When Ludlow Griscom dazzled his contemporaries with his bird identification wizardry in the early decades of the 20th century, he was at the same time fathering a generation of bird students whose contributions would change the face of American field ornithology. Early on, he realized that shotguns were not always necessary to resolve vexing identification problems. Convincing his contemporaries took a great deal of original thinking and countless hours of comparing his knowledge of the museum tray with the living species in the field. What could be seen in the field was used and what could not was ignored. The system expanded greatly when he realized that elements of behavior, shape, and posture could also be used as “fieldmarks.” The road was no doubt covered with many hidden ruts and pitfalls, but the process he was applying was little more than taking the time-honored method of keying specimens in the hand and applying that in the field. Keying is deductive and comparative and usually works. Even today, the vast majority of biological identification is conducted by this method. When birders look at a copy of a Peterson field guide or one of its many successors, they are looking at a biological key—a sophisticated key, but nonetheless a key. Quite simply, the modern field guide to birds is the most sophisticated biological key ever produced and, in fairness to other biological disciplines, it is perhaps the easiest to apply because its subjects are so conspicuous. To borrow a comparison from computer technology, modern field guides are “user-friendly” keys; they are the progeny of Griscom’s inventive methods, and they have been refined by the many vessels through which his influence poured.

In the past 40 years, an entire body of literature on field identification has grown to an almost overwhelming size. I have several large file containers full of reprints on field identification (and distribution), and they surely represent only a fragment of what has been published. Bird distribution and identification as a science has largely fallen to amateurs in recent decades, while the professionals have mainly occupied

Today we memorialize Ludlow Griscom for his central role in advancing bird identification in the first half of the 20th century. Griscom constantly looked toward the future, as do the leading figures in modern birding. In this series of birding commentaries—which will continue into the next issue and perhaps beyond—we peer into our crystal ball and try to visualize the future. Cape Cod, Massachusetts, 1940s. Image courtesy of © Mass Audubon.

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themselves with the larger questions of ecology, molecular systematics, behavior, mathematical modeling, population genetics, evolution, and the like. Entire books have been published in recent years that have refined the field identification of specialized groups like seabirds, sandpipers, gulls, hawks, sparrows, and waterfowl, and the trend is continuing. It is well beyond anything that Griscom may have imagined even in his most speculative moments. Griscom believed that certain species groups were too difficult to identify in the field—for example, juvenile Accipiter hawks and female scaup. These identifications are routine today and have been well analyzed, but others have taken their place, often as a result of recent taxonomic change. The era of shotgun ornithology provided the foundation for modern avian taxonomy and systematics derived from specimen collections and was the cornerstone of faunal analysis. And collecting is still a valuable research tool in certain situations. In Europe and North America, however, the avifaunas are well known, and little general collecting is now necessary.

This is particularly true in the case of vagrants. There is a great deal of interest among birders in seeing vagrants today, making collection impractical. It has been tried in a few recent cases, often with such intense repercussions to the collector that the effort was not worth the trouble of obtaining the specimen. Often, more can be learned without collecting the bird. I recall a celebrated case involving a misidentified vagrant on Point Reyes that clearly indicates what can be gained by not collecting a specimen. A bird was found on the Point Reyes Christmas Bird Count in 1978 and through a series of errors was identified as a Smith's Longspur, which at the time would have been a first for California. When it was finally discovered to be an individual of the Asian race of the Sky Lark, a significant number of California birders had already accepted the initial identification of a Smith's Longspur.

This resulted in polarizing the victims of the error into two camps—those who wanted the bird collected and those who did not. Since the bird was in a national park, it was decided that a permit would be issued to trap the bird for examination, but it disappeared before the paperwork could be completed. Subsequently, the bird returned for six consecutive winters to the same field and was studied very carefully (and photographed) by a legion of observers. These observations resulted in the 1983 publication...
of an excellent account of the record (Western Birds 14:113–126) with a significant synthesis of information on the identification, distribution, and taxonomy of Asian larks that will prove very useful to observers dealing with this species in the future. Had the bird been collected, I fear it would have been identified, placed in a specimen drawer, and largely forgotten. The living bird prompted a deeper analysis.

