Williamson's Sapsucker, Cordilleran Flycatcher, and other long-distance vagrants at a Long Island, New York stopover site

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ABSTRACT

Six taxa new to—variously—New York, the East Coast, and eastern North America are described and illustrated from Fire Island, Long Island, New York. Williamson's Sapsucker, Cordilleran Flycatcher, Cassin's Vireo, Western Warbling-Vireo, Sonora Yellowthroat, and Pink-sided Junco were captured and documented during a 1995-2001 mist-netting study examining the ecological relationships among migratory birds, Deer Ticks, and Lyme Disease. Two earlier Cassin's Vireo specimens overlooked by nearly all authors—the first for New Jersey and New York, respectively—are also illustrated, as is an earlier Western Warbling-Vireo from Fire Island. Identification criteria are discussed at length for all taxa, and the current status of all six as vagrants within North America is summarized. Finally, the importance of favorable sites along the immediate coastline in the Northeast (and by extension, in the remainder of the United States and Canada) for spring vagrants is considered, along with the implications of avian vagrancy patterns for tick dissemination.

Keywords: vagrancy, Fire Island, Williamson's Sapsucker, Cordilleran Flycatcher, Cassin's Vireo, Western Warbling-Vireo, Sonora Yellowthroat, Pink-sided Junco, Lyme Disease, Deer Ticks.

INTRODUCTION

Shoreline locations, especially islands and promontories, are well-known for attracting and concentrating transcontinental vagrants on both Atlantic and Pacific coasts (e.g., DeSante and Ainley 1980, McLaren 1981, Sykes 1986, Veit and Petersen 1993). On Long Island, New York, the 140-km barrier island series extending from Southampton, Suffolk County, west to Coney Island in New York City has long been known as a focus for vagrant landbirds from interior and far western North America (e.g., Cruickshank 1942; Buckley 1959), and the longest in the chain, Fire Island, has proven especially productive once easy vehicular access was attained in 1964 (Buckley 1974).

Fire Island is a narrow, 53-km barrier island separating Great South Bay and the mainland of Long Island from the Atlantic Ocean (Figure 1). At the extreme west end of Fire Island National Seashore (8 km east of Fire Island Inlet and 90 km east-northeast of New York City), is the area known as the Lighthouse Tract, a 65-ha section of natural vegetation where the 175-year-old Fire Island Lighthouse stands. There, Fire Island narrows to 300 m from bay to ocean, with low dune vegetation oceanward, and scattered native Pitch Pine (*Pinus rigida*) groves alternating with mixed native deciduous shrub-thickets bayward. Major plant species in the deciduous thickets include Bayberry (*Myrica pensylvanica*), Low Beach Plum (*Prunus maritima*), Highbush Blueberry (*Vaccinium corymbosum*), Chokeberry (*Aronia arbutifolia*), American Holly (*Ilex opaca*), Poison Ivy (*Toxicodendron radicans*), and Catbrier (*Smilax rotundifolia*). On Fire Island, most landbirds migrate east to west (i.e., in a southwesterly direction) in both spring and fall and are concentrated in woody vegetation along the island's north side, bordering Great South Bay.

Within the Lighthouse Tract, two mistnetting sites one km apart were established and operated from 1995 until 2001, replicating similar operations from 1969 to 1973. Sometime between these periods, large numbers of White-tailed Deer (*Odocoileus virginianus*) moved into the Lighthouse Tract. Their unfettered movements would have precluded use of mistnets, so two deer-proof exclosures (Figure 2) were established at the old 1969–1973 banding sites: one of 0.9 ha surrounding a Pitch Pine grove west of the lighthouse, and one of 1.2 ha surrounding a section of maritime shrub-thicket east of the lighthouse. In the pine grove, three parallel net lanes 30 m apart were oriented perpendicular to the long axis of Fire Island, hence also perpendicular to the route of travel of most migrating birds. Up to 14 nylon mistnets, 12 m long, 3 m high, with 4 shelves and

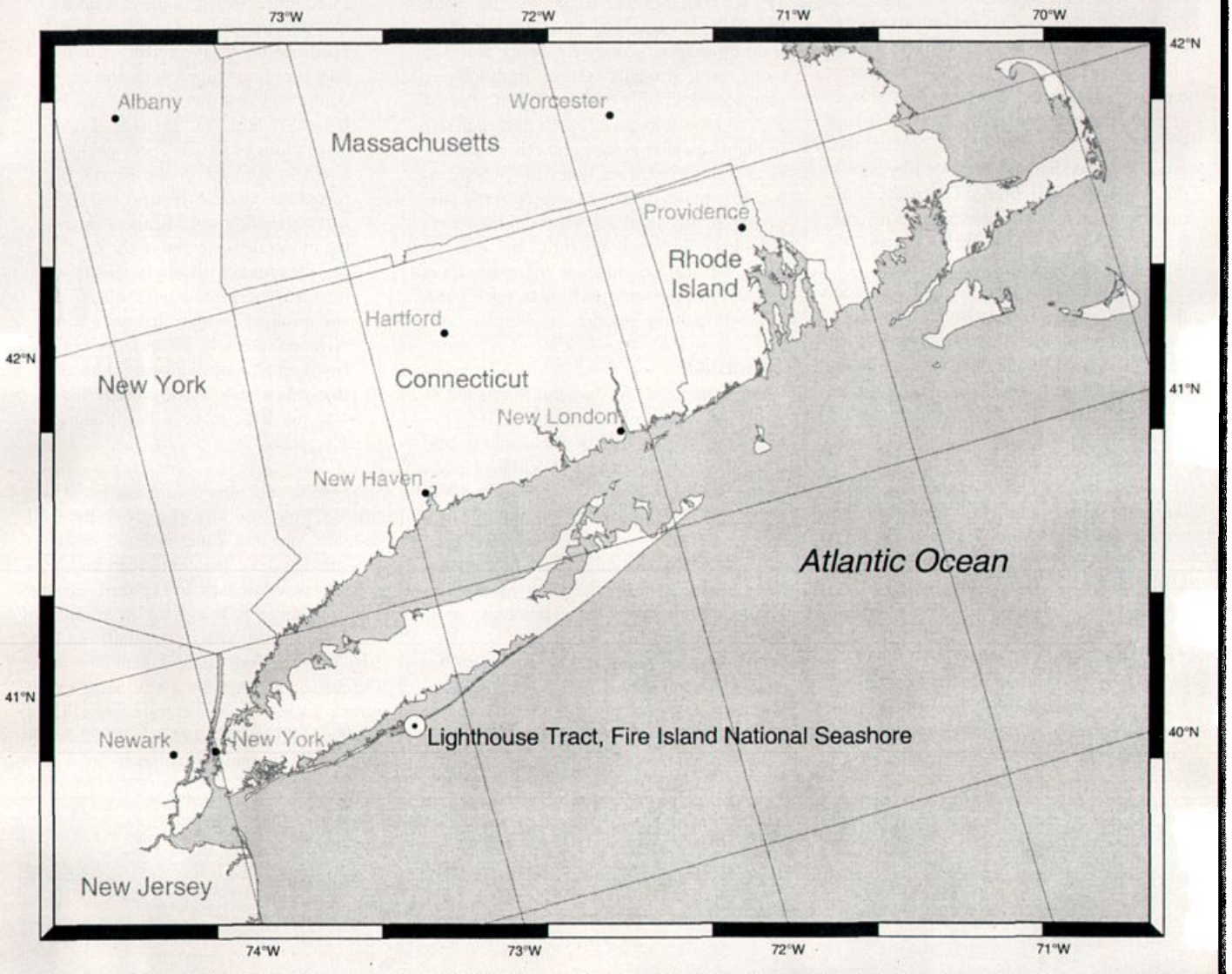

Figure 1. Position of the Lighthouse Tract on Fire Island, Suffolk County, Long Island, New York, relative to other coastal locations in the northeastern United States.

