Ron's Papers

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There was no doubt in my mind that Ron Prokopy would live until he was at least 90. I also knew he wouldn't stop his life's work, ever. And now that only one of those certainties has proven true, I can't yet see how our world of New England apple growers and researchers, the world of insect ecologists, our university, or my own world will function in quite the same way. Half the time I forget that he isn't home in Conway, isn't at his Fernald Hall office, and isn't checking curculio traps.

Maybe as a way to make my mind adjust, I've been focusing on just one facet of his life. I've been wondering how Ron Prokopy ever managed to write all those papers, over 450 publications, an almost incomprehensible number. As the main form of academic research currency, the number of publications a person writes gives other academics a quick read on the stature and impact a scientist carries. It's a career batting average, and Ron was a Ted Williams when it comes to writing. Very good scientists would be happy to write one or two hundred articles, chapters and other pieces over a career. And just as every hit Williams got represented hundreds of swings and hours of practice, every article a scientist writes represents hours of grant writing, lab and field experiments, data analysis and finally, the actual writing.

Naturally, some scientists cook the books a bit, accepting partial credit for papers to which they may have made little or no real contribution. It's like Enron reporting millions in imaginary earnings so that the company will look much more substantial. In science, this sort of "pub padding" can make author lists that read like an Old Testament genealogy. Ron never indulged in this sort of publication inflation, and he contributed a meaningful part in any research that carried his name, making his accomplishment all the more remarkable.

So I wonder, how did he do it? Perhaps it was because he frequently had trouble sleeping, and would not so much complain as comment on the fact that he had gotten only 4 hours of sleep the previous night. Getting along on a sleep regimen that could crack hardened spies certainly could explain some of Ron's productivity.

He did need an occasional recharge. When we were out on the road, between orchards he might say that he really needed a little rest, if I didn't mind, and he would doze off for 10 or 15 minutes. He revived, dragging his palm from forehead to chin as if it would wipe away the last vestiges of his nap, and emerging from his pupae-like slumber he'd launch full flight into an intense discussion concerning how we might arrange tests in the next orchard to serve multiple research tasks. Couldn't we use Broderick's old Mac block for the curculio work, and the maggot work, and the flyspeck work, making data collection visits even more productive? Ron lived with a New England farmer's kind of efficiency, carrying lettuce and carrot lunches in washed and re-used plastic bags, sporting an eclectic wardrobe of Goodwill clothes, and always trying to squeeze every bit of data possible from an experiment.

While Ron always got the most from a dollar, I'm not sure his Yankee frugality always contributed to research efficiency. He grew up on a Connecticut farm, and eeking a living from rocky New England soils means a lot of getting by and making do. For better or worse, he carried those habits into his research projects. And since the sort of research and teaching he did extended beyond brick and ivy to the orchards of New England, Ron and his lab group drove hours to and from research sites every day. The several vehicles needed for this were much like his clothes, a sort of Goodwill collection, including such classics as a vintage Korean War surplus MASH ambulance, a banana yellow Ford Torino with vestigial brakes, and cabin-cruiser like station wagons with rotted floors, all vehicles that had been rescued from the scrap-heap. They had far outlived their usefulness in polite society but could still carry people, tools and various objects covered with sticky goop around the state. I don't think Ron could fully conceive of buying a new car, or even a late-model used car, not when the same money could be used for an extra summer assistant. In fact, I think the rusty roof of a 10 year old LTD appealed to Ron not only because it was cheap, but because it said to growers

that Ron didn't care what things looked like, that we were not some well-funded, effete research institute, but rather people who got by and could be trusted. On the other hand, whether these crates would start reliably or keep chugging through sparsely populated parts of the state was another issue. Some days, I think Ron's powerful will to understand the orchard ecosystem was the only thing that kept those cars going.

Ron used time much the way he used research dollars, squeezing the minutes. When he drove one of the old heaps himself, he wasn't content to just think or listen to the radio. He had to read, review and, some say, even write papers while navigating the notoriously narrow, rock- and tree-lined roads between New England orchards. His approach to driving pretty much insured that if someone else was joining him, they volunteered to get behind the wheel. Ron could then retreat to the back seat to fully devote attention to his papers without the distraction of an on-coming cement truck. For longer trips, every plane ride, every hotel room served as an office and study for the constant, nearly undecipherable pencil scribbling on page after page of yellow lined paper. That single-minded attention to filling in what might otherwise be downtime with writing undoubtedly helped Ron's publication record.

Technology didn't. Ron never allowed computers to make his writing and research more efficient. He tried a laptop computer once, thinking it might save everybody time if they didn't have to download his email, then read and type his responses, not to mention typing up the pages of pencil scrawled manuscripts. And with a laptop, Ron could still write as he traveled, or when he sat in an orchard. It was a good theory, but Ron's mind never adapted to the keys and electronic screen. Within a few weeks, his son Josh had inherited the unused computer for his own use. Ron stayed with the yellow lined paper.