The addition of new species to regional faunas has become the purview of state and provincial records committees. Most U.S. states have records committees that deliberate on the addition or removal of species on their regional lists. Professional ornithologists have largely given over this function to talented and dedicated amateurs, except in the case of the American Ornithologists’ Union Committee on Classification and Nomenclature. It makes decisions on more than addition and removal of species to the North American Check-list. The AOU committee considers a wide variety of taxonomic questions that affect the list through current research and changes in scientific thinking. However, the AOU committee currently has a highly respected birder in its ranks, and the addition of new species to the list is now often based on photographic evidence and descriptions without a specimen. This is a major change in an organization that was nearly always populated by professional ornithologists with Ph.D.s, who nearly always required a specimen before adding any species to the Check-list.

Historically, vagrants were viewed as an accident of nature, a mistake in genetic programming. When the opportunity presented itself, vagrants were collected, later accompanied by a short note. It was assumed that they were of little biological importance. But what we have learned in recent decades is that these nomads can hardly be considered accidents of nature. On the contrary, they are fairly predictable, with patterns of occurrence emerging that could not be deduced by merely collecting specimens here and there. By taking the time to look for vagrants, serious birders began to find (and science was put on notice) that the majority of them occurred at certain times of the year, in certain places, and in numbers that strained the definition of “accidental.” There is a growing body of evidence that suggests we have only touched the tip of the iceberg regarding vagrants. More discovery awaits us. Genetic and stable isotope analyses may eventually reveal more about the population origin of these waifs and open up new avenues of understanding regarding some of the most fundamental mechanisms of evolution, like the “founder effect,” and whether certain populations are pre-adapted to vagrancy.

Documentation of rarities is now becoming dependent on applied technology. The development and widespread use of digital photography, personal computers, and small digital recorders have added a new dimension to providing the supporting details of a rarity. In minutes, images of these birds can be flashed around the world on the internet to obtain the opinions of ornithologists most familiar with the species. A good example was the appearance in 2001 of a Greater Sand-Plover on the central California coast. The species had never been recorded in the western hemisphere, and few North American ornithologists had much field experience with it. The opinions of ornithologists familiar with the species were quickly assessed, and nearly all of them agreed that the bird was a Greater Sand-Plover. The bird was later caught, photographed, and measured. All the evidence compiled indicated that it was indeed the species in question (North American Birds 55:252–257).

It is tempting to divine the future of birding with all the new technology available. To wade into these murky waters is always the first sin of historians because the approach is based not on evidence or tangible data. While aware of these risks, the identification of birds in the future may be relegated to scanning a digital image into a hand-held computer with software capable of synthesizing thousands of identification characteristics and making the ID itself. The resulting identification would be done by software and not by a birder. Facial recognition software already exists, and the identification of many objects in the natural world by this method would not be an
unjustified leap of imagination. This method may be more accurate as well, with the images sent to any number of sources by wireless capability within minutes to any part of the globe. Birders might have enhanced binoculars and scopes that are capable of capturing digital images as they observe a bird, then store or transmit the images to anyone who might have similar equipment to observe them at nearly the same instant. (Binoculars with attached digital cameras are on the market now, but they are not of high quality—yet.)

Computers have done a great deal to change birding, to an extent Ludlow Griscom could never have imagined. They have facilitated communication among birders all over the world in seconds. Consulting someone by letter in the 19th century about a point of biology could take weeks. In the future, sources of information will only get better, allowing more data to be loaded into ever-smaller storage devices. Interrelated databases will allow birders in the future to have all the literature written on the identification of a given species, with photos and museum data instantly available. The parameters of knowledge will expand beyond our imagination. The level of identification will become finer, extending routinely to subspecies and other well-marked populations. Characters that are now used by banders will be increasingly used by birders to identify birds by age and sex because of superior optics and digital cameras.

All birders, if they have been birding long enough, have the experience of a bird “that got away” and “didn’t leave its name,” as Pete Dunne so appropriately put it. I often wonder about birds like these over the course of many years of birding, but these frustrations will decrease steadily as these mysterious little encounters are better documented by newer technology. Fewer will get away without “leaving their names.” Like detectives, digital images and recordings will zero in on their identity even if seen only by a single observer on a single day.