36 mm mesh, were placed on semi-permanent poles in three parallel lanes in the pine grove; in the shrub-thicket, a single 16-net, bay-to-ocean netlane was similarly emplaced.

In the course of banding operations between September 1995 and November 2001, in a large study examining the role of birds in the transmission of Deer Ticks (*Ixodes scapularis/dammini*) and the Lyme Disease spirochete *Borrelia burgdorferi* (Mitra et al. in review a, in review b), about 30,000 birds were handled. As in earlier work at this same site (Buckley 1974), several unexpected long-distance vagrants were captured, some of them extremely rare or previously unknown in New York, on the Atlantic Coast, or even in eastern North America. Unless otherwise stated, birds reported herein were netted by SSM; wing measurements were unflattened (=wing chord), and weights were taken with an Ohaus electronic balance sensitive to 0.1 gm.

WILLIAMSON'S SAPSUCKER

Sphyrapicus thyroideus

• Field data

AHY (after hatching year; not juvenile) female, 22 June 1996, in the pine grove (Figures 3–4). Biometrics: wing 135.2 mm, tail 93.5 mm; tarsus 22.4 mm; nostril to bill tip 16.9 mm; width at nostril 6.9 mm; depth at nostril 6.6 mm; weight 46.5 g. Belly skin completely bare, as in nonvascularized brood-patch, this condition extending anteriorly to furcula; orbital ring grayish black; no evident molt or especially worn feathers; plumage and blunt (not tapered) rectrices aged it as AHY.

• Discussion

Identification, sex, and age (as non-juvenile) of this individual were straightforward (confirmed by comparison of photos to skins in the American Museum of Natural History [AMNH] shortly afterward), but its possible subspecific origin is of interest. Two races have been proposed (Swarth 1917): nominate *thyroideus* from south-central British Columbia south through the Cascades into Baja California, and *nataliae* from Idaho and western Montana (formerly southeastern British Columbia) south through the Rockies into Arizona and New Mexico. Differences between subspecies are slight, involving only a smaller, shorter bill in *nataliae* (Raitt 1960; R.W. Dickerman, pers. comm.); consequently, many recent authorities (e.g., Browning *in* Pyle 1997a) regard *nataliae* as only the end of a cline. Nonetheless, Raitt (1960) notes that *nataliae* is more migratory than *thyroideus*, and indeed, the type specimen of *nataliae* came from Mexico. Davis (1962) analyzed the southernmost eight records of Williamson's Sapsucker he was aware of, finding that six were females, paralleling a range-edge sexual asymmetry in the other three

North American sapsuckers, In any case, Rocky Mountain breeders are known to wander and are closest to New York, so should one recognize *nataliae*, that is the nearest breeding subspecies. Moreover, on the basis of bill length (16.9 mm), the Fire Island female resembles *nataliae*: bills of nine non-juvenile female *nataliae* measured by SSM at the AMNH ranged from 17.0 to 20.4 mm (mean=18.3 mm), whereas four non-juvenile female *thyroideus* ranged from 20.5 to 21.2 mm (mean=20.9 mm).

This is the first Williamson's Sapsucker for the East Coast and thus also for New York. Closest previous occurrences (one each) have been in central Illinois, central Minnesota, and southwestern Louisiana (A.O.U. 1998). Its occurrence in New York in the third week in June was astonishing, but recently, Kansas recorded its first (Grzybowski 2001) and Oklahoma its second (Grzybowski 2000), both also on seemingly early dates (23 September and 18 September, respectively).

CORDILLERAN FLYCATCHER

Empidonax occidentalis

• Field data

SY (second year; = first alternate) male (see below), 14–16 September 1995, in the pine grove (Figures 5–6). Biometrics: wing 70.0 mm; tail 52.5 mm; culmen 8.2 mm; weight 10.7 g. Primaries and secondaries distinctly brownish, not blackish; thin, white eyering, teardrop-shaped posteriorly; wing and tail worn, bird generally not in fresh-looking plumage; skull fully ossified. When released after capture, it frequently gave thin, high *seet* in flight and after landing; no other vocalizations heard. Netted six times 14–16 September, first by R. P. Moore (who correctly suspected it was in the "Western Flycatcher" complex) and subsequently by PAB, it remained near one net-lane the entire time, usually foraging and perching in pitch pines within 2 m of the ground.

• Discussion

The best methods for in-hand separation of silent individuals of the recently-split (Johnson and Marten 1988) Pacific-slope and Cordilleran Flycatchers fail ≥30% of cases even when sex is known (Johnson 1980, Pyle 1997b). Moreover, at the time of capture we were unaware of measurements used in Pyle (1997b) that might have helped, so it seemed most unlikely this individuals would ever be aged more precisely or its species determined.

Nonetheless, photographs and measurements were forwarded to the late Ned Johnson, who was not only able to age it but to determine its species. His reply (Johnson, *in litt.*) is excerpted as follows:

> "Your bird is clearly in the *E. occidentalis-difficilis* group as you surmised. Furthermore, it is …a male *occidentalis* based on wing length, the only datum you sent that is diagnostic. It is [an SY] bird…on the basis of two generations of tertials...both old and new…In contrast to the tertials of mixed age, all other remiges and rectrices are old, juvenal feathers showing moderate wear, and in the rectrices, the rounded tips characteristic of the first generation of tail feathers…I am absolutely certain that your bird is [approximately 15 months old] based on plumage, and am confident that it is a male based on size. It is way too large to be a Pacific-slope Flycatcher."

