicuous flower on the rural landscape. All over the place. Naturalized from Europe,

apparently, in parts of eastern Canada.

Woodland Star, Finnish: metsatahti, Trientalis europea, lovely white with some seven (five to nine) petals. Especially notable in the woods. A related one, Trientalis borealis, Star-flower, I found at Moosehead Lake, Maine.

Androsace, Androsace septentrionalis. Same as in U.S.

Also Mountain Heath, Phyllodoce caerulea (sky-blue, a misnomer), low woody shrub with pink flowers. Same species is found in northern U.S. and Canada.

Labrador tea, Ledum palustre. Evergreen bush with rust-colored down on stems, and under the oblong, leathery dark green leaves. Creamy white flowers. The U.S. species is L. groenlandicum, which I found in Maine and in Nova Scotia.

Dwarf cornel, Cornus suecica (Swedish), a dogwood reminiscent of bunchberry, C. canadensis in U.S. Also found in northern Canada.

Cotton grass, Eriophorum vaginatum, white tufts of cotton in the mires. Sedge family. The closest U.S. one seems to be E. spissum, northern U.S. and Canada.

Cladonia, reindeer lichen

Birds:

Chaffinch (Fringilla coelebs)

Willow warbler (Phylloscopus trochilus)

Robin (Erithacus robecula). Very different from the U. S. robin.

Wood warbler (Phylloscopus sibilatrix)

Wren (Troglodytes troglodytes)

Redwing (Turdus iliacus), a thrush (do not confuse with the redwing blackbird)

Fieldfare (Turdus pilaris)

Great tit (Parus major), really a chickadee, same genus

Coal tit (Parus ater)

The Russian flying squirrel (Pteromys volans), threatened species. The Saimaa seal, a relic of the ice-age, is a trapped inland seas that adapted to fresh water when the ice retreated. Now an endangered species. Other endangered species include bears, wolverines, wolves, golden eagles, otters. There are 1,692 endangered species on an endangered species list in Finland.

One animal used on fur farms, the raccoon dog (Nyctereutes procyonoides), a small member of the dog family, and originally from the Far East, has escaped into the wild. The Russians released some, and they have spread rapidly into Finland and central Europe, over 40,000 animals in Finland. Its environmental impacts are not yet clear. (Story in Universitas Helsingiensis, University of Helsinki Quarterly, 2/1993)

The pests are mosquitoes, gnats, blackflies, midges. All we saw were mosquitoes.

June 20, Monday. Conference in morning. Afternoon, hike in the National Park, and then the slash-and-burn demonstration. They burn areas to re-establish meadows that they want, for some

species that grow here and not in the forest.

June 21, Tuesday. Conference

June 22, Wednesday. All-day bus excursion, led by Heikki Kirkinen, former rector of the University of Joensuu and a historian of the Karelian culture, by Osmo Kontturi, natural scientist, and by Heikki Vesajoki, a geographer.

We generally drove southeast to Eno, along the shore more or less of Lake Pielinen, then on to Ilomantsi, lunched there, and turned back north, to a viewpoint over Lake Koitere, then up the east side of the lake through Uiniharju and up to Lieksa. Then a ferry across the lake back to Koli.

June 23, Thursday. My presentation at the conference, "Does the Aesthetic Appreciation of Nature Need to Be Science-Based?" Closing panel in the afternoon. Sauna trip to Kelva Island. Took a boat out and enjoyed a real Finnish sauna in a picturesque setting on an island.

June 24, Friday. Monastery trip to Valamo Monastery. Night at Hotel Kimmel in Joensuu. Evening with Osmo Kontturi at his cabin, near his home, and then at his home in Joensuu. Cooked sausages over wood fire.

June 25, Saturday - June 28. St. Petersburg trip. Train ride from Joensuu south, sweeping along the edge of the Lake Saimaa district, a major lake complex where most of the landscape is water. Changed trains at Kouvala, and took the Russian train across the border, through Vyborg and into St. Petersburg.

June 29, Wednesday. Lecture at University of Helsinki, Dept. of Philosophy
Tuesday night and Wednesday night at University Guest House.

North Cape trip

June 30, 1994. Thursday. Flew to Rovaniemi, went to Arctic Center there, then drove to the Santa Claus village on the Arctic circle, lunched there with the Lapp "baptism" ceremony.

Drove north, stopped at the home and gallery of the painter Reider Sarestoniemi. Night at Kittila, or, more accurately, at a ski resort hotel at Sirkka.

July 1, Friday. Drove north to Muonio, where the river forms the border with Sweden. Raft trip on rapids. Lunch at the end of the rapids trips. Drove north, crossed Norwegian border, reached Kautekeino, and Lapp jewelry center there. Drove north and night at Alta, on the fjords and the North Sea.

Hills here are called fells, often without trees on the tops and with some forest in the valleys below, maybe scrubby birch on the hillsides.

July 2, Saturday. Went to rock carvings, 5,000 years old, but recently discovered. They were covered with earth before. Drove north. Lunch at restaurant in the high, treeless country. Caught



**North Cape, Norway
Midnight, July 2, 1994**

ferry to the island of Mageroy, reached Honningsvåg, and went on to hotel at Kamoyvaer, a village on the sea. That night we went up to the North Cape, a cliff 1,000 feet over the sea. Too many people in the visitor center there, but it was interesting to be at the very northern tip of Europe and to see the midnight sun, which came out just about midnight from under clouds as it reached the lowest point in the arc.

July 3, Sunday. Early departure to catch ferry, and then drove south. Lapp Museum in Inari. Reindeer farm near Solojarvi, returned to Inari, drove South. Night at Saariselka, a ski resort.

July 4, Monday. Drove south, gold panning at Tankavaara. Drove south, lunched up a side road at Luosto. Then to Rovaniemi, saw a church there, and to airport. Flight to Helsinki, 8.00 p.m.

July 5, Tuesday. Day in Helsinki, and left in evening on boat to Stockholm. Overnight on the boat. July 6, Wednesday, day in Stockholm, night on boat on way back. July 7, lunch with Eero Paloheimo, member of Finnish Parliament and member of the Green Party there.

July 8, Friday. Flew home.

Bob Marshall Wilderness Trip

July 18-27, 1994.

July 18, 1994. Monday. Left Ft. Collins and drove hard all day, up I-25, Casper, joining I-90, to Sheridan, then Billings, Bozeman, Butte, and Missoula. 856 miles! too much for a day's drive. Antelope off and on all day long. Stayed at Holiday Inn, where I had spoken for the Watchable Wildlife Conference a couple years back.