A startling and heady future awaits birding. If we could look 100 years ahead, I don’t think we would recognize birding in the future as what we call birding today. To put this in a perspective that we can all relate to, could you imagine what birding would be like 100 years into the future while standing on the sands of Kittyhawk in 1903 and watching a bird of a different kind take flight? I recall birding with a friend some years back when a bird flashed past the corner of my vision while driving. I did not get a good look at the bird, and I asked my friend, “What was that?” His reply: “It was only a Kestrel.” The thought occurred to me that there may come a time in the not-too-distant future when we will be hitting the brakes and piling out of our cars to look at the wonder of a remaining endangered kestrel, even if we look at it through some very sophisticated equipment. The salient question we may need to ponder 100 years from now is, “Where have all the kestrels gone?”

“Just another American Kestrel”? It’s easy to say that in 2009, but what will birders say in 2109? Bird populations are in tremendous flux right now, and it is safe to say that many species will undergo dramatic shifts in status and distribution in the next 100 years. Kern County, California; January 2007. © Bob Steele.
I recently spent some time looking through my original 1961 edition Peterson western guide, which I acquired in 1967 as an 11-year-old who had been corrupted by a friend into watching birds. This guide was, to most observers, not only The Truth, but a miraculous compendium of information. There were no meaningful competitors until Robbins and colleagues came out with the more user-friendly and continental *Birds of North America* in 1966, with a better version in 1983.

Today, my shelf contains very few broad-spectrum guides that I take into the field. My 1961 Peterson is resting now on the top and little-used shelf, so beat up that I hardly dare open it. I don’t own Robbins’ *Birds of North America* anymore, although I still have Rich Stallcup’s unique commentary on it, *Birds for Real*, which almost serves as a separate free-standing reference. When I go birding in Oregon, I take with me the current National Geographic guide, with its excellent text and steadily improving illustrations. It is the best all-round pocket stuffer, and one copy never leaves my car.

I also take “Big Sibley,” as it is commonly called, which has a more consistent quality of illustration throughout. However, many West Coast observers are frustrated by the lack of illustrations of Asian vagrants, and the text is limited, patchy, and sometimes oddly disconnected from the information that an observer really needs. In order for illustrations to be useful, we need to know what to focus on, and that was the great strength of the Peterson approach. And Big Sibley is also, well, big.

**Resources We Don’t Have**

What does the birding community need today in the way of resources? First, we have to define what the “birding community” is. I am writing about the needs of people whose principal recreation is birding and who try to improve their birding skills over time. This lets out the pure feeder watchers who can get by fine with any basic bird guide—and for whom Sibley, big or little, is probably overkill. It also discounts quasi-birders such as Gambell parlor trolls who simply stay indoors, surreptitiously comparing optics, waiting for word of listable birds found by the real birders out working the boneyards in the rain.

Ned Brinkley’s and Ted Floyd’s new photo-based field guides are certainly worthwhile for their many insights, as are Kenn Kaufman’s user-friendly field guide with its helpful graduated maps and the Stokeses’ guides oriented toward early-phase birders. There are lots of other basic guides out there, including the modern Peterson series, National Geographic regional guides, and so on. But when it comes time to go into the field, most serious U.S. and Canadian birders bring along only one or two guides (generally Nat Geo or Sibley), and sometimes a specialized reference such as one of the shorebird, warbler, or humming guides.

The great new specialty guides such as the gull, pipit, and hummingbird books are splendid, and I would not be without them. Indeed, there now exist *multiple* guides to such charismatic taxa as hummingbirds and gulls, each one with something to offer. And the same is true of older but well-conceived guides such as *Hawks in Flight* by Pete Dunne and coauthors or Rich Stallcup’s...
Ocean Birds of the Nearshore Pacific. Someday, we’ll get a serious reference book on North American flycatchers, the worst current gap.

However, I think what the birding community lacks, in facing this avalanche of overlapping information, is a better resource base for basic birding and for the issues that most birders really face on a daily basis. We can’t lug a sack of books everywhere, and most personal digital assistants (PDAs) are too small to serve as a field reference, even if what we need is on them.

