

27 November 2010

Dear Friends and Family,

I am writing this letter a bit earlier than usual, in contrast to the very late letter of last year. Unlike three of the last four years, we have not taken an international birding trip in November (the previous trips having been to Kenya, Brazil, and Antarctica), so the fall has been less hectic. Although we are not currently signed up for any birding tours, our plan is to visit Thailand in 2013 or 2014. Asia is the only continent to which we have not traveled for natural history purposes, though I've been there on business trips with a little birding on the side.

My job remains about the same; roughly half my time is spent running the organization containing the top 5% or so of the engineers in the company, or contributing to its activities, such as writing research proposals, sponsoring seminars, organizing conferences, etc. The other half is spent on research, particularly developing image quality metrics and analyzing new technologies. This year my group members and I wrote three papers for external conferences, one of which I presented in San Diego in August, providing a good excuse for a week-long trip to that part of the state. Aptina has been surviving, though not yet thriving, in the 17 months since its spin-out, but I still remain pretty optimistic about the chances of going public in the next few years.

California is still in a big housing slump and salaries are still down in the Bay Area, so the economy remains challenging. Our house has fallen by one-third in value since we purchased it in October of 2006, just after the peak of the market, and our mortgage now exceeds the home's value. It's hard to believe that the prices can go much lower, but some are predicting a "double dip", with a second recession starting soon. Historically, owning housing in the Bay Area has been one of the best investments available, but we'll be lucky to break even by retirement, which might be about 7 years away in a favorable scenario.

Eileen has continued with her volunteer work at the arboretum and in the herbarium and still enjoys both very much. She made more progress on the garden this year and is starting to get a better idea what can grow in the sandy soil. Eileen increased her regular daily run from 3.1 to 4.3 miles this summer and I've been trying to do the same this fall. She has enjoyed frequent visits with Jennifer (from Colombia), her toddler Pablo, and her husband David, who recently moved in just down the hill from us. Our nephew Enzo is now over two years old and is a source of much delight, with Mahrla often sending cute pictures of him. Eileen saw him and the rest of the El Paso crew in January, and we both visited in August. Eileen has read about 35 books so far this year, of which a particular favorite was "Africa in My Blood: An Autobiography in Letters, the Early Years" by Jane Goodall. I particularly enjoyed "Born to Run: A Hidden Tribe, Superathletes, and the Greatest Race the World Has Never Seen", by Christopher McDougall.

We finally experienced a wet winter here in the Santa Cruz Mountains, receiving over 57" of rain between October 2009 and May 2010, which raised the local reservoirs back to approximately their usual levels, and gave us a summer without water or wildfire worries. It had been so dry since we moved here that one person driving from San Jose to our house nearly missed their exit because my directions said to turn just after the road crossed over an arm of the reservoir, which they did not recognize as such because of the drought!

We added a few new bird species to our yard list this year: Northern Saw-whet Owl, Rufous Hummingbird, Nuttall's Woodpecker, Yellow Warbler, and, on the very day I am starting this letter, Red-breasted Nuthatch (#69). Several evenings this summer as we ate dinner on the deck, we watched a California Vole feeding in Eileen's garden, our 12th yard mammal. The others mammals on the list are Mule Deer, both Eastern (introduced) and Western Gray Squirrels, a bat of the genus *Myotis*, Raccoon, Merriam's Chipmunk, Striped Skunk, Coyote, Brush Mouse, Bobcat, and Brush Rabbit. There appears to be a second larger bat species present as well but we're waiting for a better observation to put it on the list. We see bats most summer evenings at dusk, and Eileen often hears them with a bat detector as they fly over later in the night. The raccoons and skunks that come in for our birdseed often walk right past Eileen as she sits out on the deck on warm nights.

Our project this year was to try to locate as many "new" native families in California as possible. During 2007–2009, we saw 129 of the 154 native families treated in the botanical bible of California, the Jepson Manual, leaving us 25 families to go. In addition, there is a revision of the Jepson Manual underway, expected in the next few years, for which the family classification has been announced. It would add 6 more entries to the list of missing families, giving us a total of 31 targets during 2010. I spent all my spare time for several months during the winter researching locations from which these families had been reported in the state. Many of these sites are defunct, or on private property, or too vague to be helpful, but by the end of the winter I had gotten pretty good at separating the wheat from the chaff, and at using Google maps (especially the aerial photography) to help pinpoint potential locations.