The Bob Marshall Wilderness is the largest wilderness complex in the continental U.S. Great Bear and Scapegoat Wildernesses are also part of the complex, about 2 million acres, or, if Glacier National Park is included, 3 million acres. There is a move to add another million acres and then put the whole complex under the Bob Marshall name.

Bob Marshall began his career with the U.S. Forest Service in the 1920's, gained notoriety for long solo trips into the backcountry, 35 miles was typical, and he sometimes covered 70 miles on foot in a day. He died in 1939, this area was set aside in 1941. George Marshall, brother of Bob Marshall, is still alive, and Smoke Elser knows him. Great Bear and Scapegoat Wildernesses were added in the 1970's.

July 19, Tuesday. Met Smoke Elser, and followed him to his place, where I left the car. (Smoke and Thelma, Wilderness Outfitters, 3800 Rattlesnake Drive, Missoula, MT 59802; 406/549-2820) Rode in his pickup to trailhead. Osprey nest on top of telephone pole roadside. Drove by the ranch formerly owned by the Lindbergs.

Horse is named Stoney, a big white horse, almost a foot taller than other horses. Make sure the stirrups are long enough to avoid knee problems. There are two kinds of pack saddles, for the mules. These have a Decker saddle, carry 100 pounds on each side, 200 pounds total. Tie ons are to D-rings. Sawbuck is the name of another saddle, which has been around for centuries, has wooden crossbucks. The Decker saddle grew up in the American West after 1900, manufactured by Decker Brothers. A horse can really carry as much weight as a mule, too many of the riders weigh over 200 pounds.

The wranglers are Earl and Ray. Earl is an arm-wrestling champion.

monte - the tarp they tied around the gear (also used as a groundcloth for the tents).

My tent mate is Wayne Ward, 2203 Humble Rd., Missoula, MT 59801, formerly ran a series of sporting goods and jewelry stores.

Other party members:

George E. Bishop, 1826 E. Northside Dr., Jackson, MS 39211 (601/982-7181), retired from Allstate personnel, and formerly in Air Force.

Arch Andrews, Box 550, Archer City, TX 76351 (817/574-4154), rancher in Texas, and a veterinarian.

Nancy Birnbaum, 521 Redwood, Missoula, MT 59803 (406/728-5656), runs picture frame shop. She helped with the cooking and horses, husband runs youth halfway houses in Missoula.

Roger and Huntley Holland-Olson, 20605 Spotted Fawn Road, Huson, MT 59846 (406/626-2456). They have recently moved to Missoula from Seattle; he ran there a moving service, specializing in antiques; she is a lawyer.

Elizabeth Johnston, 160 N. Oller Ave., Waynesboro, PA 17268 (717/762-6966), from Pennsylvania, schoolteacher, retired, white-haired. She has a daughter who is a forester, though currently has a young child.

Kathy Seiler, P. O. Box 306, Blue Ridge Summit, PA 17214 (717/794-5628), younger teacher, travelling with Elizabeth Johnston.

Carolyn Hanson, 42 Morningside Dr., Chagrin Falls, OH 44022 (216/338-5584), had had hip surgery, moving to Missoula area.

Mae Nan Ellingson, 10055 Grant Creek Rd, Missoula, MT 59802 (406/721-6035; 406/549-1270), formerly city attorney for Missoula, now doing tax-exempt bonds.

Peggy Sheldon, 76 Brookside, Missoula, MT 59802 (406/549-2860), older woman, with white hair, owns E-Bar Ranch, 12,000 acres, in this area, lives in Missoula.

We left from an outfitters camp near Holland Lake, about 10.30 a.m. Steady climb and lunched at upper Holland Lake. More climb and over Pendant Pass (where you actually enter the Bob Marshall Wilderness), then dropped down. This is the Swan Range. Camped the first night below Pendant Lakes; there are several of them, more like ponds. The ride today is about 12 miles. Elser has a nice camp set up, with a big kitchen tarp and four folding tables, something like card tables, and folding chairs. Great food, surprising amounts of fresh lettuce and salads, as well as fresh meat. The sleeping tents put up easily with a single pole, floor space is 10' x 10', which gives plenty of space.

July 20. Wednesday. We rode down Pendant Creek, joining Big Salmon Creek. Passed Albino Creek, drains Albino Basin, this was named for a light colored grizzly bear in here. There was a fire in part of these woods in 1950. Camped in vicinity of Barrier Falls in a slide area. Ride today about 12 miles.

July 21, Thursday. We rode on down Big Salmon Creek. Stopped for rest at Big Salmon Falls. Biggest larch (tamarack) trees I ever saw in here. Also some fine spruce. Continued descent and reached upper end of Big Salmon Lake, then rode by the lake, about 5 miles long, one mile wide.

Loons, pied-billed grebe, mergansers at upper end. Willow flycatcher. Two beaver seen swimming in the lake. Lunched at the lower end of the lake. There are no salmon in the lake any more, not since the Hungry Horse Dam was built downstream. There are some old phone lines here; once there was an emergency and fire phone. Rode by Charlotte Peak, as it is named on the topos, but the Indians called it Charlo. The legend is that Indians hid their headdresses in a cave on this mountain, and Smoke tried to find it once. Rode on down to the South Fork (of the Flathead River), the main drainage of the Bob Marshalls, then down the South Fork, through majestic ponderosa pine savannah flats. Rode by Murphy Flat. Joe Murphy was an early outfitter in here. There is a ranger station with a considerable fenced area for their stock. There were some rafts on the river; there is raft traffic through here.

We then crossed the South Fork and rode a mile or less up the White River, camped at White River Flats. A splendid moonrise. Scarface Peak is to the west on the skyline. Ride today about 13 miles.

July 22, Friday. Day spent in camp. Mae Nan, Nancy, and I hiked up the White River trail, lunched at the crossing not far below where the South Fork of the White River leaves. Haystack Mountain trail leaves a ways up the South Fork here. We followed bobcat tracks quite a way, no sign of any claw marks. Nice Swainson's thrush. Later in the evening we forded the White River and went down to a ponderosa pine savanna flat called White River Park, splendid trees. One deer seen, several Stellar's jays. A raptor scream, like a kestrel. But there are not many raptors seen in here, compared to the plains. From this campsite, Smoke once saw a grizzly sow and two cubs walking up the river. A problem grizzly was flown in here from elsewhere and released, but it remained a problem, troubled some campers, and had to be shot. On other occasions such problem grizzlies have reverted to the wild with no problems. Andrea Christie, Murder on the Trails, is a novel that takes place in the Bob Marshalls, and mentions Smoke Elser.

Outfitters occasionally lose mules in here; they roam around until some other outfitter finds it, ties it up to his string and brings it out.