In coming years, we need the following: a good book on birding techniques, a field guide that provides far more illustrations of different plumages of fairly common birds (including hybrids), a guide that includes much better information on migration routes and patterns than any now available, a truly field-friendly bird sound library, an easy unified source for identification articles, and, ideally, a book for North America similar to Ian Lewington and coauthors’ Field Guide to the Rare Birds of Britain and Europe.

**Learning How to Bird**

Birding is best learned by experience, but we need a serious book, or compilation of articles, on birding techniques. What is the best way to bird in tidal areas? How can we locate roost sites? What techniques of seawatching produce the best results under varying conditions? Under what conditions is owling most likely to be successful? What kinds of birding are least affected by midday heat? How should a Christmas Bird Count (CBC) be organized for the best results? When is pishing a bad idea and what species react to different kinds of pishing or hooting?

Birders are increasingly interested in making sense of the different plumages and plumage aspects of birds. Consider the case of subadult Black Rosy-Finches (bottom), especially females. Such individuals, often absent from field guides, can actually be the palest birds in mixed-species flocks of rosy-finches; but note that they usually show relatively dark centers to the body feathers. Another case study involves the Brown-capped Rosy-Finch (top). On the breeding grounds (and in field guide illustrations), the crown feathers have worn down to the “classic” brownish plumage aspect. In winter and early spring, however, many adults show extensive gray in the crown, inviting confusion with Gray-crowned Rosy-Finch.


Subadult male **Black Rosy-Finch**. Some subadults (mainly females?) are paler than shown here. Boulder County, Colorado; April 2008. © Bill Schmoker.
Questions about pishing may sound silly, but I learned from my friend the late Pat Mahnkey in Missouri that Kentucky Warblers come up readily to a very delicate, almost inaudible pish, but usually won’t to the kind of industrial-strength pishing that some birders use across a pond or pasture. Likewise, many birders don’t realize that pishing does work at long distances: I once pished across a vast field on a CBC, watching the far hedgerow through a spotting scope, and it filled with several kinds of sparrows. Combining pishing and owl tooting is effective continent-wide, but this kind of information is not easily found.

There have been some good topical essays throughout the literature, for example, some of Pete Dunne’s work, Joseph Hickey’s older but remarkably good birding advice, David Fix’s “Scanning the Sky” and David Irons and Fix’s “Birding Winter Habitat Microsites” that appeared some time ago in Oregon Birds; but finding this scattered material in multiple sources is not easy. Compiling, assembling, and issuing such a book would be a great gift to thousands of birders. Some of the best bird books contain a certain amount of this information, either presented in trail nuggets scattered throughout the text or in a casual fashion as though All Birders Know This. We don’t know it all, and we’d like to.

**What is Not in Our Books**

We need field guides that show more plumages of common birds, especially off-brand plumages such as “eclipse” ducks, juveniles of almost anything, flight images, funky alcid plumages, late-fall adult sandpipers that stubbornly decline to have a decent molt, and second-summer ducks, gulls, and whatnot that look neither like immatures nor quite like adults. Plumage variation in species such as Savannah Sparrow is not handled well by any major field guide and quite badly by some. California Gull, Least Sandpiper, and Hermit Thrush variation is an underappreciated problem that is rarely illustrated and sometimes not even mentioned. Yet most birders will see these puzzlers far more often than they will genuine vagrants.

Migration patterns and movements are almost universally given little to no attention even in the best field guides, and some of the meager wisps of information that appear are wrong or unintentionally deceptive. The recent National Geographic Complete Birds of North America takes a step toward improving this situation, but it isn’t field-friendly, and we need a far more comprehensive source for accurate data on movements and their timing. Kaufman's guide is one of the better ones because of its generally accurate two-density maps, and Paul Lehman has done some very good writing on this subject in several venues. Those of us who plan our birding trips to find vagrants (or even regular species) often lack knowledge of the underlying patterns of bird movements. Only through many years of experience or a very great volume of reading can we fill this gap.

We need a good-quality compendium of the major identification articles that have appeared in Birding magazine and elsewhere. For example, we would all benefit from an easy-to-use central repository of good-quality downloadable versions of identification articles. The excellent series on gulls, thrushes, flycatchers, and other groups that have appeared in Birding should not just be shelf paper in old magazines. The recent appearance on the ABA website of ID articles from Birding is a great start.

