

Reprinted from: *American Birds*, Winter 1989, Volume 43, Number 5
Printed in U. S. A.

**Eurasian Siskins in
North America-
distinguishing females from
green-morph Pine Siskins**

*Ian A. McLaren, Joseph Morlan,
P. William Smith, Michel Gosselin, and
Stephen F. Bailey*

A good case can be made for the natural occurrence of Eurasian Siskins in North America, but females can easily be confused with Pine Siskins

Eurasian Siskins in North America—distinguishing females from green-morph Pine Siskins

Ian A. McLaren, Joseph Morlan,
P. William Smith, Michel Gosselin, and
Stephen F. Bailey

Figure 1. Dorsal view of the green-morph Pine Siskin in Halifax, Nova Scotia, early April 1986. Photo/I. McLaren.

ON MARCH 26, 1986, AN UNUSUAL siskin turned up at McLaren's feeder in Halifax, Nova Scotia. It was dark grayish-green on the back, with strong yellow wing and tail patches, a greenish-yellow rump, and tinged with yellow on the head and underparts. Furthermore, it appeared smaller and its bill seemed deeper than average among scores of Pine Siskins (*Carduelis pinus*) coming to the feeder. The local birding community was quickly alerted to a possible female Eurasian Siskin (*C. spinus*). Until April 28, it was studied closely by many people, including some familiar with Eurasian Siskins in Europe, and all seemed content with this initial identification. Its plausibility seemed reinforced by news of an unusually large irruption of the species into Great Britain that winter (see below).

During its stay, three other greenish siskins appeared at feeders in Nova Scotia—two in Halifax and one in Yarmouth. However, photographs seen by McLaren show that the bird from Yarmouth and one from Halifax

were clearly Pine Siskins in other attributes, and they were not widely reported. The original Halifax bird (Figs. 1, 2) required more research before finally being identified as an example of the little-known green morph of the Pine Siskin.

Meanwhile, in late February 1987 an unusual siskin flew into a window of C. J. Ralph's house in Arcata, California. The bird was stunned briefly, but recovered. Ralph noticed its unusual plumage, but did not consider that it might be a Eurasian Siskin until Dave DeSante saw the bird along with another green individual several days later. Both were then seen by several interested people, none of whom could recall seeing a Pine Siskin in such bright plumage. One bird was then trapped, measured and photographed by Ralph (Fig. 3, 4), and released. These birds generated much interest among California birders and one of them was seen by Bailey and Morlan on March 1, 1987. It became clear that the literature was inadequate for certain identification of the bird, although Morlan *et al.* (1987)

suggested that it was probably a Pine Siskin because of its bright yellow undertail coverts, a feature lacking in Eurasian Siskins (Witherby *et al.* 1943). The photographs show that the bird was definitely a green-morph Pine Siskin, based on this and other characters discussed below.

Our purposes in writing this account are to review available information on claimed occurrences of the Eurasian Siskin in North America and evaluate the plausibility of natural vagrancy, to describe and analyze the green morph of the Pine Siskin, and to compare field marks of this morph with those of the female Eurasian Siskin, so that other observers will not be misled in future.

Occurrences of Eurasian Siskins in North America

There are definite records of Eurasian Siskins in North America (*e.g.*, Fig. 5); only their natural occurrence is in doubt (American Ornithologists' Union 1983). Ridgway (1901) states that "although introduced, with other European birds, into Oregon, there is



Figure 2. Ventral view of the green-morph Pine Siskin in Halifax, Nova Scotia, early April 1986. Note the extensively deep-yellow tail patches and yellowish on undertail coverts. Photo/I. McLaren.



Figure 3. Dorsal view of the green-morph Pine Siskin captured in Arcata, CA, in late February 1987. Note the whitish fringes of the lesser and greater wing coverts, the latter underlain by extensive deep yellow of the bases of flight feathers. Photo/C. J. Ralph.

no record to the effect that this species has become naturalized," and the A.O.U. *Check-list* (A.O.U. 1983) also mentions its unsuccessful introduction in Ohio. Tables 1 and 2 summarize all published North American reports known to us of Eurasian Siskins, excluding the two unsuccessful introductions. We are also aware of some other unpublished sightings of purported females; we regard these as unsatisfactory.

Data available on the legal importation of birds into the United States compiled by Smith (Table 3) include moderate numbers of this species and other siskins compared with some other cagebirds. Thus, any or all the Eurasian Siskins in North America could have escaped from captivity. This is also true of other species such as the rarely imported Brambling (Table 3), whose acceptance as a genuine vagrant is based on its pattern of occurrence in areas remote from probable release of cagebirds. Of all the records, perhaps the sightings in Alaska and Newfoundland (Table 2) and the photograph from St. Pierre (Table 1) are geographically most suggestive of wild vagrants.