Horses can't cross the really swollen streams. A fellow named Scott was swept downstream a great distance; made it out the opposite shore, and into a forest camp with some supplies. He had

to stay there nearly a month before anyone could get to him. But there are few bridges in here, except over the rivers that get too swollen for even horses to cross. Backpackers must wade!

Smoke got his name as a firefighter at Ohio State. Once there was a fire in which poison ivy was burning; he got it badly.

There is a lot of long black, hair-like lichen on many trees, common on evergreens, especially the lodgepoles and ponderosa. The local name is "bear-hair."

The horses loved the elk-thistle and would spot it at the sides of the trail and go for it, even if they weren't trying to eat much else.

Smoke says the forest service blaze is registered in the Library of Congress, where it is explained as a heel and toe, though in New Mexico's Gila wilderness they gave the rear end of a mare mule explanation of it!

July 23, Saturday. Two mule deer in camp in the morning. Deer in this far really are not hunted much; it is too far in to come for deer.

We rode up the White River, first due east, then turning to follow the main stem north. Lunched overlooking Needle Falls, but there was not much water flowing. Rode by Rampart and Turtlehead Mountains. Camped at Brushy Park. This is often said to be the most remote part of the Bob Marshalls. There were good wolf tracks in the mud near the stream here, also a good black bear track, within a few yards of it. Bear tracks have five toes and look somewhat human-like. But the smallest toe is on the inside of the foot, not on the outside as in humans. (Toes on the black bear form an arc. Grizzly tracks are larger and the toes form a relatively straight line, also more crowded together than black bear. But they cannot always be separated.) The ride today 13 miles.

Smoke worked with the Craigheads, and once went down into a den with Craighead. The bear waked and they had to come out, quickly. This was in the early 1960's when he was in college.

Bears line their dens with beargrass.

A benchmark tree is a surveyor's tree with the location carved into the tree. These were surrounded by four other trees cut with an X in them, facing in each outward direction. Several of these seen.

July 24, Sunday. Heard coyotes in the morning; some said they could be wolf pups, but I doubt it.

The horseflies were objectionable on part of the morning ride.

We climbed and rode over Larch Hill Pass, 7891 feet, lunched at the crest of the pass. We are now on the Continental Divide. We leave the Flathead National Forest here. The east side is the Lewis and Clark National Forest. The trail here is the Continental Divide Trail (CDT), but you really don't see any sign of it being marked so.

All this side is the Sun River Game Preserve, and hasn't been hunted since early in this century.

The rest of the day was a marvelous ride under the Chinese Wall. The Chinese wall is an overthrust, the Lewis overthrust. It is, always surprisingly for someone raised in the East, limestone. It is a thousand foot high cliff, and runs unbroken from Larch Hill Pass 12 miles south to Haystack Mountain. It is the most popular destination in the Bob Marshalls and the most dramatic manifestation of the Continental Divide from Mexico to the Arctic Ocean. We rode over three drainages, that flank the east side: Rock Creek, Moose Creek, where Smoke intended to camp, but the water was too poor, then Burnt Creek, where we camped at the head of it, right under the wall. To the east is Prairie Reef Mountain, prominently visible. We rode by Salt Mountain, Cliff Mountain. Saw a mother goat and a kid high in the cliffs. More wolf tracks. Raccoon tracks at the edge of a lake. One golden eagle over the Chinese wall.

There was rain in the afternoon, and some clearing, quite pretty in the clearing. Once there was a little hail. There is spectacular beargrass in here; it makes a dramatic foreground to the Chinese wall in the background. Conies calling from the rocks below the wall. Then more rain as we set up camp, but no real problem. Great spaghetti supper in on-and-off rain. Dramatic camp site, right under the wall, and open enough for grand visibility. Rather tame deer in camp.

There are about six or eight outfitters licensed to operate in the Bob Marshalls. No new ones can get permission, unless they get permits previously owned by earlier permittees. Jack Rich is a good outfitter, Double Arrow Outfitters, out of Seely Lake. Elizabeth went with him and Smoke recommends him.

Hooker, another outfitter

Copenhagen. These are old-time outfitters, though less environmentally sound, says Elizabeth's daughter.

Smoke is often an expert witness in horse accident trials.

Camping sites are first-come, first-served.

Smoke says Grizzly Basin Park is just as spectacular as this, also Wall Creek, also Young's Creek are spectacular areas. Smoke does one trip that goes into Grizzly Basin (not far west of Benchmark), then into Pearl Basin, also by Hole-in-the-Wall, and Young's Gulch.

July 25, Monday. We rode down Burnt Creek. The drainage here becomes the West Fork of the Sun. Passed Indian Point Ranger Station. Passed four or five different pack strings on the way down, Smoke says this is more than he usually sees. Camped at Reef Creek (a tributary), after finding others, backpackers and another horse group, in areas Smoke had hoped to camp in. In the evening, I saw a coyote at the river's edge, also a cow elk. Also a mouse running over the bottom of Carolyn's tent!

The largest pack string has the right of way, generally.

Bears have turned over the rocks in here, looking for grubs. They also tear up rotten logs.

Owl calling in the night. Ride today 11-12 miles.



Tuesday, July 26. We rode out to Benchmark. On down the West Fork of the South Fork of the Sun, to where it joins the South Fork (of the Sun). But the South Fork flows north (soon joining the North Fork and leaving the wilderness and forming Gibson Reservoir. We rode up the South Fork of the Sun, to Benchmark. There was more parklike and sagebrush country coming out. Some very nice vistas looking backward toward the mountains we were leaving. The trail was often objectionably dusty. Again, there were many riders coming in; Smoke says he has never seen this many. The trail here got so torn up by horses that a mile or so of it is built up with logs and gravel. The outfitters got together and carried 30 tons of gravel rock on mules from a creek nearby. Benchmark is the most heavily used entrance to the Bob Marshalls, as it is the nearest access to the Chinese Wall.

There is constant sign of fire, with woods in many different conditions of fuel load, from light to heavy. Often also burned areas. A few lodgepole pine areas had very heavy fuel load.

The fish in the Bob are Whitefish and Cut-throat. We ate some a couple evenings, as appetizers to the main meal.

Olive-sided flycatcher.

Barn swallow.

Ravens in the corral, but not a lot of ravens seen on the trip, another 6-8 on the ride back.

Reached Benchmark about 2.30 p.m. Ride today 8-9 miles.

Total ride, about 100 miles.

Rich Blaney leads trips for Smoke.

On van ride back to Missoula:

There is an airstrip here, a long one. Lady Bird Johnson flew in here once to celebrate some wilderness or something, stayed a few minutes, and flew out.