**We Need Useful Bird Sounds**

We need easily available bird-sound recordings that focus on comparing many call notes, not just songs that are heard two months out of the year in a small portion of the area in which most observers encounter the birds. The quality of recordings these days is good, but the whole bird-sound marketing apparatus is 20 years behind the needs of serious birders. Stop giving us the same old songs. We want...
chip notes and flight calls.

We also need commercial sound recordings to be easily editable to meet local needs. Ideally, I need to have with me in the field the bird sounds that are most likely to be of interest in that time and place, not cluttered up with hundreds that I don't need in a rigid format. I can make such custom compilations myself and mount them on an iPod, but the process is slow and clunky. It shouldn't be. Bird-sound recordings ought to be issued in a format that allows users to flag and reassemble the sounds into modular, custom packets for personal use. I need warbler and sparrow call notes a lot more than seabird mating calls, except at Halloween, when only a Wedge-tailed Shearwater will really do.

**Ideas for the Market**

The market would support a modern "handbook" to bird identification that focused on problem species and fell somewhere between the standard field guides and Peter Pyle’s fascinating but brutally detailed two-volume *Identification Guide to North American Birds*. Examples of successful books along this line in the past include Kaufman’s *Advanced Birding*, Thomas Sadler Roberts’ *Manual of the Birds of Minnesota*, Kevin Zimmer’s *The Western Bird Watcher*, and the British Trust for Ornithology’s *Frontiers of Bird Identification*. Kaufman is threatening to update his *Advanced* guide—an event worthy of anticipation.

We have seen an enormous increase in the availability of family studies, going back to such revelations as Peter Grant’s first book on gulls, Peter Harrison’s *Seabirds*, and Steve Madge and Hillary Burns’ *Waterfowl*. Some of these had distinguished predecessors, for example, Robert Cushman Murphy’s two-volume *Oceanic Birds of South America* and waterfowl references by Frank Bellrose and F. H. Kortright. Peter Hayman and coauthors’ *Shorebirds* has now been succeeded for North America by major references offered by both Dennis Paulson and Michael O’Brien and coauthors. Grant’s first *Gulls* (preceded by Jonathan Dwight’s baseline 1925 compilation) has recently had two massive success-
sors covering the northern (Klaus M. Olsen and Hans Larsson) and western (Steve Howell and Jon Dunn) hemispheres. Now, there are whole series of family references pouring from publishers.

This is all good to have, and many of these books bend my shelves, but for the most part they are desk references, not field guides. We often hear that if we are not sure what a bird is, we should draw pictures of it, noting all details, and take lots of photos. Good ideas, and sometimes even feasible to do. However, publishers of field guides should consider making specialized on-demand options available. These processes are currently expensive, but could be modularized so that if I want to get a “basic book” or an “advanced book,” I can do that when I order. That is, supplemental material with more plumages, more migration information, even information on patterns of vagrancy or diet, could be available in standard “packages” for an additional fee, so I could get the basic section on hawks and

Digital photography is revolutionizing the way we bird. Thousands of us routinely exchange and discuss high-resolution digital images via the internet, and in the process we are learning and discovering a great deal about molts and plumages. When a colorful Long-billed Dowitcher (right) was spotted in mid-October, birders in the field initially suspected that it was an individual with retained alternate plumage; instead, digital photographs revealed that it was a bird in basic plumage but with an alternate plumage aspect, perhaps the result of a metabolic disorder that triggered carotenoid pigment production during the prebasic molt. And when a Cooper’s Hawk (above) with both adult (bluish) and juvenal (brown) tail feathers was discovered, birders initially concluded that the bird was beginning its prebasic molt; that possibility was ruled out by the date of the photo, however, and it was eventually determined that the young bird had lost a feather in a mishap and then replaced it prematurely with an adult-type feather.

Juvenile Cooper’s Hawk with adult plumage aspect.
the advanced section on shorebirds if I wanted to, in the same book. I say “book” because I want a customized field guide, from which I can delete or minimize species that I know well and expand those for which I want more information.

