FACTS, INFERENCES, AND SHAMELESS SPECULATIONS

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Greetings

Your editor has invited me to these pages for a bit of aggravation. Whether it's hers, yours, or mine remains to be seen, but in any event I am here to wander through the fleshy, intermingled edges of ornithology, birding, conservation science, and environmental action. I have two objectives. One is to have fun, both in the writing as well as in the receiving (Dr. Drennan has kindly agreed to devote space in each issue to readers' reactions and comments). The second is to save the world.

Dose those birdies

So much for challenges. Now to fear. My own.

I have a lurking vision of a new branch in the environmental movement springing out of birding's contentious ranks. They will become known as *Birders for Pesticides* and their rallying cry will be *Dose those little birdies*. Sound unlikely? Consider the facts:

First, from physiology we learn that various pesticides, particularly the chlorinated hydrocarbons like DDT and DDE, are lipophilic. No, this has nothing to do with a peculiar hankering for lips. Instead, it means these chemicals concentrate in lipids, or fat. Put them into the food chain and they wind up in a bird's fat deposits and other concentrations of lipids in the body.

Second, from studies of migration we observe that birds fatten prior to flight. Typical increases involve 25%-40% jumps in body weight achieved by manyfold increases in fat deposits. Couple that with lipophilia, and you see that if the food source is contaminated with chlorinated hydrocarbons, then the fat put on to fuel migration is full of unpleasant, uncontrolled substances.

Third, that fat is burned during migration. When a bird flies from Barranquilla to Ocracoke it fuels its exertions with the energy stored in its lipid deposits. The contaminants contribute not at all to this process, and in fact are turned loose into the blood stream.

With those safe facts behind us, let's launch into some reasonable inference and beyond that to unabashed speculation:

(1) Said contaminant circulates within the blood stream until it zeros in on remaining lipid deposits in the bird's body. By the time the fat deposits have been burned these chiefly are two: the reproductive tract and the brain. Concentrations of the lipophilic substance then build up in these sites. The effect on female reproductive tracts is well-known ... eggshell thinning.

(2) If large, the concentrations in the brain lead to death. If sub-lethal, they produce various forms of behavioral disorder. Might they interfere with migratory competency, leading many contaminated migrants to fly astray? The notion is not implausible.

Imagine whole migration systems gone awry, thrushes from Guatemala or shorebirds from Perú headed 5°, 10°, or more off-course, alive but bound toward reproductive death because their guidance systems malfunction. Would the dosages required to produce such an effect be larger or smaller than what yields eggshell thinning? What effects would there be on population trends? What manifestations would we observe in our forests and along the shore? Would short-distance migrants be less vulnerable by virtue of trigonometry ... that 5° over 250 kilometers is less likely to lead the bird into trouble than 5° over 2500 kilometers?

Out leap a host of unanswered and disquieting questions, and as far as I can tell they have yet to be asked, much less answered, with the sort of scientific rigor that must underpin their resolution.

So far it all makes sense, even if it lacks substantiation. But from whence **Birders for Pesticides?** It doesn't take a Stephen Hawking to see the answer. What better way to increase the likelihood of new Maryland records than dosing western Mexico with gobs of direction-altering sprays? How better to keep the World Series of Birding tally rising than some inspired applications in Honduras? How else can we ensure that banders on the Farallons don't get bored? If these speculations are correct, then we have within our grasp a means of increasing vagrancy. And what more could birders need? Better birding through chemistry! **Dose those little birdies, please!**

All right. That's tongue deeply in cheek. But look at it another way. The decision not to act can be just as detrimental as a decision to do something harmful. You are offended because I suggested birders might do something perniciously, egregiously selfish. I am appalled because too many birders sit back, have the fun, and pass on the responsibility to others. You know the old refrain: "If you're not part of the solution. . . . " Any one of you who isn't actively supporting conservation measures has made a choice that hurts the environment. Who has more personal fun at stake in preserving what it takes to make migration tick than the birding community? If you won't, who will?