These results were surprising for several reasons. First, it is almost a given that long-distance vagrants along oceanic coasts in autumn are HYs (hatching-year birds), so finding an adult was unexpected. Second, mid-September is somewhat in advance of the peak of most passerine vagrants on Long Island, which are more commonly found October and November (with some exceptions), suggesting another nonbreeder. Third, while Cordilleran Flycatcher breeds throughout the Rockies and thus much closer than

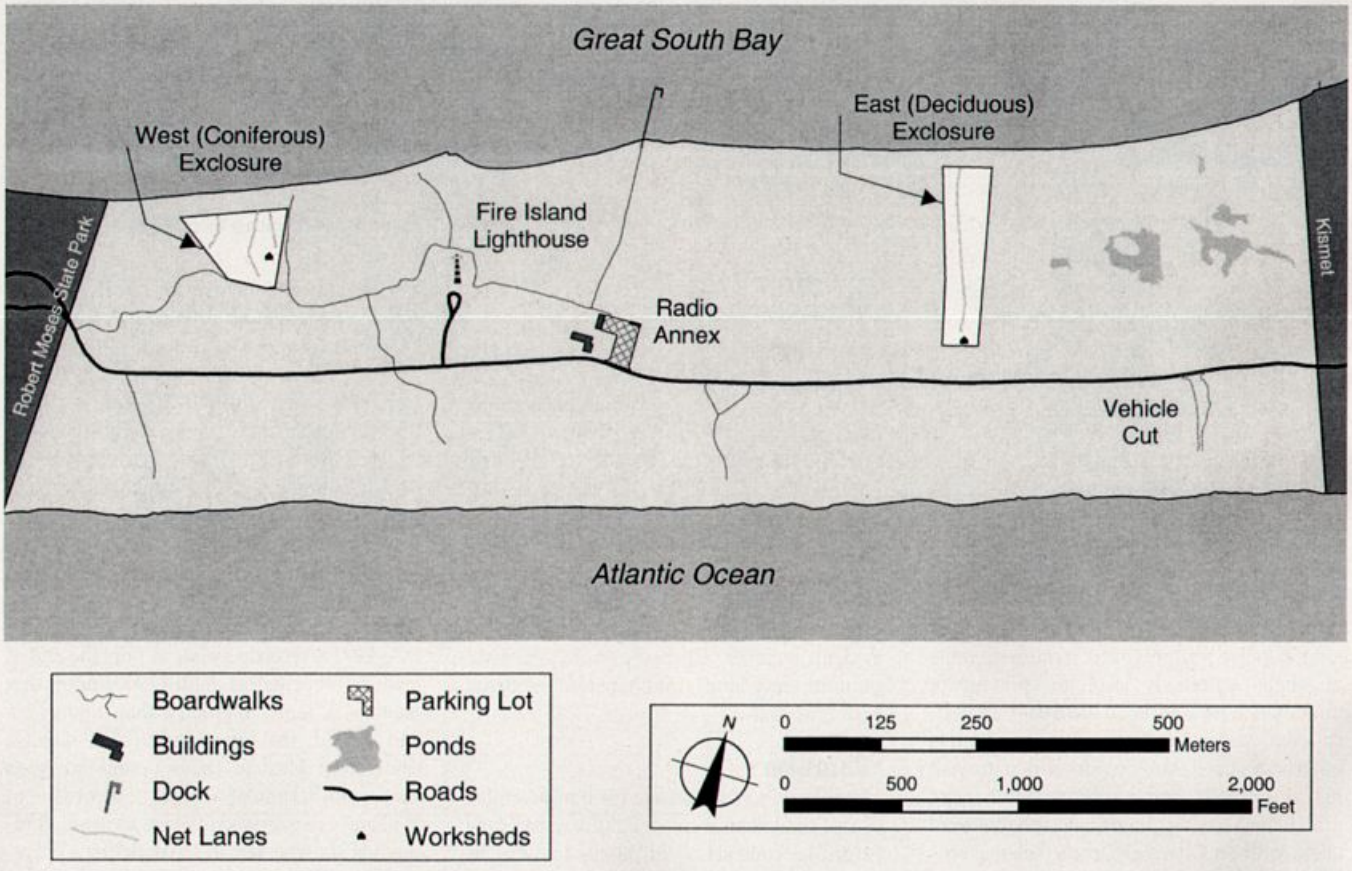

Figure 2. Map of the Fire Island Lighthouse Tract showing the two deer-proof exclosures and the mistnet lanes they enclosed.

the well-named Pacific-slope Flycatcher (which does breed farther north but only along the immediate Pacific coast), to date the handful of non-specimen vagrant "Western Flycatchers" in the East that have been identified to species by voice have been claimed as only Pacific-slope.

According to the American Ornithologists' Union's *Check-list* (1998), Pacific-slope Flycatcher breeds from southeastern Alaska and central British Columbia south to southwestern California (generally west of the Sierras) to the mountains of Baja California and winters from southern California (rarely), southern Baja, and northwestern Mexico south to the Isthmus of Tehuantepec in Oaxaca, essentially in a narrow strip along the Pacific Coast. In contrast, Cordilleran is given as breeding from west-central Alberta, northern Idaho, central Montana, Wyoming, and western South Dakota south to northeastern California, central Nevada, and southeastern Arizona, and wintering in Mexican mountains south to Oaxaca. Note that the breeding range for Cordilleran in Sibley (2000) ends at central Idaho and the extreme southern edge of Montana; Johnson (1980) correctly has it breeding east to the Chisos Mountains in west Texas; and the Texas Checklist (Texas Ornithological Society 1995) indicates breeding in the Chisos, Davis, and Guadeloupe Mountains.

Pacific-slope has been claimed by vocalizations as a vagrant to Pennsylvania (twice: McWilliams and Brauning 2000), and North Carolina (Davis 2000), and has been collected in fall in Louisiana at least three times (S. Cardiff, D. Dittmann, and D. Muth, *in litt.*). In contrast, Cordilleran Flycatcher prior to this record was known in the East only by two specimens from Louisiana. In addition, indeterminate or silent "Western Flycatchers" have been identified in fall/winter in Iowa (Johnson 1994), New Jersey (Walsh et al. 1999), Pennsylvania (Burgiel et al. 2002), Virginia (Scott and Cutler 1974 [not reviewed], Blom et al. 1994), and Alabama (Duncan and Duncan 2003).

Vocalizations of the North Carolina and two of the three Pennsylvania "Westerns" were recorded and assayed as "typical" of Pacific-slope and not Cordilleran. Yet this identification might not be as unequivocal as believed, given the debate on the Internet for almost 10 years about overlapping and non-exclusive calls of both species and claims that individuals have been heard giving calls of both species in various breeding locations. However, although we are unaware of any published studies confirming these beliefs, we also suspect that the complete vocal repertories of both sexes of both taxa remain to be elucidated. For example, it is believed that female Pacific-slopes give a diagnostic, high thin *seet* (cf. Sibley 2000), yet the Long Island individual, a male Cordilleran, gave the same kind of vocalization, which according to Johnson (*in litt.*) "is given by both sexes of both species in alarm."

Figures 3, 4. AHY female Williamson's Sapsucker, Fire Island Lighthouse, Suffolk County, New York, 22 June 1996. *Photographs by S. S. Mitra.*

As far as we are aware, the five Louisiana specimens (three Pacific-Slope and two Cordilleran) and the New York Cordilleran represent the only records of "Western" Flycatchers in eastern North America whose specific identities are supported by direct examination and morphological evidence.

CASSIN'S VIREO

Vireo cassinii

• Field data

HY (hatching year; = first-basic), sex unknown, 19 October 2001, in the pine grove (Figures 7–13). Biometrics: wing 71.0 mm; tail 51.5 mm; primary projection 17.0 mm; weight 14.9 gm; skull unossified; fat class O. A gray-green vireo dorsally, with throat and upper breast washed off-white (in stark contrast to six HY Blue-headeds captured the same day whose breasts were glistening white); smudged auriculars blending into off-white throat (again in striking contrast to sharply delineated cheeks contrasting with the bright white throats of the day's Blue-headeds); dark loral stripe gray and indistinct; flanks washed yellow-olive; undertail coverts washed yellow; nape, auriculars, and crown very slightly grayer than back, but all dark portions of head with obvious greenish tones (wholly unlike cold slaty-blue tones of Blue-headeds); almost no color difference/contrast between head and back; narrow white edging to outer vanes of outermost rectrices, but no internal white in either vanes.