Naturally, rather than a PDA, Ron had a unique

paper organizational system. For day-to-day operations, he would periodically pull a small pile of recycled scraps from his pocket, consult 2 or 3 of them, and then make a phone call, ask a student to copy a research paper, or do whatever else the notes reminded him needed to be done. To my knowledge, Ron never had a date book or notebook; he had stacks of recycled paper scraps filled with his cryptic scrawl.

He did have a relatively inflexible organization to his year that probably contributed to efficiency; he could more easily plan ahead. His field experiments would be, for the most part, planned by the time we started the twilight grower meetings in the spring. Ron looked forward to those drafty barn sessions, talking with growers about the latest way to deal with tarnished plant bug or leaf miner. He remembered going to them as a kid with his uncle and seeing scientists from the Connecticut Experiment Station. Then, after getting his Ph. D. in entomology at Cornell, he went back to the Connecticut Agricultural Experiment Station to take on the position working with insects and mites in apples. The happy homecoming only lasted a little while, and the stories are vague. Evidently, Ron got involved in late 60's radical politics in New Haven. Ron left the station, traveling Europe with Linda, his wife, in a VW microbus. Being Ron, traveling Europe meant going behind the Iron Curtain rather than to the Riviera. On his return, he tried starting his own research station in Wisconsin and spent time in Texas working with seminal figures in the IPM movement just as it was starting. Then in 1975, he landed in Massachusetts.

But I'm digressing. As I said, Ron's year began with twilight meetings and grower visits, and it continued with 16 hour or longer days filled with field experiments, circus-like tents over apple trees, and all manner of contraptions designed to figure out why apple insects behaved the way they did. Ron digested data as it came in, on a daily basis, but by the end of the summer, he would already be putting it together into a bigger picture. The fall meetings would start in late October with a gathering of apple IPM researchers and advisors in Vermont, where the very latest results from that year would be presented and shared. A little later, more polished presentations would be made at the national entomology meetings and as the New Year began to growers at the New England Fruit Meetings. At Amherst, Ron would teach his IPM course each fall. In January, he would disappear to the library each day, reading articles that would be assimilated into grants or papers, as well as the March Message. The March Message included all the latest apple pest management information a grower could want, and Ron created it because the standard pest management material couldn't or wouldn't keep up with the pace he wanted to set. Delivered just before the growing season started, Ron would joke that it was good bathroom material. Wherever they read it, growers would make sure that they had. By the time the March Message was ready for press, Ron would be leaving for his annual trip to Hawaii. Of course his New England heritage wouldn't let him just go and enjoy Hawaii though he loved the place, so Ron had a long-running grant to study fruit flies there. Anyone he took with him soon discovered that the research agenda was just as 24-7 in Hawaii as it was in Amherst. As soon as he got back to Amherst, the twilight meetings and grower visits would start again. Woven into this annual fabric were daily meetings with grad students, lab assistants and technicians, post-docs, other faculty and visiting scientists. And all this was punctuated by special meetings and talks in which any successful scientist engages, talks in China or Washington, or meetings in Europe and Australia. Around this schedule Ron wrote the huge number of grant proposals and publications that mystifies me.

I know that it made a few people feel better to write-off Ron's publication record as the results of a monomaniacal workaholic. It wasn't that, and Ron, while he worked hard, didn't eliminate family, friends, recreation or the arts from his life. Some of the other parts of Ron's life seem totally at odds with his image as hard-working, salt-of–the-earth academic. For example, Ron played golf. When I went a round with him, he showed up carrying a battered, ancient set of clubs, wearing his Larry Bird short shorts and a T-shirt. It occurred to me that golf must be some concession Ron had reluctantly made to recreation, that someone had told him he needed a hobby, so he'd looked around a thrift store, seen golf clubs and determined that he would go play a round every week for Recreation. About the 6h hole, I began to see a pattern that suggested a different story. Short, but straight drives on the fairway, uncannily accurate approaches to the best part of the green, and consistent putting had Ron at par or better, while everyone else in the group was at least 5 strokes over. Ron was playing winning golf, and thoroughly enjoying it.

In fact, he had several athletic hobbies, done in

less-than-conventional ways that fit his schedule. He probably swam in every orchard pond in the state, following a day counting insects in apple trees, and maybe a short jog. On his own farm, he kept a muddy pond that doubled as a hockey rink. I remember one game when Ron had magnanimously taken a few of the weaker skaters, among them my wife, on his team. Because we had a shortage of real hockey sticks, Ron volunteered to use a broom. Not surprisingly, Ron's team quickly slipped behind. Ron's frustration grew more visible as the debacle played out, and as one of his sons threatened to score against Ron's group yet again, Ron swooped over to my wife, grabbed her stick, stole the puck from his 10-year-old, and skated the length of the ice to score himself. He followed that with enough goals to satisfy himself that he would not be humiliated. I suspect Ron's competitive nature also had a significant effect on his research record as well.