Rode by Benchmark Wilderness Ranch, by Wood Lake, by John Cobb Ranch; he is conservative state legislator. On the lakes: coots, grebes. Bison on one of the ranches. Great blue heron. One deer. Several white pelicans.

A few antelope on the ride out.

While we were in the wilderness, lightning set 40 fires in the Flathead area over the July 23-24 weekend, only to burn a few acres each, before being put out, or going out on their own.

Reached Augusta, and Route 287, junction with 200, to Lincoln, where we got ice-cream, continued, passed the Seely Lake Road, at Clearwater Junction (where we went in), by the Lubrecht Experimental Forest, of the University of Montana, and on to Missoula, typically on the Blackfoot River. Over Roger's Pass, the Continental Divide. Record cold has been observed here.

Night in the Holiday Inn.

July 27, Wednesday. Drive home. In the early dawn, I had to swerve to avoid hitting two large bull elk on the Interstate. Drove through Idaho. Butte, Idaho Falls, Pocatello. Three dozen pelicans on Clark Canyon Dam. One group of a dozen antelope. Two sandhill cranes. Grand Tetons in the distance to the East. Past Hell's Half Acre, a lava flow. Then I cut cross to Kemmerer (where I had to install a fuel pump), joined I-80 at Green River, and on home. One golden eagle in Wyoming. 883 miles, way too far. This is 27 miles further than the trip up.

Notes:

Take wading shoes. The rocks are too hard on your feet when you try to bathe, or ford.

Take a pillow cover, as well as a pillow slip for the big air-pillow; it makes it a bit more cottony.

Alaska Magnum Pepper Gas. Contains Oleoresin Capsicum (the latter the active ingredient). BodyGuard Industries, Phoenix, AZ. Another one is S. Cross Development, P. O. Box 7152, Bozeman, MT 59771.

Michael Bartley, in PL 345 class, fall 94 teaches backpacking in the Yellowstone area and says the pepper gas has been tested on bears in captivity and works. Also in the few cases where persons attacked in the wild have used it, the bear has backed away, and no one has been hurt.

Get a canteen bag to tie behind saddle bags, for raincoat, etc. Preferably zippered so nothing will fall out.

Fresh underwear, socks for every day might be a good idea.

Use throwaway gloves under riding gloves.

Hang the water high over the filter and it will filter by gravity; you don't need to pump it. Pump it to prime it.

The shaver lasted the whole trip, no problems. In the car it took six hours to recharge.

Flora seen:

Trees and shrubs:

Engelmann spruce, Picea engelmanni, sometimes impressive

Subalpine fir, Abies lasiocarpa

Lodgepole pine, Pinus contorta, the dominant tree by far especially at lower elevations

Ponderosa pine, Pinus ponderosa. Marvelous specimens in the river flats.

Whitebark pine, Pinus albicaulis. It's in here, especially on the Larch Hill Pass trail, but I never got that clear about it. 5 needles.

Douglas-fir, Pseudotsuga menziesii Lots of it, often splendid forests.

Rocky Mountain maple, Acer glabra. Occasional.

Yew, Taxus brevifolia. Some seen, though not a lot.

Cedar, Thuja, Western red cedar. Not a lot of it.

Dogwood, Cornus stolonifera. Some, not a lot.

Balsam poplar, Populus balsamifera

Aspen, Populus tremuloides. But this is not well developed here.

Cottonwoods, Populus spp., at Reef Creek campsite.

Rose, Rosa woodsii, typically here without thorns.

Alpine Spiraea, Spiraea splendens, common over practically the whole trip.

White Spiraea, Spiraea betulifolia

Shrubby cinquefoil, Pentaphylloides floribunda, Potentilla fruticosa

Buckbrush, Ceanothus (New Jersey tea)

Mountain Lover, Lover's wreath, Paxistima myrsinites = Pachistima myrsinites, also Pachystima. But Paxistima was the original spelling. Bittersweet family.

Bog birch, Betula glandulosa

Mountain heather, Phyllodoce empetriformis. Quite lovely in the campsite at the Chinese wall.

Sagebrush, especially on the last day's ride.

Mountain-ash, Sorbus, common

Snowberry, Symphoricarpos

Hawthorne, Crataegus

Serviceberry, Amelanchier. Not much.

Herbaceous plants:

Beargrass, Xerophyllum tenax, a lily. Quite characteristic of the landscape, and a striking difference between the Montana mountains and the Colorado ones, where it is largely absent. It blooms only every 6-7 years. Nothing eats it, but Smoke claims that bears do line their dens with it.

Elk thistle, Cirsium foliosum. The horses love it. Ranges from Arizona to the Yukon. But more common here. Good picture in Strickler.

Cow parsley, Heracleum sphondylium = formerly Heracleum lanatum

Purple Monkey Flower, Mimulus lewisii

Arrow-leaved Groundsel, Senecio triangularis. Common over the whole trip, with a notable arrow-shaped leaf.

False hellebore, Veratrum sp.

Parrot's Beak, Pedicularis racemosa

Elephantella, Pedicularis groenlandica

Golden columbine, Aquilegia flavescens. No blue ones up here, all of them are yellow.

Elderberry, Sambucus

Fireweed, Epilobium angustifolium

Northern willow-herb, Epilobium glaberrimum. the small one.

Twinberry honeysuckle, bush honeysuckle, Lonicera involucrata

Twinflower, Linnaea borealis, lots of it, off and on the whole trip, sometimes a nice ground cover.

Strawberry, Fragaria

Paintbrush, Castilleja

Bluebells, Campanula uniflora

Erigeron, several, including a blue one.

Aster, several

Onion, Allium sp. There are several here.

Allium schoenoprasum, a big one with hollow stems

Death Camus, Zigadenus, frequent

Thimbleberry, Rubus parviflora. Frequent, with big, maple-like leaves.

Menziesia, Menziesia

Blueberry, Bilberry, Vaccinium sp.

Saxifrage, Saxifraga lyallii

Queen's cup lily, Clintonia uniflora

Fairy Bell, Disporum trachycarpum

Gooseberry, Ribes, sp.

Stonecrop, Sedum sp.

Bog Orchid, Habenaria sp.

Coralroot Orchid, Corallorhiza

Pink pyrola, Pyrola asarifolia

Sweet Cicely, Osmorhiza sp.

Pipsissewa, Chimaphila umbellata

Buffaloberry, Shepherdia

Kinnikinnik, Arctostaphylos uva-ursi

Self-heal, Prunella vulgaris

False Solomon's seal, Smilacina

Arnicas. Regularly in forested shade.

Blue borage, not further identified.

Baneberry, Actaea rubra

One-sided Pyrola. Wood Nymph. Moneses uniflora = Pyrola uniflora

Gentian, Gentiana sp.