We took a pair of two-week trips that were designed to look for nearly all of our missing families, one to southern California (principally the deserts) in late May and one to northern California a month later. In addition, we looked for miscellaneous targets on a number of other trips, especially the one to San Diego for a conference in August. In the end, we found a gratifying total of 27 of the 31 target families, many of which were very challenging. Of the remaining four families, one (*Pontederiaceae*) may not have been seen in the state in decades; one (*Koerberliniaceae*) may not occur on public property in the state; one (*Portulacaceae*, containing only one native species in the new Jepson) occurs in only a small, remote desert area and is probably detectable only for a month or two per year; and one (*Aspleniaceae*) has four species but the most likely is almost restricted to San Diego County and is only locatable during the rainy season. We will continue trying to find these other four as opportunities arise. Searching for the 31 families was a really fun project and took us to some remarkable locations! The next logical step would be to start trying to find the 250 native genera we have not seen in the state, but that's a pretty daunting amount of research and field work!

In addition to the new families of plants, we saw 92 new genera, bringing our total to 674/924 (72.9%), and 489 new taxa (species, subspecies, and varieties), bringing that total to 2412/6195 (38.9%). Other statistics for the year: by the end of December we will have spent about 100 days in the field, and will have slept about 90 nights in the camper. We also managed to botanize the last four California bioregions, of 35 defined in the Jepson Manual, which we had not visited previously. So we've now seen much of the variety offered by California, and it is indeed

remarkably diverse in terms of habitats, elevations, bedrocks, soils, etc., which makes it so fascinating for natural history.

We took a few local hikes early in the year with California Native Plant Society (CNPS) chapters in several counties, and took our friend Petri from Finland on a camping weekend to Pinnacles National Monument and Panoche Valley in late January. In March and early April several forays to the southern San Joaquin Valley, about 4-5 hours away, were good for early wildflowers, and on several of the trips we hooked up with friendly local CNPS members. Later in April and early in May we focused on foothills ringing the Sacramento Valley, which are legendary for their spring wildflower displays. We also joined a CNPS chapter for one of the best botanical weekends of the year, in northern Death Valley; one day yielded 26 new taxa, by far the highest number of the year.

Our first “families trip” ran from late May to early June and visited a number of locations in southern California, including Catalina Island, Upper Newport Bay, Anza-Borrego, the Algodones Dunes, the Picacho Peak area near Yuma, remote areas of the Sonoran Desert, the mountains of the eastern Mojave Desert, and Death Valley. We were lucky while in Yuma to hook up with our nephew Corey, who was shipping out from the Marines facility the next day. The second families trip followed soon after in late June and early July, looping through northern California with a side trip to Washington for work on the camper at the manufacturer’s factory. By coincidence we spent our 500th night in the camper in their parking lot, just feet from where the camper was built, the night before its “eight-year service.” There were a number of small things that were fixed, and we had the charging system upgraded and installed a solar panel, so that we now are generally in a much better position with respect to available power.

Places visited on this second families trip included an unusual vernal pool in volcanic soil; a pygmy forest on the coast; the high portions of the North Coast Ranges (our last state bioregion) with the CNPS; several interesting areas in the Arcata area with our friends Carol and CJ Ralph; the Shasta Lake area, the Modoc Plateau (where we canoed the Pit River, looking for a mythical plant family seen there about 65 years ago); Lassen Volcanic National Park; and Butterfly Valley, famous for carnivorous plants, ferns, orchids, and lilies. Perhaps the single most magical location was Willow Lake, just outside Lassen, which reminded us strongly of the boreal lakes we love so in upstate New York, Ontario, and Quebec. There we experienced our heaviest hailstorm ever (the solar panel survived, thank goodness!), saw the ultra-rare podgrass (a family thought extinct in California for many years), and heard a pair of one of the state’s rarest breeding birds, and probably its most mysterious, Yellow Rail!