Note that all but one confirmed Eurasian Siskins and the three unconfirmed sightings of males are from the northeast coast or the Aleutians. Some of these reports come from densely populated areas where escaped cagebirds are more likely, but also where more birding is done. Inland reports, in contrast, all involve claimed females, and from details available to us we believe that most if not all of these were green-morph Pine Siskins (see below). This lack of confirmed Eurasian Siskins inland, where escaped cagebirds should be just as frequent as along the coast, strongly suggests a pattern of vagrancy from Europe and Asia.

There are other reasons why Eurasian Siskins might arrive naturally in North America. The species breeds discontinuously over the boreal zone of the Palearctic west to Scotland, where it has increased markedly since 1950 due to afforestation (Thom 1986). It has also nested in Ireland since the late 19th century and in southern England since the 1950s (Sharrock 1976). Banding recoveries show that birds from Scandinavia and the mountains of central and eastern Europe often irrupt westward to



Figure 4. Ventral view of the green-morph Pine Siskin (right), together with two normally plumaged individuals, captured at Arcata, CA, in late February 1987. Note the extensively yellow rectrices and undertail coverts of the green-morph bird. Photo/C. J. Ralph.

coastal Europe and the British Isles in fall (September to November), returning in spring (March to May). A major influx occurred in England and Ireland during winter 1985–1986 (Dawson and Allsopp 1986a; Dawson and Allsopp 1986b). However, banding recoveries indicate that most of these birds came from Scotland rather than Scandinavia (R. Hudson, British Trust for Ornithology, in lit.). As with other irruptive species, banding data suggest that the Eurasian Siskin neither breeds nor winters at the same location in successive years. In fact no

proven individual has ever been proved to nest closer than 120 kilometers to its original breeding site in a consecutive year, and one bird is known to have wintered at two locations 2000 kilometers apart (Newton 1973).

Migrating or irrupting Eurasian Siskins can clearly make long flights over water. At isolated locations such as Fair Isle, between the Shetlands and Orkneys, it occurs annually in both spring and fall (Hollaway and Thorne 1981), with peaks as high as 235 on September 20, 1984 (Riddiford 1984).

In the Faroe Islands there were seven records through 1983, all in May or in September or October; it is thought to be more regular now than formerly (Bloch and Sørensen 1984). In Iceland there have been recent occurrences in spring and fall: over a dozen reports in the fall of 1980, mostly in early November (Petursson and Skarphethinsson 1982); and subsequently two records in May 1982, one on October 15, 1983, and three in October 1984 (Petursson and Olafsson 1984, 1985, 1986). There are also reports from weather ships on station west of the British Isles and south of Iceland: seven individuals on October 28, 1971, at 52°30'N, 20°00'W (Tuck 1973), and one on October 30, 1975, at 57°00'N, 20°00'W (Casement 1977).

In conclusion, we believe that there is a good case for the natural arrival of some some or all confirmed Eurasian Siskins in North America, and for the transfer of the species from Appendix B of the A.O.U. *Check-list* to the main list.

The Green-Morph of the Pine Siskin

There have been few comments on greenish Pine Siskins in the literature, generally in the context of discriminating them from female Eurasian Siskins. Ridgway (1901), possibly referring to this greenish plumage, states: "I have not been able to discover a single positive character whereby the adult female and young [Eurasian Siskin] may be infallibly

Table 1. Records of Eurasian Siskin (all males) in North America confirmed by specimen or photograph (all of which have been personally inspected by Smith)

Locality	Dates	Comments
Kittery, ME	March 24, 1962	Trapped at banding station and kept caged until November 1962; no evidence of prior captivity (Borror 1963). Specimen MCZ No. 262138.
New Bedford, MA	late March to at least April 3, 1969	At feeder. Generally ignored on presumption it was an escaped cagebird; see Johnson (1969); photos on file Massachusetts Audubon Soc.
Bloomfield, NJ	February 11–27, 1983	At feeder. Published photo in Black (1983) now in NJ Rare Bird Photo File of NJ Audubon Society
Rockport, MA	May 5, 1983	At banding station. Copies of published photos by P. W. Smith (<i>in</i> Norris 1983) given to Massachusetts Audubon Soc. See also Nikula (1983). Reproduced here as Fig. 3.
Petite Miquelon, St. Pierre et Miquelon	June 23, 1983	Photographed by Alain Debrosse (Debrosse St. and Etcheberry, MS; see also Tingley 1983).
Etobicoke, ONT	February 6 into March, 1988	At feeder. Photo in Weir (1988), who commented "its origins remained in doubt."