Yarrow, Achillea

Bedstraw, Galium

Pussy-toes, Antennaria

Mariposa lily, Sego lily, Calochortus. There are several species here.

Yellow sweet clover, Melilotus officinalis

Goldenrod, Solidago multiradia

Potentilla paradoxa

Beardtongue, Penstemon. There are several here.

Penstemon flavescens

Penstemon ellipticus, low penstemon, with big blossoms, light purple, in mountain rocks.

Goatsbeard, Tragopogon

Hawkweed, Hieracium spp. a yellow one
Hieracium aurantiacum. Orange, reddish-orange

Gaillardia, Gaillardia

Sticky geranium, Geranium viscosissimum

Vetch, Sweetpea, Lathyrus pauciflorus

Grass of Parnassus, Parnassia palustris, Saxifrage family. One without fringes. This was at the White River Flats campsite. Better to call it just Parnassia, since it is not a grass at all and this just confuses people.

Grass of Parnassus, Parnassia fimbriata. With fringes. This was seen near the wolf tracks, Brushy Park campsite.

Small-flowered crowfoot, Ranunculus macounii

Blue clematis, Clematis

Bunchberry, Cornus canadensis

Pinedrops, Pterospora

Shooting star, Dodecatheon pulchellum. Campsite at the Chinese wall.

False Asphodel, Toeplitzia glutonosa. Asphodel is in Europe, and better to call this Toeplitzia.

Veronica, a big blue one

Glacier lily, Erythronium grandiflorum, though not in bloom.

Catchfly, Silene noctiflora

Balsam root, Balsamorhiza

Horsetails, Equisetum

Meadow-rue, Thalictrum occidentale. Common.

end Bob Marshalls trip

August 5, 1994. Friday. Field Trip, American Fern Society. Preceding American Institute of

Biological Sciences, Knoxville. Led by Dr. A. Murray Evans, emeritus from the University of Tennessee, whose specialty is ferns. He knew Fred Behrend, also Frank Barclay and Herman O'Dell.

Drove to Carver's Gap. The picnic tables there are gone now.

Isoetes carolinianum. Quillwort. Shortly up the trail towards Round Bald, then off 75 yards toward the N.C. side, in a seep. You wouldn't know it wasn't a grass or sedge, if you weren't looking for it. There are micro and mega spores, virtually underground.

B. Eugene Wofford, Guide to the Vascular Plants of the Blue Ridge. University of Georgia Press, 1989.

Redford, Ahles, and Bell, Flora of the Carolinas, 1968.

Goodyear pubescens, Rattlesnake Plantain, the orchid with the white reticulate leaf.

Thelypteris novaboracensis, New York Fern, pinnae taper at the base of the frond.

The balds are said by some to go all the way back to the Pleistocene and to have been maintained by various grazing animals, many of them now extinct here, such as bison, caribou. Caribou were here when Columbus arrived. Fire is not much of a factor in these mountains above 5,000 feet; it is usually too wet to burn. The forests and balds seem to burn not more than once every hundred years or more. Lightning does strike the balds all the time, and often makes a crater.

Lycopodium has been broken up into Lycopodium, Huperzia, Diphasiastrum, and Lycopodiella. This is not in Wofford or Radford but came after they were published, in Flora of North America, vol. 2, Pteridophytes and Gymnosperms.

Athyrium asplenioides, Lady-fern. Or Southern Lady-fern. Northern Lady-Fern is Athyrium angustum. You can tell the extremes apart between Northern and Southern Lady-fern, but in many places in between you can't place a specimen in one or the other.

Polypodium appalachianum. The polypody here.

Athyrium thelypteroides, Silvery Glade Fern, or Silvery Spleenwort, though not a spleenwort.

Walked to Engine gap, and then went down into the woods, a quarter of a mile below the gap.

Dryopteris intermedia. Intermediate wood-fern. This is here and seen. Elsewhere (in northern Midwest, in California, in Japan), there is Dryopteris expansa. These two in the ancient past hybridized, a first accident, which would have been diploid and sterile. But by a second accident the hybrid doubles its chromosome and becomes tetraploid and is then not sterile, but can reproduce. So it is said to be a species of hybrid origin, Dryopteris campyloptera, which was one of the main objectives of the field trip to see. One parent is here; the other is not within a thousand miles or more.

Dryopteris campyloptera, Mountain Wood-fern. One form occurs in open areas and a different form occurs under shade. Both have large, long interior basal pinnae.

Huperzia lucidula (formerly Lycopodium lucidulum) seen here. Some say this is the most primitive

vascular plant. This grows in woods.

Huperzia appalachianum, seen later, down below, on the road. This grows in rock outcrops. It used to be combined with Lycopodium selago, but selago grows in the north in lowlands.

There is a sterile hybrid, Huperzia appalachiana x lucidula that is halfway down to the road, but weather was forbidding and bushwhacking down decided to be too rough.

Lycopodium obscurum var. isophyllum (or, some say, Lycopodium hickeyi, but Evans does not).

Diphasiastricum digitatum (was formerly Lycopodium complanatum var. flabelliforme) Running cedar. Seen here.

Lycopodium clavatum seen here, long and running.

Dryopteris marginalis. Seen here.

Vittaria appalachiana, not seen here. Only the gametophyte grows in the northern parts of the South, which reproduces by gemmae, a ribbon shaped gametophyte. In Florida, the sporophyte can also be found.

August 6, 1994. Saturday. Moss trip to Tellico River area, Cherokee National Forest. Left UT at 7.30 a.m., trip leader Kenneth D. McFarland, instructor at UT botany dept., and in charge of greenhouses there. Also on the trip Lewis Anderson, formerly of Duke and co-author of Mosses of Eastern North America, William Buck, Malcolm Sargeant, Jeff Duckett, U.K. in London, does work on ultrastructure of mosses, Harvey Miller of Florida and University of Miami, Ohio. Ray Stotler and Barbara Crandall-Stotler. David Smith, who is the current bryologist at UT.

We went to the general area of Bald River Falls, where I was in October 1993, after the Oak Ridge event. Site 1 on Laurel Creek, not all that far from Bald River Falls, marked on Cherokee National Forest map. Site 2, to Grassy Gap on route 165 and on beyond to Falls Branch Trail, and about a half mile in to a good falls, marked on map. Site 3, on over in North Carolina, Nantahala National Forest, along Santeetlah Creek.