An interesting thing happened one day later in the summer at home. Eileen was doing housework while I was outside working on the camper, and she kept hearing a clicking noise that sounded like some sort of electronic device gone awry. She walked all around the house and could hear it everywhere but could not locate it. Finally she realized that it must be something on her person, and looking over her shoulder could barely see what she assumed to be a june bug on the back of her shirt. She walked outside and started to take off her shirt to flick off the bug and discovered that it was a bat!! I grabbed a ruler and our dichotomous key to California bats and had narrowed it down to a member of the genus *Myotis* when it took exception to my measuring its forewing length, and fluttered off. Several times later in the summer this or another bat managed to get

into the house and fly around a bit soon after dark, affording us great views at close range of bat flight, which is really a very beautiful thing to watch.

After the rush of travel in early summer, things quieted down a bit. We had dinner with John and Carol Nelson from Rochester in late June, while they were in the Bay Area, where Carol has family; it was good to see them again and catch up on some of the news at Kodak. In early August we took a trip to San Diego for a conference where I presented a paper on image quality, adding on several days of botanizing and camping before and after the conference to make a 9-day trip. We tracked down four target families on the trip and saw the last of the 19 oak species in the state. Later in August we traveled to El Paso and enjoyed seeing Eileen's parents, Paul and Rosie, Rob and Marhla, and our nephew Enzo. Labor Day weekend we returned to Lassen Volcanic National Park, and a few weeks later visited Mineral King in Sequoia National Park, these trips serving as our "timberline fix" for the year.

One frustrating development this year was the increasing unreliability of our truck, a 2002 Chevy. It was relatively trouble-free up to about 90,000 miles, which was reached in the summer of last year. But since then, there has been a stream of expensive repairs (transfer case, radiator, engine mounts, rotors and axles, hydraulic pump, booster, and master cylinder, etc.) that have cost over \$7000 – and that does not include any maintenance – just repairs of things that broke. The hydraulic failures have been especially worrisome as twice we have lost power steering and brakes at the same time, a recipe for disaster, and stranding us both times. We had hoped to be able to drive a truck like this to 200,000 miles or so, but we decided in September, at 109,000 miles, to order a new vehicle. We expect delivery in mid-December of a Ford F250. Because of the camper, we require a beefed-up ¾-ton long-bed, and like our current truck, it will have an extended cab and four-wheel drive. Transferring the camper will be a bit of a challenge, though we have lined up an RV place two hours away that has two forklifts to remove and remount it. In the meantime, we just hope our Chevy doesn't develop any more problems.

With the truck issues, deadlines at work, and the time of year, trips have been sparse of late but as I finish this letter we're wrapping up a 5-day trip to the Sacramento Valley refuges, where we have been treated to many tens of thousands of geese and ducks. Thanks to a good tip from a CNPS field trip chairman, a Thanksgiving-day hike in nearby foothills yielded one last target plant family, despite the very late date (however, we spent quite some time on hands and knees before finding the diagnostic fruit of this parasitic toadflax, which we have seen before in the Northeast). The tentative plan for Christmas, somewhat subject to the truck delivery schedule, is to botanize in the SE corner of the state a bit and then visit Zion National Park for a few days.

Eileen and I hope that you and your families are doing well. We always like to hear from people or have them visit if in the area; our contact info is given below. Happy holidays!

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Some Rare Plants Seen in 2010

Top left: *Opuntia fragilis*, a small, snow-tolerant prickly pear cactus that, within California, is restricted to the Shasta Valley in Siskiyou Co, though it occurs in other Great Basin states. Top right: *Mimulus picta*, a spectacularly marked monkeyflower occurring in Kern and Tulare Cos. in the southern Sierra Nevada foothills, and nowhere else in the world. Bottom left: *Delphinium pupusii*, an unusually colored larkspur with a similar distribution. Bottom right: *Maurandya petrophila*, a snapdragon relative, with a world population of only a few hundred plants in three or so limestone canyons in the Grapevine Mtns. of Death Valley.