I can't fit his love of opera into an explanation of his publishing record, except that it was probably one of those releases any intense person needs to keep from imploding. Not being an opera aficionado, I failed, on several levels, to understand Ron's trips to New York to see Carmen or some lesser-known production. I do like non-musical theater, and music without theater, and Ron, knowing this, would be the one who organized evenings to see a summer play at Smith or a jazz performance in Northampton. Releases though these may have been, I still wonder how a man doing the grant writing, experiments, analysis and publication work necessary for 15 or so publications a year could have time for any of this? Or the baseball trips to Fenway Park. Or the hikes. Or the dinners with students, colleagues and friends. Or singing with the local chorus.

Teaching a course sets limits on research, and many successful scientists consider teaching a burden. Most have no idea what it means to work with people outside the university, people like New England apple growers. For many of the most successful scientists, their exclusive priority is the production of research papers. In contrast, Ron reveled in his role as advisor and colleague to the apple growers of New England, and devoted himself to teaching IPM to university students. He never considered ignoring the growers or students so that he might focus on more on research. Ron loved apples, the people that grow them, the places they grow, the insects that feed on them, all of it. Just as important, and less obvious, he knew that his work in the orchards led to better research and teaching. He knew that teaching growers how to manage apple pests taught him how to develop ecological theories that worked in the real world. It made his classroom more relevant and real to his university-based students. The time it takes to do all this, of course, makes those 450 papers even more astounding.

Ron uniquely bridged the space between academics and apple growers. I think it's difficult for purists in either group to appreciate how well he did it. For example, he and a colleague discovered that Rhagoletis pominella (the apple maggot fly) had moved from its native American host, the hawthorn (Crataegus sp.), to an imported host, the domestic apple (Malus domestica). They held this up as an exciting example of sympatric speciation (one species diverges into two separate species in a single geographic location) by publishing in the world's best scientific journals and speaking at major academic meetings. It's still a classic example in ecology. At the same time Ron showed that the apple maggot's predilection for round, red objects could be useful to growers, telling them when the damaging flies were present in their orchards, and just as importantly, when they were not. For a few years, I'm sure Ron totally disrupted the market for croquet and bocce balls, buying them up, painting them red, covering them in sticky goo, and hanging them in apple trees to determine whether growers needed to apply an insecticide.

I'm still not sure how Ron sold IPM to apple growers. He came into the job with some pressure, as the previous two apple entomologists at UMass had been fired. When he started his Extension work, Ron still had most of his long hair from the 60's and carried his ever-present paperwork and field equipment in a woven Guatemalan shoulder bag. It's hard to remember now, but at that time IPM ran counter to standard pest management dogma. For years, Extension and pesticide salesmen had been telling orchardists that they needed to spray chemicals weekly, sometimes more, to eliminate any possibility of pests and disease in apples. Along came Ron, asking them to hang colored sheets of sticky cardboard and bocce balls in their trees, count bugs, and above all, not to spray pesticides until the pests actually started their invasion. I know many growers, looking at Ron and the colored bocce balls, were worried that this ivory tower hippie from the University was trying to lead them into disaster.

But Ron, having grown up on a fruit farm, was not an ivory tower scientist. He may have been an idealist

but he understood growing apples. And after talking with him, a few influential growers recognized that. Perhaps more importantly, Bill Pearse, probably the most influential quality control man working for the largest apple wholesaler in Massachusetts, saw the promise of better pest management with fewer pesticides. Ron was a little different and intense, but I know Bill liked and respected him, and the feelings were mutual. I'm sure Bill quietly suggested that growers give some of this IPM stuff a try, and at the same time, set Ron straight as to how far growers might actually be willing to go. In the next decades, even after Bill's death, New England apple growers would be leaders in using IPM, because Ron wanted to do more than just hide in the University and write papers.

But of course he did write all those papers too. I probably never will really understand how, but I'm glad that he did it, that he managed to get down on paper so much of the knowledge he gained. Ron collected knowledge, from growers and other scientists, from everyone he met, from his experiments, he gathered it in, processed it in his own inimitable way, and wrote so much of it down. What a tremendous legacy. While no one will ever touch each of us the way Ron did, I remain hopeful that some of his students, or perhaps his students' students, will be able to bridge that widening gap between academics and our agricultural resources, and carry on Ron's dream of a truly ecological, sustainable orchard.

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