Species seen: Anomodon attenuatus, Atrichum undulatum, lots of it underfoot, Bryoandersonia illecebra, Campylium chrysophyllum, Climacium americanum, Cryphaea glomerata, Eurhynchium riparioides, in the stream underwater, Fissiden cristatus, Fissidens osmundioides, Fontinalis sp., Forsstroemia trichomitria, Haplohymenium triste, Hookeria acutifolia, with quite large cells visible in lens, Hylocomnium brevirostre, Hypnum curvifolium, lots of it, Leucobryum glaucum, Leucodon brachypus, Mnium affine, af fin knee, Plagiothecium denticulatum, Pylaisella?, Schwetschkeopsis fabronia, Thelia hirtella, this one can be spotted by eye, it makes a pinnate line slanted longitudinally on tree trunks, rather eye-catching, Thuidium delicatum, lots of it, Thamnobryum allegiensis, Ulota hutchinsiae.

Good day, but often people pretty much scattered, there was no formal leader and you had to look over the shoulder of those who knew to find out what you were seeing.

The sought-after item of the day was Megaceros aenigmaticus, a hornwort, found at the first site. It looks to me just like a thalloid liverwort.

August 7, 1994, Sunday. Field trip to Big South Fork National River and Recreation Area. Left 8.00

a.m., in vans to Scott County, just below Kentucky, nearest post office Oneida, area was Scott State Forest. The river is the (Big) South Fork of the Cumberland River, but we were on a tributary North White Oak Creek, and, for the morning foray, on a small tributary of that, nameless.

Flakia? The thing. A thalloid stuff that nobody will claim, though many hold that it is some sort of lichen. Seen in several places. Article on this: Ove E. Eriksson (University of Umea, Sweden) "Psoroglaena cubensis and Flakea papillata gen. et sp. nov., two corticolous lichens with a pantropic distribution," in Systema Ascomycetum, vol 11, Part 1, (June 1992):11-27, a somewhat obscure European journal. Copy obtained from NY Botanical Garden and on hand.

Vittaria appalachiana. Only the fern gametophyte is known from the Southern appalachians, but the fern proper, the sporophyte, is known from further south, or at least other ferns in the same genus. There should be a treatment of this in Radford, Ahles, and Bell, Manual of the Vascular Flora of the Carolinas, 1968.

The main guide on both days was Paul Davison, teaches botany at University of North Alabama, Florence, a recent Ph.D. from U.T., born in King's Mountain, NC, went as undergraduate to Univ. of North Carolina, Chapel Hill.

Another guide was Allen Risk, currently a Ph.D. student at UT, quite knowledgeable in the woods, identified most of the mosses and liverworts on site with handlens.

There was a copperhead snake on rocks, in with poison oak, just below where we ate lunch. Seemed to be comfortable in the half-shade, half sun, and was just staying in place. Nice view of hourglass pattern. The guides day this is the copperhead capital of the world.

Lots of climbing fern, Lygodium palmatum, seen on the way in, with the fern people excited about it. Apparently they seldom see this elsewhere. What is apparently a twining stem with leaves is really a twining petiole and the "leaves" are leaflets. The whole climbing part of the fern plant is a leaf, and the stem is entirely underground.

Graduate student and his wife, Bill Norris, from Iowa State.

Met Bill Norris, long taught botany at Humboldt State in California, knows Susan Armstrong and knew Fred Hermann. He has retired and recently moved to Berkeley, where he joins Brent Mishler, on a volunteer basis. He moved his personal herbarium there.

Brent Mishler replaced Lewis Anderson at Duke, but has recently moved to Berkeley. The Duke position is open.

Also on these trips Malcolm Sargeant, Dept. of Plant Biology, University of Illinois, Urbana. He was on the field trip when AIBS met at Ft. Collins.

Also Barbara Thiers, liverwort expert at New York Botanical Gardens.

Also Raymond Crandall-Stotler and Barbara J. Crandall-Stotler, both at Southern Illinois University. She is president of ABLs, does liverworts, as does he.

Also Steven Jessup, has finished a Ph.D. at University of Michigan, attached to the herbarium, and is moving to Berkeley to work with Brent Mishler. I had breakfast with him at the dorm several times. He is interested in species concept and gave me a paper to read, "Geometry of the Fuzzy

Species Concept."

Returned on this day via the University of Tennessee arboretum at Oak Ridge for a 90th birthday celebration for A. J. Sharp, since about 1930 a famous bryologist the UT and with whom I once went on a field trip in the Smokies in the 1960's, also I sent him some mosses to identify. Sharp has just published, with others, his long-awaited Moss Flora of Mexico. Hugh Iltis was at this reception.

August 8, Monday, breakfast with American Bryological and Lichenological Society. William Culberson was there, also A. J. Sharp. Ate breakfast with Richard Andrus, Sphagnum expert, SUNY Binghamton.

August 8, Tuesday. Lunch with Andrus and Brent Mishler.

August 18, Thursday. Hike to Chasm Lake with group from Jack Weir's "Society for Philosophy in the Contemporary World" conference at Estes Park, YMCA. Those in the party: Peter Singer (Monash University, Australia), Erin McKenna (Pacific Lutheran University, knows Bob Stivers; I heard her critique of Singer preceding Tuesday night, Singer relies too much on reason, not enough on compassion). Peter and Erin carried backpacks and were going to stay at the Boulderfield, but went in to Chasm Lake with us. Eleonore Adams (Cuyahoga Community College, Ohio, older); Matthew Freytag (Sweet Briar College, VA; he is a one year replacement there), William Stephens (Creighton University, Omaha; I heard him give "Five Arguments for Vegetarianism" on Tuesday night. Roger Paden (George Mason University). Gail Presby (Marist College, Poughkeepsie, NY, younger, black haired)

Good hike in and back on a generally cloudy day, but no rain. Moderate traffic on the trail. Six or eight fat marmots pestered us at lunch at the lake. Several conies rather tame there, closest I ever remember getting to them.

September 11-13, 1994. Camper, with Jane, in Moraine Park. Went up Sunday afternoon, nice weather. Good campsite with view of Long's Peak. Elk bugling in the evening and one (great horned?) owl calling. Monday, drove up Trail Ridge Road, picnicked at the grounds past Milner Pass. Returned, and went out to hear elk bugle in the evening. Tuesday, packed up and came home to teach class that evening.

September 24-26, Saturday through Monday. Backpack alone to Mirror Lake. Nice weather yet, after a considerable cold front, killing frost, and some snow flakes in town on Wednesday. Some 3 inches or so fell in the high country, but it had melted in all the sunny areas, with 1-2 inches lying around in shade. Hiked in from Corral Park, leaving there about 10.00, not as rapidly as I expected. I got turned around and went down the Big South Trail about a mile, and had to backtrack. Arrived about 4.00 p.m., 6 miles in, plus about two by mistake. Sunset about 5.00 where I was and temperature fell rapidly but I was o.k. Walked up to the lake for twilight; nice buck in camp at my return, rather tame. Three deer earlier in the day on the road, one fawn of the season.