• Discussion

Separation of Cassin's from Blue-headed can at times be difficult. Extremely bright Cassin's can overlap extremely dull Blue-headeds, and there are individuals that cannot be safely assigned to either species in the field (and perhaps even as specimens; Heindel 1996). Fortunately, in the hand, the immediately obvious off-white breast, smudged auriculars, and uniformly grayish-olive head and back fell well into the Cassin's range. Its off-white breast does not show especially well in the photographs, but this is an artifact of exposure, as the off-white breast was explicitly noted in the original written description. In examining skins at the AMNH, we noted that circa 75% of *cassinii* show off-white underparts—a condition shared by only two of 50 specimens labeled *solitarius* from New York, New Jersey, and Maryland. Furthermore, one of these two off-white "*solitarius*" is a skin from the Lawrence Collection unlabeled as to date or location, and the other is New Jersey's first *cassinii* (see below). Additional investigation revealed that while on balance rectrix edging on Blue-headeds is broader (thus

Figures 5, 6. SY male Cordilleran Flycatcher, Fire Island Lighthouse, Suffolk County, New York, 16 September 1995. *Photographs by P. A. Buckley.*

appearing "whiter") than on Cassin's, a more revealing feature was the presence of upside-down V-shaped notches at the tip of the inner vanes of the outermost rectrix in many/most Blue-headeds—formed by expansion of the white edging on the inner webs (Figure 11). This notch would also emphasize the effect of more white in tail feathers, especially when flashed. Well-developed examples of this feature are lacking among AMNH Cassin's specimens, so we suggest that its presence may be sufficient to identify a suspect bird as a Blue-headed, although its absence (as in the Fire Island vireo) is only highly suggestive of Cassin's.

While there has been considerable recent discussion on the Internet about field separation of Cassin's and Blue-headed Vireos, the only published paper is by Matt Heindel (1996). The points noted on the Fire Island bird are in line with his suggested field marks, and after we sent him the photographs for comment, he concurred with our identification as Cassin's. The photographs clearly document the absence of contrast between auricular and throat—regarded by Heindel (*in litt.*) as "the single best mark" separating the species—and the absence of contrast between crown and back. Measurements are of little use in the identification of skins or birds in the hand, owing to appreciable overlap in nearly all mensural characters throughout the "Solitary Vireo" complex. Multivariate analyses might prove helpful but have not yet been done.

Cassin's Vireo breeds along the Pacific Coast from California through Oregon and Washington to central British Columbia, thence east to southwestern Alberta and south to western Montana and central Idaho, and winters from extreme southwestern United States (California, Arizona) south through the mountains to Guatemala. It is known in migration from Wyoming, Colorado, and New Mexico but is rare in western Texas. Fall vagrants are known from Louisiana; one was photographed at Cape Ann, Massachusetts in mid-November, and another was netted along the St. Lawrence in Québec in September; there are also three spring sight records of birds believed to be Cassin's: South Burlington, Vermont (Perkins 1997), plus Cap Tourmente, Québec, and Chicago, Illinois (Heindel 1996). Sibley (2000) indicates additional vagrants from Alaska, Kansas, and Oklahoma.

Phillips (1991: 191) reported without details or comment the occurrence of two vagrant Cassin's Vireo specimens in the AMNH, one from New Jersey and one from New York. These records have been overlooked by or unknown to most authors; once located, we thus examined them closely (Figures 12–13). Each bore the label notation "*cassinii ARP 79*" in Phillips's handwriting.

The New York skin (AMNH 763822) Phillips called a "mummy." It is a badly flattened and desiccated HY found 27 December 1958 at Great Neck, Nassau County, Long Island. It would appear to have been dead for some time when found; it also seems dirty, with little or no yellow visible anywhere and might profit from careful washing. Judging by its dull grayish head, dull greenish-gray back and rump, typically blurred auricular/throat border, and absence of large internal white markings on the inner web of r6, the identification as Cassin's is warranted. (The bird's breast is flattened and feathers are missing, so color cannot be reliably determined.) The New Jersey skin (AMNH 417404, 19 November 1933, Barnegat, Ocean County) is in excellent condition and is a classic HY, with off-white breast and belly, dull gray head, dull greenish-gray back and rump, and no internal white on r6. The label says female, but Phillips has added "*imm. male?*". The Barnegat specimen is New Jersey's first Cassin's Vireo, and the Great Neck and Fire Island birds represent New York's first and second, respectively. It is likely that as attention is paid to late or odd-looking supposed Blue-headed Vireos, Cassin's will take its place among expected vagrants at appropriate East Coast sites.

WESTERN WARBLING-VIREO

Vireo swainsonii

• Field data

HY (= first-basic), sex unknown, 29 September 1998, in the pine grove (Figures 14–15). Biometrics: wing 69.2 mm; tail 50.3 mm; exposed culmen 8.3 mm, nostril to bill tip 7.1 mm, width at nostril 3.5 mm, depth at nostril 3.4 mm; tarsus 18.3 mm; p10 minus primary coverts 3.0 mm (right), 2.8 mm (left); primary projection 13.4 mm. Attention immediately attracted by buffy wingbar (greater secondary coverts) and very small bill; dark upper mandible with pale horn tomium; dull grey crown contrasting with greener back/rump; flanks washed olive; retained tertials and greater coverts.

• Discussion

Warbling-vireos are uncommon enough in fall on East Coast barrier beaches to warrant close inspection. This individual's tiny bill and buffy wingbars attracted attention following the paper by Voelker and Rohwer (1998) remarking that the presence of wingbars on any fall warbling-vireo should immediately suggest Western.

We follow Sibley and Monroe (1990) and Phillips (1991) in treating North American warbling-vireos as comprising two biological species, a split based on differences in genetics (Murray et al. 1994), song, (J. Barlow and B. McGillivray, unpubl.), and ecology (differing prebasic molts; breeding habitat preferences; wintering areas; and responses to cowbird parasitism); English names for the two taxa come from the Seventh A.O.U. *Checklist*. Unpublished studies by J. Barlow and others report reproductive isolation where Eastern and Western Warbling-Vireos meet in Alberta, although Phillips (1991)—based on single Alberta and Texas specimens he reported without morphological information—claimed that intergradation or

hybridization was occurring somewhere. Full details proposing two species of North American warbling-vireos still await formal publication.

Phillips (1991) recognized four subspecies in Western Warbling-Vireo (see also Gardali and Ballard 2000), but only the two migratory races, *swainsonii* (Pacific coast and Great Basin breeders) and *brewsteri* (Rocky Mountain breeders) were considered possibilities as vagrants to New York. *Swainsonii* occupies a Pacific coastal range analogous to that of Pacific-slope Flycatcher and Cassin's Vireo, whereas *brewsteri*'s Rocky Mountain range parallels those of Plumbeous Vireo (*V. plumbeus*) and Cordilleran Flycatcher.