There is another message here. We have not heard the last of birds and various forms of chemical contamination. Solving the DDT-eggshell thinning problem was a major *coup*, tumbling into Kesterston another. But we humans pump countless chemicals into the environment at prodigious rates with little appreciation for their impacts. By and large, our intolerance threshold is crossed only when chicks don't hatch or when deformities erupt or when birds die. Dramatic stuff. Our science is not well-equipped, or at least not targeted appropriately, to reveal sub-lethal impacts expressed at a population level. Ponder again my question above: what population-level manifestations would we see of chemically-induced aberrancies in migratory competency? Alternatively, what research program might we initiate to address the issue? For starters, I would suggest laboratory experiments on orientation with varying contamination levels. Match this with careful examination of tissue from wildly off-course migrants.

In the meantime, if you want your ***Dose those little birdies*** or ***Better birding through chemistry*** bumperstickers, send $25 to American Birds.

??: Handbook Bashing

You latter-day Grinnells have just been granted the opportunity of several life-times. Joseph Grinnell, of course, was the last person to know everything worth knowing. Since then either the explosion of knowledge or an implosion of ignorance has prevented any single individual from mounting that peak of knowledge.

Your chance arises with the publication of "The Birder's Handbook" by Paul Ehrlich, David Dobkin, and Darryl Wheye. Imbedded within that remarkable book are an inordinate number of information gaps labelled by the authors with bold and unrepentent ??. Don't blame Ehrlich, Dobkin, and Wheye for those gaps. Look at their bibliography. Scan their acknowledgments. They scoured the field for missing data.

Despite their prodigious effort, each of you will know (or think you know) the answer to at least one of the questions. You will be offended by the authors' affrontery to have gone ahead and published without consulting you, personally, on the matter. You will be astonished by their inability to divine through the ether the wonderful and complete set of unpublished knowledge you protect.

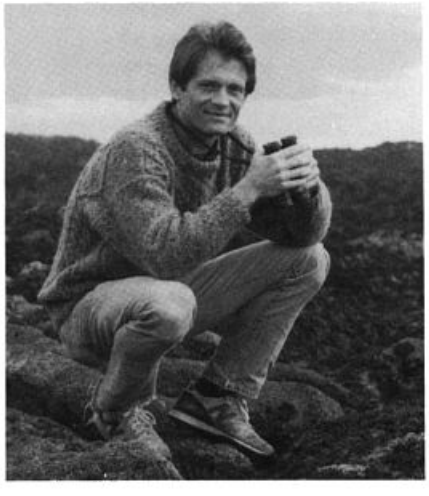
A whole new industry will be born: handbook bashing. How could they not have known? Who can wait for the reviews that will inevitably appear, litanies of the mismatch between what is in the book and what is in the body of unpublished knowledge common to the birding community?

So why would Ehrlich, Dobkin, and Wheye subject themselves to this obloquy? I have three hypotheses: altruism, tenure, and revenge. The first, that by identifying where the gaps are they might stimulate research and publication and provide a meaningful way for birders to advance the front of ornithology, is just too simple. It lacks sufficient conspiracy to be a hypothesis for the '80s.

The second makes more sense: what better way to ensure a life-time of citations than to pose all the questions? It will be impossible henceforth to write with scholarly thoroughness in ornithology without an opening: "The nesting *blah blah blah* of the *blah blah* has never been determined (Ehrlich *et al.* 1988)." Plausible as this interpretation might seem, Ehrlich is long since tenured.

I personally prefer the last. Rumor has it that early in Paul Ehrlich's career he spent time on Southhampton Island, in Hudson Bay purportedly studying butterflies but in fact accumulating marginally-publishable anecdotes about the sexual deviances of sandpipers. While more recent research has since confirmed his observations, the editors of the ornithological journals of that era did not see fit to publish them. He has thus conspired with Dobkin and Wheye (who also, undoubtedly, were mistreated by editors sometime early in their careers) to flood the bird journals' editors with notes from people who know the answers to all those questions in *The Birder's Handbook*. Marty Morton, Alan Brush, Edward Burtt, and Susan Drennan, watch out.

So here is another challenge. Compile your lists of answers. Send them in. Those willing to join me out here on my limb, might even get published. Those not published I will forward to the intrepid trio for inclusion in the Handbook's second edition. Who knows, if we do this well we may turn that last hypothesis around. In any event, we are much in their debt.



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