Sunday, hiked up Comanche Peak. Good trail from Koenig campsite and good cairns above timberline to about three-fourths of the way up, but then I lost them. Hiked to a broad crest in below the summit, overlooking Pingree Park below. Lovely day. Watched a hairy woodpecker drilling a hole in a dead tree furiously. Returned and got supper done before sunset. Long night, since you are in the sack from about 7.00 until 8.00 or 9.00 (sunrise down below in the cirque where I was camped). Monday, packed out uneventfully. Total hiking about 18 miles.

The trail not far in up Hagues Creek comes out to a big meadow, lovely area. There are two campsites in here, Desolation site and Flatiron site. Try these sometime for an easy hike. Corral Creek Ranger Station is open July 1-Labor Day.

Oct 15, 1994. Saturday. Drove to Pingree Park with Jane to perform wedding ceremony for Kent Clement and Jessica Potter. Rain and light snow on the way. Somewhat wintry, but rather pretty. Some leaf colors still good. One deer on return. Forest fire this summer started about a mile and a half away; they watched it a few hours and weren't too concerned about it. Then the wind shifted and within an hour it was at the Pingree campus and burned down all the new dorms before they could control it. Lots of burned areas visible in the last 2-3 miles of the road in. But the campus as a whole is remarkably unaffected.

Oct. 22-24. Austin, Texas and Society for Range Management. Flew down Saturday, rented car, and drove out to Pedernales Falls State Park (peder nal is, rhymes with Al). Drove into falls and walked around there, a cascades in the Pedernales River, over layered limestone, apparently subject to sudden flooding. Then hiked up Wolf Mountain Trail a ways; this leads some 7 miles, after two miles to a primitive campsite that lots of people seemed to be using. Ate supper overlooking a small canyon there. Returned about dark. Two deer.

The cedar here seems to be Ashe juniper, Juniperus asheii, which the ranchers all hate. It comes in after overgrazing, and then they not only have no grass but only cedars and they can't get the grass back. And they claim the cedars use up a lot of water. They have to cut the cedars. But this country has lots of rain, 30 to 40 inches, albeit often erratically and often most of it in the hurricane season. Lots runs off rather quickly into underground limestone, and water is something of a problem. The main oak here is Plateau oak, a live oak.

Sunday, Oct. 23. Went out on field trip to Nature Conservancy area some 15 miles west of Austin. This area was obtained because a development corporation had to have some mitigation credits for the destruction of golden-cheeked warbler habitat, and they could buy this, give it to Nature Conservancy, and get the credits. Director of the area: Jim Freeze, also Terry Cook. The other endangered bird much discussed here is the black-capped vireo, which I saw both of when I was there in April of 1991. Also met again David Diamond, plant ecologist, and Lee Ann Linam, who works with endangered species for Texas Parks and Wildlife. Met and talked extensively with Bob Budd, a Wyoming cattleman, long president of the Wyoming cattleman's association, but who a year ago took a job running a showcase ranch at Lander, trying to prove that cattle and biodiversity mix. He is on the "Fence at Red Rim" video.

That evening, went to the Congress Street bridge to see the bats but really didn't see any; maybe one or two flying around. They migrate south about this time of the year.

Oct. 28, 94, Friday. Put Jane and Shonny on limousine for Denver, after Nan had massive stroke.

Oct. 29, 94. Nan died, 101 years. Bless her.

Oct. 30-Nov. 2. Santa Fe with Sand County Foundation. Flew down Sunday, nice flight in commuter over the mountains, mostly clear. Got car and drove to Bandelier National Monument.

Lovely day and good colors, many leaves still on the trees. Lunched at the monument near the Visitor Center, then walked in the main ruins trail and on to the ceremonial lodge. Abert's squirrel. Main vegetation:

One seed juniper (Juniperus mexicana or, sometimes, monosperma) has multiple stems, no main trunk, typically. It is the common one here. (Weber puts in Sabina now; he reserves Juniperus for the low, common juniper, Juniperus communis, only 1 meter or so high.)

Rocky mountain juniper (Juniperus virginiana var. scopulorum) has single main trunk. The Eastern version is red cedar. Tends to grow a little higher. (Weber puts in Sabina.)

Alligator juniper, Juniperus deppeana, with furrowed bark broken into small square or rectangular plates, like an alligator.

Ponderosa pine. Boxelder. Gambel's oak. Narrowleaf cottonwood. Water birch.

High elevations:

Whitebark fir (Abies concolor), also in southern Colorado, with long needles. This will grow lower down than Subalpine fir (A. lasiocarpa) and will mix with ponderosa pine and Doug-fir.

Corkbark fir (Abies arizonica), with bark spongy under hand pressure, bark strongly checkered with large lenticels. On Wolf Creek pass.

Returned to Santa Fe, and night with Gerry Allen.

Oct. 31, Monday. Left early and drove up into the ski basin in the Sangre de Cristo mountains (Santa Fe National Forest). Lots of aspen in the upper reaches. Movie team shooting some episodes on Earth II, a TV series, along the way. At 11.00 a.m., turned in car, and was picked up. Stayed at Rancho Encantado ("Enchanted Ranch"), a rather too expensive place. John Wayne, Grace Kelly and Prince Ranier, and Henry Fonda have all stayed here.

Reed Coleman, the chair of the Sand County Foundation, was a boy whose family owned property adjacent to the Aldo Leopold shack, and he has many memories of growing up with Leopold about the shack.

Nov. 1, Tuesday. Hiked in the morning in their so-called "Wilderness" area, pinon-juniper scrub land. Common shrubs: One seed juniper. Mountain mahogany. Rabbitbrush, which they call Chamisa. Cholla cactus, prickly pear, and Yucca. Pinyon jay. Lots of Townsend's solitaires, singing at the top of juniper trees. Wednesday a.m., went to seminar; Wednesday p.m., flew home.

Nov. 13, 94, Sunday. Cherokee Park State Wildlife Area, Upper Unit. Left about 7.30, alone. Nice drive up, sunny weather, but promise of snow flurries later. Turnoff is 22 miles from Route 287, past Cherokee Park toward Sand Creek Pass. The road inside the SWA is in good condition, but there were icy spots with packed snow. Reached campground at the river, about 10.15 a.m. Actually the campground is on Sheep Creek with the North Fork of the Poudre coming in at a right angle bend from the South about a half mile east, downstream, and with George Creek joining Sheep Creek just before that. I was in this same area June 12, 1974, twenty years ago! Called a pair of coyotes in then.