Characters distinguishing Western Warbling-Vireo (*swainsonii/brewsteri*) from Eastern Warbling-Vireo (*gilvus*) include the following:

- HY *swainsonii/brewsteri* retain juvenal greater secondary coverts during southbound migration, whereas HY *gilvus* molt these feathers before migrating (Voelker and Rohwer 1998). The retained juvenal greater coverts of southbound HY *swainsonii/brewsteri* are recognizable not only by virtue of their age and wear but also because their narrow, discrete buffy tips produce a distinct buffy wingbar. In contrast, the freshly replaced greater coverts of southbound HY *gilvus* have indistinct pale margins wholly lacking buffy tones or conspicuous contrast with feather interiors (Figure 16);
- Color contrast present on upperparts between grayer anterior areas (head and back on *swainsonii*, head only on *brewsteri*) and greener posterior areas (rump on *swainsonii*, back and rump on *brewsteri*). In *gilvus*, the upperparts are more uniformly grayish with a brown or olive tinge (Pyle 1997a; pers. obs.);
- Upper mandible grayish and darker than the dusky horn color shown by *gilvus*;
- Bill shorter than *gilvus* (Pyle 1997a: 6.5–7.9, vs. 7.5–8.8);
- Bill less deep than *gilvus* (Pyle 1997a: 3.3–3.8, vs. 3.6–4.1);
- Body size (wing and tail length) slightly smaller than *gilvus* (*swainsonii*) or similar to *gilvus* (*brewsteri*); and
- Flanks washed grayish-olive/yellow-olive (yellow in *gilvus*).

In all critical respects—particularly the qualitatively diagnostic retention of buffy wingbars and the quantitatively diagnostic bill morphology—the September 1998 bird resembles Western Warbling-Vireo and differs from Eastern. The question of subspecific designation is more subtle.

Characters further distinguishing *brewsteri* from *swainsonii* include the following:

- Bill shorter still than in *swainsonii* (bills of four *brewsteri* examined at AMNH averaged 7.1 mm, whereas those of 13 *swainsonii* averaged 7.5 mm;
- Break between grayish and greenish dorsal areas occurs between crown and back in *brewsteri* but between back and rump in *swainsonii*;
- Wing longer than in *swainsonii*, similar to *gilvus* (66–75 mm for *brewsteri* vs. 62–71 mm for *swainsonii*: Pyle 1997a);
- Tail longer than *swainsonii*, similar to *gilvus* (49–56 mm for *brewsteri* vs. 46–53 mm for *swainsonii*: Pyle 1997a); and
- Flanks washed grayish-olive vs. yellow-olive in *swainsonii* and yellow in *gilvus*.

In nearly all respects, the 1998 vireo is closest to *brewsteri*. This resemblance is particularly striking with respect to bill size but is also evident in plumage characters and in wing and tail length when one considers the bird's age (HY). Thus, we allocate it to that taxon.

After the preceding had been written, examination of slides of handheld birds netted at the same Fire Island location in 1969–1973 (Buckley 1974) revealed the presence of a second HY Western Warbling-Vireo, with worn wing-bars and a slightly smaller bill, that had been netted by PAB in the pine grove on 26 September 1969 (Figure 17). Although wingbars on fall-migrant warbling-vireos are categorically diagnostic of Western, the subspecific identity of this individual (i.e., *swainsonii/brewsteri*) is indeterminable because measurements were not taken and because various details of plumage are not visible in the photograph.

While both Fire Island *swainsonii* show obvious buffy wingbars, the greater coverts of the 1969 bird appear considerably more worn than those of the 1998 bird, suggesting the former was slightly older, had perhaps traveled farther, or both. In contrast, the fresh, unworn wings of a southbound HY *gilvus* (Figure 16) are devoid of contrasting feather edgings, affording a useful comparison between the two species. Note also the vestigial p10 on *gilvus* (similar in *swainsonii*), slightly longer than adjacent primary coverts; in Philadelphia Vireo, which at times can

Figures 7–10. HY Cassin's Vireo, sex unknown, Fire Island Lighthouse, Suffolk County, New York, 19 October 2001. *Photographs by Patrick Doyle.*

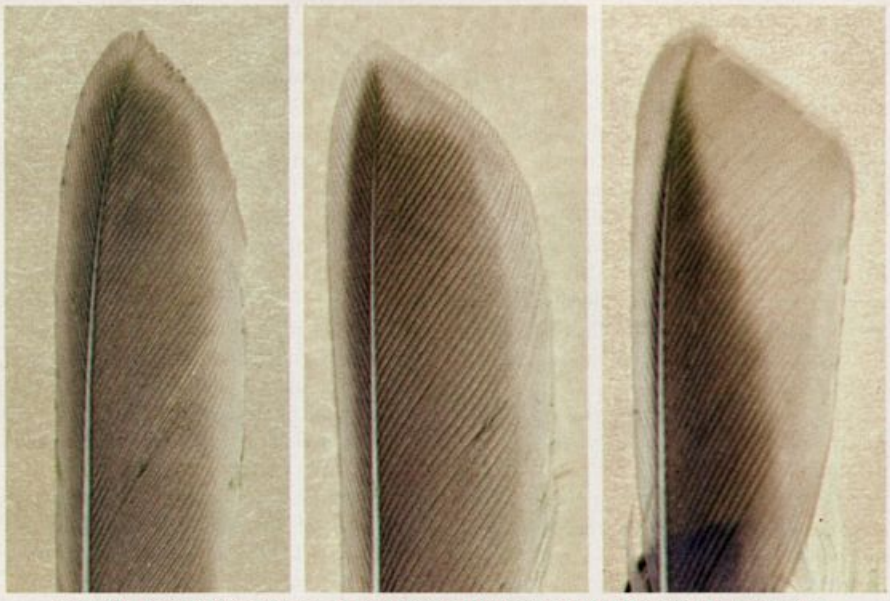

Figure 11. Pattern of white on outermost rectrix (r6) in (a) an extreme Cassin's Vireo, (b) a typical Blue-headed Vireo, and (c) an extreme Blue-headed Vireo; from skins in AMNH collections. ***Photographs by P. A. Buckley.***

look remarkably similar, p10 is usually absent, but if present is strikingly shorter than the primary coverts.

The true extent of eastern vagrancy in Western Warbling-Vireo is presently unknown, perhaps because diagnostic features have only recently been worked out. At the moment (e.g., Phillips 1991), vagrant *swainsonii* has been reported east of its normal range only from Louisiana and Florida (one specimen each), whereas Rocky Mountain *brewsteri* was unknown as a vagrant prior to the present bird. On the East Coast, a Western Warbling-Vireo (nominate *swainsonii*; no published age or sex) was identified by Phillips in a 29 October 1956 Leon County, Florida tower kill (Phillips 1991, Stevenson and Anderson 1994), and another (subspecies unclaimed) was taped singing in Miami, Florida in April 2001 (Pranty 2001); these are the only additional eastern vagrants we know of. Thus, the Fire Island birds are not only the first two Western Warbling-Vireos for New York, but just the fourth and fifth in eastern North America. Two Western Warbling-Vireos at Fire Island within a narrow span of dates, several weeks later than the usual fall occurrence of Eastern Warbling-Vireos, suggests a migratory window, so we would not be surprised if re-examination of museum specimens and close attention to the plumages of fall warbling-vireos added this taxon to the list of anticipated East Coast vagrants.