It is probably impractical to expect such a modular system, but one innovation used by the fifth edition of the National Geographic guide is to have relatively small illustrations of mega-rarities in the back of the book. This is a wonderful concept done exactly backwards. We don’t need small pictures of rarities and hard-to-identify birds. Those should be the big pictures. Make the easy birds small. Instead of showing male and female ducks the same size, stick all the simple-to-identify males on one page, half the usual size. Then you’d have more space for the problem plumages. David Sibley anticipates this approach with his introductory material for each taxonomic group, showing standardized thumbnail images of each species.

The same approach could be used for many groups, including most of the warblers, tanagers, grebes, and so on. Without increasing the size of the book, you’d have a far more useful field guide that could be carried as a true field reference by experienced observers. Killian Mullarney and coauthors went halfway down this road in their excellent, field-size Birds of Europe, by making all of the illustrations smaller than usual. I find that having all of the illustrations (and the text) small is a bit inconvenient, but having so many plumages available is splendid.

Most of the obstacles to a better world of bird publications can be overcome if birders can work with a production professional to produce the reference material we want. That is how advances such as Bausch and Lomb Elite binoculars came about, leading a wave of change in optics. Such books as the original National Geographic guide had some similar underpinnings.

Right now, we are overwhelmed with guides for beginners and specialized family references, many of which are good, but we lack truly advanced field guides, modern handbooks, birder-friendly sound recordings, and the ability to customize. There are enough serious birders out there to affect the market by insisting on what we really want, rather than by settling for what publishers decide to produce. Let’s get to it.

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The future of birding? What a portentous topic for these commentaries. I hope the future of birding will be that we learn not to take ourselves too seriously and that we continue to have fun watching birds. But will that be the case? Or are we too serious?

Without wanting to suggest a greater meaning for birding than some may already give it, the future of birding (worldwide, not just in North America) might be linked to the future of our human life on the planet. This means that everybody, and I mean everybody, will become interested in birds—will recognize that birds collectively represent a canary in the coal mine we call Earth. We will work to reduce human population pressure and human consumption, and we will work to preserve ecosystems, not just habitats, so that birds, and with them humans and all other species, will continue to lead a healthy existence into the foreseeable future. Well, it could happen. Or maybe short-sighted politicians and businessmen will continue to rape and pillage the planet, our savings, and our emotional well-being in the name of God and the almighty dollar, and a post-human historian will be able to say of our species that they all died happily ever after their near-life experience. And so we may earn Roger Waters’ prophetic epitaph, “The species has amused itself to death.”

And how does one define the future, other than not being the present or the past? Are we talking one hundred years’ time? A thousand? Try to imagine what “birding” was like one hundred years ago, and how people then could never have dreamed of what it might be like today. We have access to great binoculars, cars, a wealth of literature, planes, computers, digital cameras…

It’s hard to look at changes in birding without immediately thinking of changes in technology, and how they influence our pursuit of the hobby, the avocation, the profession, the obsession. I re-read a recent (2007) introspective in North American Birds (62:14–30) on the changing seasons, by guest editors David Irons and David Fix. They described how birding was when they (and I) started, and how it is changing rapidly, most notably courtesy of the digital technology revolution and the ubiquitous internet—the net that interconnects us all?

These days I see a trend among bird records committees to expect good digital photos of every rare bird reported. Consequently, we are entering what I term the enlightened dark ages, led by our very own ABA Checklist Committee. Today, records that are “just” sight records are being relegated almost to the land of hearsay. No amount of careful note-taking and detailed sketching will suffice to counter this stigma, and an entire period of post-specimen and pre-digital field ornithology will be relegated to never-never land. Paradoxically, most if not all bird records committees were established to evaluate sight reports, which are valid records in their own right. I note that the seventh edition of the ABA Checklist (2008) introduces a subtle but insidious distinction between reports (or sight reports) and records (supported by photos, specimens, etc.). How can we argue with such noble, conservative, reason-based thinking? The same?
sort of thinking that has pushed us into our present-day economic (and social?) meltdown? I guess it’s just part of the pendulum swing of philosophy. Anyhow, records committees may not close the gap that some have perceived between birders and scientists. Rather, they may widen it or simply create a new gap.

