

## STICKY WICKET

## Raining sideways I

Mole



Oh, but it's a dark and stormy day. Wind gusts are knocking down trees and sending roof tiles flying off, um, rooves. And the rain is cascading off my office windows in not only sheets of water, but veritable floods of the stuff. We are only catching the merest edge of the hurricane, and oh those poor folks in the midst of it.

And here I sit with Professor Lizard, talking about our incoming graduate school class and the program we're teaching. It will be Lizard's first time lecturing in a professorial capacity, and he's raring to go.

Long ago, in a galaxy far away, I was once a graduate student. I lived with my Uncle Owen and Aunt Beru, and I thought that the new droids were going to work out really well. So well that I wanted to submit my application to the academy *this* year. But Uncle Owen objected, and it looked like I was going nowhere. No, wait, that wasn't me.

But I did have an Obi-wan Kenobe (I wonder if he means old Ben Kenobe?), and we would walk his dogs and have lunch together, and he would tell me about the ways of academic science. Actually, I had many Obi-wans, and with their patient guidance (and, I admit, I required a *great* deal of patience), I somehow navigated my way to where I am. I'm not sure I would have done it without them. Actually, I'm pretty sure I wouldn't.

One of these Obi-wans (who actually *looked* a bit like Ben) did something remarkable. Of course, I didn't know it then – back then I

just accepted that this was something professors simply *did*. Every time we would have a seminar speaker, and all of these were, to me, rock stars (I knew all their songs by heart), the faculty would go to dinner (as we do), and then, afterwards, we would congregate in Obi-wan's hut to drink wine and discuss science late into the night. By 'we' I mean the post-docs and me, since at the time I was the only grad student in the program. I didn't realize it then, but it was a remarkable, transformative experience to interact with these scientists as a lowly grad student insectivore. I grew confident (more confident than my abilities allowed, I confess, but maybe that was okay), and I'm not sure that without it I would be who I am today (a possibly less lowly insectivore who works as a professional academic scientist).

As I put such ideas into Lizard's head, I confess to a growing fear. I'm worried that our graduate programs, not only 'ours' but most of ours, are off kilter. Our grad students are out in the storm, and it is raining sideways.

Like many academic scientists, I spend a lot of time traveling around to other institutions and giving seminars and visiting departments. Most of the time, I have lunch with the grad students. The exception is when I'm actually invited by the students. In that case, I insist that, as a student invitee, I will only formally meet with students, but would welcome having lunch with the faculty. Hey,

fair is fair. (For those of you who get such invitations, consider insisting on this condition—the students really like it, and I've had some great interactions.)

But during these visits with grad students, in recent years I've noticed a disturbing trend. Sure, there are always those exceptional students who are passionate, engaged, and intellectually excited, and are likely to succeed (and I very much hope they do). But so many I meet nowadays are adrift; they have committed to a program but see no future in the pursuit, and are already searching around for alternative careers. Don't get me wrong, there is nothing inherently remiss in keeping one's mind open, but this is more akin to despair. They came in wanting to be research scientists, and are already in the process of giving up. I need to be clear here, I have no problem at all with a student whose career goals are in communication, patent law, or, indeed, anything else, joining a PhD program to further that goal. But these aren't the people I'm talking about.

"But Mole," you say (I can hear you). "You always talk about how *hard* science is, and that some people, however, smart, are just not suited to it. Now you're telling us that these students should stick with it even if they've realized that they aren't cut out for it?" No, that isn't what I'm saying at all. In fact, I agree with you (agreeing with me, I guess) – the sooner one can realize that one doesn't want to do this science thing, or feel one can't, the better, lest we have

people who have invested many years of their lives chasing disappointment.

This is not a small point. I am heartened by the rising trend of graduate programs that make an effort to acquaint students with ways in which a PhD degree can be put to careers other than academic research. In some cases they even instruct students in how to pursue such objectives. This is a good thing: a simple calculation shows that if every graduate student went on to found a lab with at least two graduate students who did the same, in a few generations all human effort would eventually be directed at academic research. (There is a theory that this is exactly what happened to the Planet Hoth, which as a consequence became a barren ice world. Okay, this is only *my* theory.)

But I'm talking about something else. Disenchantment. The loss of the spark. Spirit pulverizing dismay. And I don't blame the students. I blame their teachers. It is not an excuse if the teachers are themselves disenchanting, if they have found their dreams dashed, and their careers disappointing. At least they don't have to take it out on the students. And I think they are. Worse, I see a pattern that is devastating for not only the students, but for science in general. We need to talk about it.

Oh gosh, but that's gloomy. Well, what do you want? It's a dark and stormy day. I'm going to go and watch Star Wars. I'll be back when the sun comes out.