SONORA YELLOWTHROAT

Geothlypis trichas chryseola

• Field data

SY (by retained juvenal rectrices), male, 18 May 1997, in the pine grove (Figures 18–20). Biometrics: wing 58.9 mm; tail 55.5 mm; nostril to bill tip: 8.4 mm; width at nostril 2.9 mm; depth at nostril 3.3 mm; tarsus 20.8 mm; weight 11.6 gm. A large, long-billed male yellowthroat strikingly bright yellow from chin to vent, slightly duller in lower abdomen; back yellowish-green, lacking brown tones; flanks with slight olive wash but lacking brown tones; forehead band extremely broad and bright white with just a trace of yellowish—radically different than those of local Common Yellowthroats (*trichas*).

• Discussion

This yellowthroat stood apart from any we have ever seen in the East or netted at Fire Island. Examination of the extensive yellowthroat series at the AMNH revealed no eastern United States yellowthroats (*brachidactylus, trichas, typhicola, ignota,* or *marilandica* [auct.]—all subsumed in nominate *trichas* by Pyle 1997a) even approaching this individual. Pertinently, of 400+ in the AMNH labeled nominate *trichas*, only four resembled the subject bird: all were from Mexico and were clearly mislabeled *chryseola* (AMNH 707061, 707062, 707063, and 801580).

Average measurements (mm) of five Mexican-breeding *chryseola* (=*melanops*): wing 59.9, tail 55.1, bill from nostril 8.4, width 2.8, depth 3.4, tarsus 19.7; of four Mexican "*trichas*" (=*chryseola*): wing 59.2, tail 55.2, bill from nostril 8.4, width 2.9, depth 3.6; and of three Arizona *chryseola*: wing 57.0, tail 54.1, bill from nostril 8.2, width 2.9, depth 3.2, tarsus, 19.8. By contrast, 159 male *trichas* banded at Fire Island during May 1996–1999 averaged wing 55.1 (SD = 2.0), and 69 breeding *trichas* from Rhode Island (1993–2000) averaged tail 51.8 (SD = 1.8), bill from nostril 8.2, width 2.9, depth 3.4, and tarsus 20.2. Thus, the Fire Island *chryseola* matches known *chryseola* not only in plumage but also in its significantly longer wing (one-tailed t-test comparing a single observation with a sample mean: $t = 1.9$, df = 158, $P < 0.05$) and tail ($t = 2.1$, df = 68, $P < 0.05$), and slightly longer bill (Phillips et al. 1964, Oberholser and Kincaid 1974).

Of all eastern North American yellowthroats, that with yellowest ventral color is Bahama Yellowthroat, *G. rostrata*, at first blush a taxon one might expect more likely to occur on Long Island than one from the Rio Grande Valley. However, unlike *chryseola*, *rostrata* is nonmigratory and exceedingly sedentary—to the extent of having at least three subspecies in a species endemic to the Bahamas. And while there are at least two reports from mainland Florida (including one mistnetted that escaped before being photographed or measured [Stevenson and Anderson 1994: 595]), it is not generally regarded as having occurred on mainland North America.

Like the Fire Island bird, *G. rostrata* is larger, longer-billed, and more extensively yellow ventrally than eastern Common Yellowthroats. Nevertheless, Bahama Yellowthroat differs from the Fire Island bird in having a more extensively black forehead, in having a grayish crown (nominate *rostrata*), and in its frontal band breadth and color (narrow and gray in nominate *rostrata*, narrow and yellow in *coryi*, and very narrow and yellow in *tanneri*). Moreover, the Fire Island male was below Ridgway's (1902) and Curson et al.'s (1994) measurements for male *G. rostrata* in wing and tarsus and was only 0.5 mm above the shortest tail. Thus, the Fire Island bird clearly does not fit Bahama Yellowthroat in plumage or measurements, but it matches *chryseola* exactly. Comparison of the photographs with skins of *G. rostrata* in the AMNH affirmed this conclusion.

Sonora Yellowthroat (the vernacular name is from Oberholser and Kincaid 1974) breeds in riparian habitat from the southeastern quadrant of Arizona, through southern New Mexico and then along the Rio Grande in extreme western Texas, south into Mexico through northeastern Sonora to Durango and Zacatecas. Partly resident (Phillips et al. 1964), it also winters from southern Arizona east to southern Texas as well as in Mexico (A.O.U. 1957). However, hints that it might not be as "resident" as previously thought are provided by Texas specimens collected beyond its known breeding range in Presidio to the northwest and eastward to the central and lower Texas coast in Victoria County and Cameron County, respectively (Oberholser and Kincaid 1974).

Species limits in the largely allopatric yellowthroats of the southwestern United States and Mexico remain to be considered critically

using a variety of techniques. However, given the presumed sedentary nature of many yellowthroat populations, it is not surprising that the sole molecular study to date (Zink and Klicka 1990) found high levels of genetic differentiation. Using allozyme electrophoresis, they compared several yellowthroat taxa as far apart as Minnesota, Baja California, and Peru, including *chryseola*. Results were tentative owing to small samples, but they did find higher levels of partitioning of genetic variation among geographic samples than expected, which they interpreted as generally supporting the relatively large number (12±) of yellowthroat subspecies described to date. In another study, principal component analysis of Texas yellowthroat subspecies using wing, tail, culmen, and tarsus measurements found spring male *chryseola* (n=4) set apart from the main point-cloud (Coldren 1994), also hinting at this taxon's distinctiveness.

This is among the most unexpected vagrants ever to have appeared in the Northeast; its arrival on a day of a large flight of *trichas* yellowthroats suggests its having mixed with them somewhere in winter. This is apparently the first occurrence of this taxon away from Mexico, Texas, New Mexico, and Arizona.

PINK-SIDED JUNCO

Junco (hyemalis?) mearnsi

• Field data

SY (by retained juvenal remiges and rectrices), female, 2 May 2002, in the deciduous shrub-thicket (Figures 21–24). Biometrics: wing 74.2 mm; tail 65.5 mm; nostril to tip 8.5 mm; width at nostril 4.7 mm; depth at nostril 5.7 mm; tarsus 21.0 mm; primary projection 13.1 mm; fat class 2. Extremely late migrant junco (latest northbound *hyemalis* captured at Fire Island 1996–1999 were singles on 21 and 22 April) with pale bluish-gray hood; lores blackish, contrasting with pale face; crown blue-gray, tinged with brown in center; back brown, tinged buffy, with abrupt borders with rump and hood; tertials worn but retaining some rufous edging; rump gray, tinged bluish; lower margin of bib convex, abrupt to white belly; sides and flanks a striking buffy-cinnamon tinged with pink and gray, this color extending upward to create contrasting wedge between bib and upperparts; tarsi vinaceous; r4 white patch small-medium (Figure 23); undertail coverts white, tinged buff; bill deep pink but discolored/stained dark at tip.