But now, close your eyes, think back to what birding was like even five years ago, or ten, 20, 30 or more, if you’ve been birding that long. Could you have imagined today’s instant communication systems? Digital photography? How about “phone-scoped” photos? Back in the day, I was happy enough to have a pair of binoculars that were in alignment and an opposable thumb to hitchhike; I looked for birds that had been found days ago but news of which had only just reached me. I’ll confess right now that my imagination isn’t up to projecting what things could be like in even ten years’ time, let alone 20 or more. Flying cars? Binoculars that audio-record and analyze crossbill flight calls, then tell you what species you just saw? DNA-sensing optics? My guess is

**Fig. 2.** Question: Relative to the bird in Fig. 1, does the narrower white rump band and more-advanced wing molt of this Band-rumped Storm-Petrel mean it’s a different species, or might this simply reflect individual variation related to factors such as age or breeding status (such as a non-breeding bird molting earlier than a successful breeder)? **Answer:** Unknown. Off Cape Hatteras, North Carolina, 23 May 2007. © Steve N. G. Howell.

**Fig. 3.** Question: Is this fresh-plumaged Band-rumped Storm-Petrel a juvenile that has fledged relatively recently from a winter-breeding population or might it be an older bird that has recently completed wing molt, and thus perhaps come from a summer-breeding population? **Answer:** Unknown. Off Cape Hatteras, North Carolina, 23 May 2007. © Steve N. G. Howell.
that other invitees to this forum will wax on about technology, perhaps both pro and con, and I suspect they will be better versed in it. I admit that I benefit from technology, such as being able to compare wing shapes on storm-petrels shown nicely in digital images. But there’s more to life than high-speed internet and texting—honest, or have you forgotten?

The future may also bring unreasonable expectations, and thus disappointment—if we let it. It’s the right of each and every one of us to dream, but dreams are just that. Yet I see people new to birding come to it with unrealistic ideas based on their viewing of amazing wildlife documentaries, internet videos, and online photos. They expect to see exceptional things all the time, and thus feel disappointed when they don’t find a rare bird every time they go out. But exceptional things are, well, exceptional, and rare birds are, well, rare. So don’t buy into the media hype. As Mark Twain once said, there are laws to protect the freedom of the press, but no laws worth anything to protect the people from the media. Just recognize that half of your time in the field will be below average—it’s simple statistics.

Back to the semi-foreseeable future. Overall, I suspect it will be much the same as it is now. Humans as a species will continue to be amazed and inspired by birds, to enjoy the simple pleasures of watching these feathered miracles go about their lives as they molt, migrate, sing, breed, eat, and are eaten. We may, we should, learn more about them—about the reasons for their changing distributions, about how migration works, about what triggers molt, and perhaps even about how to identify four species of Band-rumped Storm-Petrel at sea. And we may even develop some humble, simple understanding of how the oceans “work” and of terrestrial ecology. Some people may say we know these things now, but I don’t think we’re even close. So, the scientists among us will revel in the potential for greater refinement of our predictions, but for better or worse, we may never really understand the life of birds. I maintain that if life were simple enough for us to understand, we’d be too simple to understand it. The shades of gray that represent our grasp of the natural world may become darker and lighter, but they will never become black and white.

This isn’t a negative appraisal, at least in my mind. I find solace in believing that the future will always hold the unknown, that there will always be the potential for discovery, for asking questions that must have answers—but answers that may not be knowable. If you knew exactly what you were going to see before you went out birding, would that be any fun? Technology or no, birding can be a challenging intellectual pursuit, a listing game, or an escape from stress in our increasingly stressful world. And birding has the potential to lead you into broader arenas such as habitat conservation, which also means human conservation.

Humans are all different. What we each derive from birding—and what people not yet born will derive from birding—differs and will differ among each and every one of us. But as Kenn Kaufman once said, a good birder is somebody who enjoys birding, regardless of that person’s perceived level of expertise or experience. Although the immediate economic future doesn’t sound like much fun, maybe that’s more reason to get out and look at birds. Step back from the present and embrace the future, and do so out in the field. This essay was written in the past; the future is you who are reading this. Get out birding, get some sun on your skin, some fresh air in your lungs, some birdsong in your ears, some wing-bars and rump-patches in your eyes. As my friend Keith Hansen says, if I don’t see you in the future, I’ll see you in the pasture.