Having begun my entomological career as a young amateur, I have always had a soft spot in my heart for the amateur component of science. For most entomologists, what we do is a labor of love, fueled by the fascination of insects, and in that sense we are all akin to amateurs as well. There are some interesting dynamics emerging between the amateurs and the professionals in entomology, however, and that is what I want to explore here now, in part to encourage more amateur involvement in societies such as the ESA.

Let’s start by asking the obvious—what do amateur entomologists do? Many collect specimens, and a significant proportion of collectors are scientific enough to allow others to examine and borrow from their holdings. For other amateurs, photographing or rearing insects is the activity of choice. Some do these things without any apparent need for official acknowledgment of their worth. Others like to publish the results of their studies, and it among these things that seem to fascinate amateurs generate only sneers from the pros, such as windblown stray individuals, new county records for widespread common species, accidental inter-species mating events, and individual aberrations. The pages of unrefereed journals are full of such things, and it is an interesting question whether this amounts to the obsessive cataloging of trivia, or the production of a valid scientific database. After all, records of insect vagrants might generate patterns of value to biogeographers, oddball mating records might be of value to those interested in speciation mechanisms, and aberrations might give interesting clues to the mechanisms behind wing-pattern determination or other aspects of development.

I mentioned “sneers” in the last paragraph, and let’s face it; the dynamic between amateurs and professionals is not always one of mutual admiration. In a perfect world, professionals mentor amateurs, and give credibility to their efforts, while amateurs provide insights that may have eluded their professional colleagues. I’ve seen this from time to time, and it’s a beautiful thing. My friend the late Michael Majerus was both a Cambridge professor and a major figure in the UK’s Amateur Entomologists’ Society. In the world of tiger beetle studies, many academics (myself included) owe a great deal of gratitude to a sophisticated amateur from Minnesota named Ron Huber. And who wrote the latest (and the very competent) taxonomic catalog for the butterflies of the U.S. and Canada? A self-taught lepidopterist and truck driver (Pelham 2008)! Add to this all of the data generated through citizen science and volunteer monitoring programs, and you have the potential for some really wonderful cooperation.

But I’ve also seen the opposite of mutual admiration—mutual contempt. Sign up to a few of the relevant listserves (I dare not mention them by name) and you’ll quickly get the picture. Many of the amateurs are just plain grumpy about the way they are treated by the “snobby” academics, and many of the professionals are equally grumpy about the contempt that emanates from the “uppity” amateurs. Add differences in politics and religion to the mix (and yes, this is common as well) and the result is predictably unpleasant.

So what’s going on here? Well, one aspect may be this: what amateurs do today was commonplace work for professionals not too far in the recent past. In the good old days, professors and senior government researchers worked toward the grand goal of cataloging all insect taxa and their basic natural history, got paid for it, and built illustrious reputations. There is, therefore,
plenty of evidence available to convince the advanced amateurs that they are in fact, real scientists. They follow in the footsteps of real scientists, publish in real journals, give real talks at real scientific meetings, participate in listserve discussions with real scientific peers, and follow real rules, such as the International Code of Zoological Nomenclature. They have taken up the torch, left smoldering on the roadside by the noble scientists who inevitably had to give up the race.

On the other side of things, it’s equally easy to see that the arguably anachronistic tasks that the amateurs favor are no longer work that is slow, ploddingly inductive, and not likely to result in any major breakthroughs in our understanding of insect biology. How can a professional hold one set of values when reviewing grant proposals, or manuscripts for publication, and another when dealing with amateur science? At the very least, professionals expect the use of new and sophisticated techniques in order to justify the exploration of “traditional” questions in science.

I can’t help feeling that what is going on here has something to do with what cognitive scientists call “frames.” Frames are mental models—shortcuts that we use to help make sense of the complexities of life. They are something like paradigms, and often they take the form of metaphors. George Lakoff (e.g. 2004) has written extensively on this subject, and although he very strongly links the notion of frame to his own political agenda, he makes many good points about how difficult it is to communicate with people holding a different, and especially an incompatible, frame. Perhaps this is what is happening between the two cultures in entomology.

Let me try to characterize what I am calling here the amateur frame. Here, a scientist is a selfless person engaged in a timeless task of great intrinsic value. Scientists care a bout the details, and about “getting it right.” They are objective, and therefore immune to fads, or to the corrupting influences of wealth and power. For those who have devoted their lives to entomology, the foundational task is clear: first describe the diversity of insects on our planet, then characterize it ecologically. The methods for doing this are not new, but they are also not simple, and not everyone can perform them competently.

The academic frame, on the other hand, is clearly different. At the risk of misrepresenting my colleagues, let me take a stab at it. To academics, scientists are highly trained individuals who participate in innovation, and position themselves at the cutting edge of their discipline. The products of research are not intended to be timeless because science is self-correcting, and as such, it never rests. Scientists take pride in their contribution to the collective intellectual exploration of nature, not in a legacy carved in stone and intended to last forever. Peers recognize excellence in one another, and reward that excellence with grant funding and access to publication in the best journals.

If you find these sketches of the two frames inaccurate in some ways (and I’m sure they are), you have to admit that they represent fundamentally different ways of looking at the world of insect science. Yet, because amateurs and professionals overlap so broadly in terms of everything from vocabulary to the proud label of “entomologist,” it is easy for both groups to lose track of these deep differences in perspective, and when to properly apply each of the two frames.

Meanwhile, the task begun by the likes of Linnaeus, Darwin, and Fabre is still not finished, nor is our understanding of the more esoteric aspects of insect life complete. I personally find that it is much easier to appreciate the contributions of the full diversity of entomological styles once I have taken the time to characterize the frames in which they operate. Let’s hope that this is true for everyone who reads this as well (the vain hope of all authors—perhaps I should say “for at least a few people who read this”), because we are all better off for the diversity among us, the tenacity of those who refuse to abandon the unfinished work begun by our entomological forebears, and the creative drive of those who push back the cutting edge.

**References Cited**


John Acorn lectures at the University of Alberta. He is an entomologist, broadcaster, and writer, and is the author of fifteen books, as well as the host of two television series.