• Discussion

Examination of skins at the AMNH confirmed our original identification as Pink-sided, although because most *mearnsi* in the AMNH were winter- or migration-taken, it proved difficult locating likely breeding-area skins from May for comparison. Still, we did find three spring females from Wyoming, Colorado, and Montana that were at least near, if not in, their breeding areas. All of these are very close in plumage to the Fire Island female, and AMNH 38777 (4 May 1894, Deer Lodge, Montana) is particularly so (Figure 25). Although this specimen's side/flank color appears wider and possibly more intense than the Fire Island female's, this could be due to age (SY vs. ASY), wear, or artifacts of photography or skin preparation. Some skins were made by merging the flanks medially, while others had their flanks pulled apart laterally. In particular, two March 1917 skins by Austin Paul Smith (lovely, as always) were made up to spread their flanks and sides up over their folded wings, thereby exaggerating flank prominence. As with "Solitary Vireos," at this stage in our knowledge measurements are of little identification help, owing to appreciable overlap in most mensural characters of many of the North American junco taxa. Multivariate analyses involving large samples of breeding material from the many named populations might well prove useful—but they remain to be done.

The taxonomy and nomenclature of the various junco populations has long been complex and confused. For example, Pyle (1997), the most recent assayer of junco subspecies, cites several more recent sources disagreeing with Miller (1941, author of the last monographic treatment of all the North American juncos), and there has not been a complete review using modern molecular and morphological techniques, application of

Figures 12, 13. HY Cassin's Vireos in AMNH collections from (upper) Barnegat, Ocean County, New Jersey, 17 November 1933, and (lower) Great Neck, Nassau County, New York, 27 December 1958. *Photographs by P. A. Buckley.*

Figures 14, 15. HY Western Warbling-Vireo, sex unknown, Fire Island Lighthouse, Suffolk County, New York, 29 September 1998. *Photographs by S. S. Mitra.*

evolving species concepts, and diminished emphasis on the taxonomic implications of hybridization. With the lumping of all North American juncos but Yellow-eyed (*J. phaeonotus*) into Dark-eyed (*J. hyemalis*) in the sixth edition of the American Ornithologists' Union's *Check-list* (1983), interest regrettably but predictably waned in perfecting identification techniques for the various juncos and in documenting their distributions and vagrancy patterns. Anticipating the eventual re-recognition of multiple species of juncos, we have used the vernacular name "Pink-sided Junco" from the seventh A.O.U. *Check-list* (p. 626).

Despite muddied junco nomenclature, typical Pink-sided Juncos in the Rocky Mountains are readily separable in the field from various Oregon (*oreganus*) and Slate-colored Juncos. Identification of vagrants has been much more contentious, owing largely to misleading or erroneous depictions of this taxon in many field guides. (Dunn [2002: 438] summarizes a long series of inaccurate depictions of *mearnsi* in various field guides [albeit from his taxonomic and identification perspective, which presumes widespread hybridization and intergradation among junco taxa, especially *mearnsi* and *caniceps*] and provides full citations for all of them.) In our opinion, even the most recent articles on the identification of *mearnsi* (Dunn 2002, Neal 2003) place disproportionate significance on some characters (particularly the extent of flank pigmentation, which appears to us rather variable among breeding specimens) at the expense of others (notably head/face pattern, which appears both uniform and highly distinctive). The Fire Island bird's pale blue-gray head with contrastingly black lores readily distinguishes it from all other junco taxa save *caniceps/dorsalis*—from which it clearly differed with respect to bib/belly contrast, back color, and other characters. Beyond head color and pattern, it was further distinguishable from coastal Oregon Juncos by its larger size and from Slate-colored Juncos by its convex bib and flank color.

During the winter of 1999–2000, there were three other Pink-sided Juncos on the East Coast: a HY (first-basic) likely male at Halifax, Nova Scotia, 18 December 1999– 27 February 2000 (I.A. McLaren, pers. comm.; photograph examined by PAB/SSM); an AHY (definitive-basic) male at Riverdale, Bronx County, New York 26–31 December 1999 (PAB, R.R. Veit et al.; Burgiel et al. 2000); and another AHY male at Kiptopeke State Park, Northampton County, Virginia 10 November 1999 through at least 29 January 2000 (S. Hopkins et al.; Iliff 2000a, 2000b). The Fire Island female was likely a fourth from this same incursion, returning north after wintering undetected somewhere in the East, and thus is New York's second (and the first supplemented by photographs). Subsequently, there was also an SY female photographed in Saint-Célestin, Québec 27 April 2002 (Michel Gosselin, pers. comm.); photograph examined by PAB/SSM. We are aware of no other Pink-sided Juncos with supporting details from anywhere in the East, although there are persistent rumors of a Maryland specimen. It seems likely that Pink-sided Junco is somewhat overlooked in the East, owing to perceived identification difficulties.

CONCLUSION

The predicted age (young birds) of East Coast vagrant landbirds is largely affirmed by these birds: the two species of vireo were HYs on their first southbound migration, and the yellowthroat and junco were each on their first northbound migration, in all likelihood having wintered in the East/Southeast after arriving as HY vagrants the previous fall. We were unable to age the sapsucker beyond "AHY" owing to the complex molt patterns often exhibited by woodpeckers and the absence of sophisticated reference materials at the time of capture. Only the southbound adult flycatcher (still only in its second year) defied precise expectations as to age (but see below).

The adult sapsucker in late June and SY flycatcher in early September were neither typical southbound HY vagrants nor obvious northbound migrants. Both were probably summer wanderers—non-breeders straying beyond their normal breeding distributions until they were detected at Fire Island. This sort of phenomenon has been described for eastern vagrants on California's Farallon Islands (DeSante and Ainley 1980; P. Pyle, pers. comm.) and is supported by breeding-season records, during the course of our own recent work at Fire Island, of two Western Kingbirds (*Tyrannus verticalis*; SSM, pers. obs.) and many Eastern species not known to breed locally (e.g., July banding records of Blue-headed Vireo, Tennessee Warbler [*Vermivora peregrina*], Blackpoll Warbler [*Dendroica striata*], among others).

From data in this paper and in Buckley (1974), it is apparent that the immediate vicinity of the Lighthouse Tract at Fire Island has produced a striking array of vagrants. The following long-distance vagrants were netted

Figure 16. HY Eastern Warbling-Vireo, sex unknown, Fire Island Lighthouse, Suffolk County, New York, 27 September 1969; note vestigial p10 characteristic of warbling-vireos vs. Philadelphia. *Photograph by P. A. Buckley.*

in 1969–1973 and 1995–2001: Williamson's Sapsucker, Cordilleran Flycatcher, Bell's Vireo (*V. bellii*), Cassin's Vireo, Western Warbling-Vireo, Sonora Yellowthroat, Western Tanager (*Piranga ludoviciana*), Slate-colored Fox Sparrow (*Passerella iliaca altivagans*), Pink-sided Junco, and Bullock's Oriole (*Icterus bullockii*). In addition, others have also been seen within two km of Fire Island Lighthouse, some on multiple occasions: Say's Phoebe (*Sayornis saya*), Ash-throated Flycatcher (*Myiarchus cinerascens*), Western Kingbird, Scissor-tailed Flycatcher (*Tyrannus forficatus*), Fork-tailed Flycatcher (*T. savana*), Black-billed Magpie (*Pica americana*), Northern Wheatear (*Oenanthe oenanthe*), Audubon's Warbler (*Dendroica coronata auduboni*), Black-throated Gray Warbler (*D. nigrescens*), Lark Bunting (*Calamospiza melanocorys*), Harris's Sparrow (*Zonotrichia querula*), Smith's Longspur (*Calcarius pictus*), Yellow-headed Blackbird (*Xanthocephalus xanthocephalus*), and Brewer's Blackbird (*Euphagus cyanocephalus*). While similar lists might be generated for other heavily-worked coastal sites along the Atlantic Coast, this remains an impressive agglomeration.