There is a good steel footbridge over Sheep Creek right at the campground.

Downriver is a series of mown meadows with a road, more or less, running between them. Walked downriver and crawled over rocks to get over the North Fork of the Poudre, only to discover another good steel footbridge shortly below the road crossing. Walked on downriver, now in good snow flurry, later clearing. After about a mile, just below the last big mown meadow, trail crosses river (which I couldn't do), and it becomes too difficult to go on downstream on the south side. Next time take waders. There is a good campsite right where the trail gives out, would be good for a short September backpack. Lunched on return. There are several salt blocks in here.

Returned and walked up the George and Cornelius Creek trail as far as the junction of George and Cornelius Creek. I walked this earlier and further in 1974.

One group of four deer on return in Cherokee Park area; later, lower, a nice group of nine. No bucks. Hard snow flurry on way out, but then it stopped. On way back lower down partial clearing and yet still stormy, weird lighting effects at sundown.

Nov. 20, 1994. Sunday. Bridal Veil Falls, up Cow Creek, from McGraw Ranch, RMNP. Snowstorm predicted the night before, but the day was with cloudless sky. Left about 8.00 a.m., and drove into McGregor Ranch road to check out trailhead (this is not McGraw Ranch; don't confuse the two). Twin Owls and Gem Lake trails start here; see map. RMNP does not own McGraw Ranch, but they have purchased a scenic easement in the area and control its development. Nice coyote on the way out; crossed the road in front of me and I watched him a minute or so.

On to McGraw Ranch (intermediately Indianhead Ranch, but McGraw Ranch before that). RMNP now owns it; it was all boarded up. The McGraw Ranch road says private road; but it isn't. The road is dirt and the parts of it descending to the ranch are somewhat shaded and there can be snow pack on the road.

Hiked to Bridal Veil falls, modest hike on good day, but toward the end there was more snow; the trail gets little winter sun in here. Falls was a frozen falls and lovely in the sun, though it shaded up while I ate lunch there. Hiked out about 2.30. There are various other trails in here now, see map. About six deer in one group, two bucks. Either of the two campsites in here (Rabbit Ears, below a rock formation of that name) and Peregrine) would be good for short or fall backpacks. Townsend's solitaire, and interesting mixed flock of chickadees, nuthatch, juncos. 6.4 miles roundtrip.

Earlier times in here: Nov. 17, 1984, North Boundary Trail to West Creek Falls. May 18, 1985, North Boundary Trail to West Creek Falls, with Giles and surprised by the porcupine. Oct. 7, 1985 with Fred Hermann, when I had to get the Scout and drive up the road to fetch him out. I thought I had been to Bridal Veil falls before, but find no record of it. Nice pair of gray crowned rosy finches on the return, seen at close hand on the trail in front of me.

Returned to RMNP. Ground snow blizzards off the summits made for an eerie lighting scene. There was a large herd of elk, about 250, in a field on the way in, with a house nearby. Drove through the park, about two dozen mule deer. No elk seen here. But on the way out of Estes, in the big field to the north there was a herd of about 200. That makes about 450 for the day.

Thirty bighorns, in spectacular location on the rocky canyon side, at the mouth of Big Thompson Canyon, a few hundred yards west of the siphon. Hopping about in places you wouldn't believe. Getting towards dark, but you could still see them quite well. Bighorns of all sizes, sexes, ages. I never remember so many and in such a spectacular location, though on January 2 of this year, I saw two in a similar situation. Quite a good day.

Try a backpack to McGregor Mtn campsite, and then hike on up to Lawn Lake for a day hike. See map.

Nov. 27, 1994. Sunday. Pawnee Buttes, in a gale. Jane is still in Richmond after Nan's death. Sunny day, with front just passed through and strong winds. Drove to the trailhead, half mile south of the observation point. One golden eagle at Crow Valley. Hiked the mile and a half to the West Butte in gale force winds, though where the trail drops down below the cliffs, it was less windy. Returned, and lunched in car at observation point. Meandered back. About two dozen antelope on way back. Lots of horned larks, though they move so fast darting in the wind that it is hard to recognize them. This area is closed March 1 through June 30 to protect nesting raptors.

Dec. 18, 94. Galuchie Park area, vicinity Storm Mountain. Drove in Jeep to Galuchie Park, clear road to Cedar Park and sometimes light snow pack thereafter, but no problem in 4WD. Parked 200 yards short of the main Galuchie Park, really the east end of it on the map. Forest Service Access Road 128 is marked clearly this whole way, 6.8 miles from blacktop near Drake. In Galuchie Park, you join OHV (Off Highway Vehicle) 153, which is the Bear Gulch road coming up to become the Foggy Park Storm Mountain Road. But I spent the day trying to find a way into the Storm Mountain Trail (not road) in below, and hiked around this way and that, never found it. I first made a circuit around below the cabin with a pond that brought me back around into 128, and retracked. Then I followed out another road that I think does come near to it. It came to an abrupt end below a cabin named La Cumbrita, posted, and I walked two trails from there into two cabins, but found no through trail. I still think this was close.

Returned and walked toward Foggy Park, but thought I better not press it in winter to make it that far. Nice day, rather warm in the morning. I was here in March 24, 1970, when I got old "Becky" (green Chevy) stuck. Then I backpacked in here via the Bear Gulch Road from the Masonville side, June 12-14, 1978. 6-8 deer in the canyon, one half curl ram roadside. Stellar's jays, not much moving. Some old bear scat on the trail.

Dec. 24, 1994. Saturday, Christmas eve, with Shonny, since who knows when! Up Lion Gulch. Warmest day I recall at this time of year. Perhaps 150 elk in the open field at Estes on the way in. A nice adult bald eagle out on the ice in Lake Estes, got the scope on it a bit before it flew.

Hiked up the Lion Gulch trail without event, except one rather icy spot. Good nuthatches on way up. Passed Walker homestead, where Giles and I camped, and, shortly past that, lunched on top at Griffith homestead, then walked perhaps a half mile further, and returned to make Christmas eve happenings. Two dozen elk crossing road on return. The eagle was back on the ice. Drove through the park, perhaps three dozen deer on the road climbing above Upper Beaver Meadows. Lovely day, nice clouds, very scenic with deer in foreground. Perhaps sixty elk in Horseshoe Park. Coming back, towards town, three nice bighorn rams on hillside, all three about three quarters curl. Nice view in scope. Back through Estes and perhaps two hundred elk now in the open field. I was up Lion Gulch June 10-12, 1983, backpacking with Giles; August 13-14, 1983, with Giles and his Cub Patrol; and in from the Pierson Trail side, June 8, 1984.

Mother broke her hip and had surgery yesterday.