More importantly, a generally unappreciated biological outcome is that the Fire Island Lighthouse Tract is a known focus for Deer Ticks and Lyme Disease. Our studies show that migrants coming into the Lighthouse Tract arrive with variable but generally low tick body-burdens, recruit unexpectedly large numbers of Deer Ticks while fattening at this important stopover site, then depart for distant and varied destinations. Furthermore, a significant percentage of the ticks exported thus are infected with Lyme Disease spirochetes. While such ground-feeding birds as juncos and Fox Sparrows normally occur at Fire Island outside the seasonal peaks of Deer Tick activity, long-distance vagrants of these species are being found there during peak tick times. Additionally, normally arboreal-feeding species such as *Empidonax* flycatchers and vireos routinely feed near or on the ground on barrier beaches during migration (pers. obs.), thereby exposing themselves to ticks they would otherwise never encounter. One example drives the point home well: on 9 May 1997 we removed an unfamiliar tick from a just-arrived Yellow-throated Vireo (*V. flavifrons*) on Fire Island. The tick was later identified by H.S. Ginsberg as a Gulf Coast Tick (*Amblyomma maculatum*), a species normally found only within 160 km of the immediate Gulf and Atlantic coasts from Texas through Florida, Georgia, and South Carolina. We picture it being picked up by an exhausted vireo feeding on the ground after having just crossed the Gulf of Mexico. In just such a manner is long-distance transport of Lyme Disease and other arthropod-borne diseases easily and routinely effected.

Another unexpected finding of the long-term banding study has been the unappreciated importance of coastal (especially barrier island) locations as vagrant landbird concentration points *in spring*. The species listed above were recorded at Fire Island in both northbound and southbound migration. But if one looks only at *northbound* landbird migration (including wandering by pre- and failed breeders, and potential range-expanding overshoots) along the immediate coast from only Cape May, New Jersey to the Massachusetts–New Hampshire border (defined here as including Cape May south of the Canal, all of Block Island, all of Martha's Vineyard, and all of Nantucket, plus mainland areas within two km of the shorefront), the list of species that have occurred here in April, May, and June is startling: Swallow-tailed Kite (*Elanoides forficatus*; NJ, NY, CT, RI, MA), White-tailed Kite (*Elanus leucurus*; NJ, MA), Mississippi Kite (*Ictinia mississippiensis*; NJ, NY, CT, RI, MA), Swainson's Hawk (*Buteo swainsoni*; RI, MA), Eurasian Kestrel (*Falco tinnunculus*; MA), Band-tailed Pigeon (*Patagioenas fasciata*; MA), White-winged Dove (*Zenaida asiatica*; NJ, NY, MA) Common Cuckoo (*Cuculus canorus*; MA), Burrowing Owl (*Athene cunicularia*; CT), Lewis's Woodpecker (*Melanerpes lewis*; MA), Williamson's Sapsucker (NY), Western Wood-Pewee (*Contopus sordidulus*; MA), Say's Phoebe (MA), Vermilion Flycatcher (*Pyrocephalus rubinus*; NJ, RI), Ash-throated Flycatcher (NY, MA), Western Kingbird (NJ, NY, MA), Gray Kingbird (*Tyrannus dominicensis*; NJ), Scissor-tailed Flycatcher (NJ, NY, CT, RI, MA), Fork-tailed Flycatcher (NJ, RI, MA), Black-billed Magpie (NJ, NY), Eurasian Jackdaw (*Corvus monedula*; RI), Brown-chested Martin (*Progne tapera*; MA), Cave Swallow (*Petrochelidon fulva*; NJ, NY),

Figure 17. HY Western Warbling-Vireo, sex unknown, Fire Island Lighthouse, Suffolk County, New York, 26 September 1969. *Photograph by P. A. Buckley.*

Figures 18–20. SY male Sonora Yellowthroat, Fire Island Lighthouse, Suffolk County, New York, 18 May 1997. *Photographs by S. S. Mitra.*

Rock Wren (*Salpinctes obsoletus*; MA), Bewick's Wren (*Thyromanes bewickii*; NJ), Northern Wheatear (NJ, NY, CT, MA), Mountain Bluebird (*Sialia currucoides*; MA), Fieldfare (*Turdus pilaris*; CT), Audubon's Warbler (MA, NJ, NY), Black-throated Gray Warbler (NJ, RI), Townsend's Warbler (*Dendroica townsendi*; NY, RI), Hermit Warbler (*D. occidentalis*; CT), Swainson's Warbler (*Limnothylpis swainsonii*; NJ, NY, MA), Sonora Yellowthroat (NY), Western Tanager (NJ, MA), Bachman's Sparrow (*Aimophila aestivalis*; NY), Clay-colored Sparrow (*Spizella pallida*; NJ, NY, RI, MA), Lark Sparrow (*Chondestes grammacus*; NJ, NY, CT, MA), Lark Bunting (NJ, NY, RI, MA), Le Conte's Sparrow (*Ammodramus leconteii*; NJ, MA), Slate-colored Fox Sparrow (NY), Harris's Sparrow (NJ, MA), Golden-crowned Sparrow (*Zonotrichia atricapilla*; MA), Gray-headed Junco (*J. h. caniceps*; MA), Pink-sided Junco (NY), Smith's Longspur (NJ, CT), Chestnut-collared Longspur (*Calcarius ornatus*; NJ, NY, CT), Black-headed Grosbeak (*Pheuticus melanocephalus*; NJ, NY, CT), Lazuli Bunting (*Passerina amoenus*; MA), Painted Bunting (*P. ciris*; NJ, CT, RI, MA), Western Meadowlark (*Sturnella neglecta*; RI, MA), Brewer's Blackbird (MA), Yellow-headed Blackbird (NJ, NY, CT, MA), Bullock's Oriole (NY), Common Chaffinch (*Fringilla coelebs*; MA), and Eurasian Siskin (*Carduelis spinus*; MA). It is clear from Northeastern data that the immediate coast should be considered a major locus for vagrant landbirds in spring as well as fall, probably throughout the United States and Canada.

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Figures 21–24. SY female Pink-sided Junco, Fire Island Lighthouse, Suffolk County, New York, 2 May 2002. *Photographs by S. S. Mitra.*

Figure 25. AHY female Pink-sided Junco, 4 May 1894, Deerlodge, Granite County, Montana (AMNH 38777).
Photograph by P. A. Buckley.

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