Figure 5. A male Eurasian Siskin captured at the Norris banding station (Norris 1983) at Rockport, MA, May 5, 1983. Photo/P. W. Smith.

distinguished from *S. pinus*". Blake (1976), writing on the sighting in 1973 in Wisconsin (see Table 2), states: "What is not apparently generally known is that, although the Pine Siskin usually has hen-feathered males, once in a very long time it produces a cock-feathered male." Such males, which in terms of other siskin species are more female-like, are here referred to as green morphs, although the plumage appears to be restricted to males. Ryan (1981) warns about "aberrant

plumage characteristics of Pine Siskin when trying to identify European Siskin." The only field guide reference to the plumage seems to be that by Eckert (in Farrand 1983), who notes that some Pine Siskins "have little streaking on the underparts, an obvious greenish tinge above, and brighter and more extensive wing and tail patches" may "resemble Eurasian Siskins and can be misidentified."

Pine Siskins were examined by Goselin at the National Museum of Canada in Ottawa (NMC), by McLaren at the Royal Ontario Museum in Toronto (ROM), the British Columbia Provincial Museum in Victoria (BCPM), the Museum of Comparative Zoology in Cambridge, Massachusetts (MCZ), and the British Museum (Natural History) in Tring (BMNH), and by Bailey at the American Museum of Natural History in New York (AMNH) and the California Academy of Sciences in San Francisco (CAS). The specimen trays hold a striking diversity of plumages. However, only five individuals of some 300 in the NMC, four of 330 in the ROM, two of 400 in the MCZ and one of

215 in the CAS are strongly dark greenish (the AMNH specimens were sampled differently). In addition, two among 120 in the BCPM and one of 160 Pine Siskins in the BMNH are quite greenish, although not so strikingly so as the NMC, ROM, and MCZ individuals. Thus it appears, to the extent that these collections are unbiased, that only about one percent of Pine Siskins might be classed as green morphs. There appear to be no seasonal or geographical patterns in the incidence of this plumage.

These greenish Pine Siskins look like ordinary ones that have lost their heavy brown streaks, revealing an underlying pattern of gray and yellow that blend into green hues overlaid by a fainter remnant of the original streaking. This may be interpreted as an example of schizochromism, in which the phaeomelanin (brown) is reduced or absent while both eumelanin (black) and carotenoids (yellow) are retained (Campbell and Lack 1985).

Male Pine Siskins distinguished by Oberholser (1974) as a "gray phase" have the normal amount of yellowish

Table 2. Unconfirmed published reports of Eurasian Siskins in North America. All are sight records, with no photographic evidence known to us.

Locality	Dates	Comments
Cambridge, MA	August, 1904	Male seen by William Brewster (1906) who thought that it had probably escaped, although it was wary and unworn.
Holyoke, MA	March 14–April 26, 1972	A feeder bird "thought to be a female" described briefly and inconclusively (<i>Bird News Western Mass.</i> 13: 30 [1972]).
Kenosha, WI	December 22, 1973	A female during a Christmas Count, well described by DeBenedictis and Fiehweg (1974); see also Janssen (1974). Large yellow tail flashes imply Pine Siskin.
Buffalo, WI	February 3–March 3, 1974	A poorly described female at feeder, first thought to be a Cape May Warbler (Maier and Maier 1974)! This report was followed by one of an aberrant Pine Siskin (Woodcock 1974).
Attu, AK	June 4, 1978	A single-observer sighting of a male, well described by T. J. Savaloja (Kessel and Gibson, unpubl. records). Noted in Roberson 1980.
Terra Nova N.P., Newfoundland	February 13, 1980	A single-observer sighting of a male, well described by Burrows (1980).
Urbana, IL	January 31–February 8, 1981	A "well described female" was listed as an "exotic" by Peterjohn (1981), and the record is discussed further by Peterjohn in Ryan along with reference to a bird in Toledo, that "lacked substantiating details."
Verona, NJ	March 11–16, 1983	Male reported without dates (Black 1983) and assumed by Boyle <i>et al.</i> (1983) to be the same individual confirmed at Bloomfield (see Table 1). From interviews, Smith believes this record unconfirmed.
Halifax, N.S.	March 26–April 28, 1986	Reported as having "exhibited field marks of a female Eurasian Siskin" (Mactavish 1986), here identified as a Pine Siskin.

Table 3. Eurasian Siskins and some other birds imported into the United States, 1969–1974. Data from Banks (1970), Banks and Clapp (1972), Clapp (1975), Clapp and Banks (1973a, 1973b), and Greenhall (1977).

Species	Total imported
Eurasian species	
European Goldfinch (<i>Carduelis carduelis</i>)	4442
Common Rosefinch (<i>Carpodacus erythrinus</i>) ¹	1695
Eurasian Bullfinch (<i>Pyrrhula pyrrhula</i>)	844
Eurasian Linnet (<i>Carduelis cannabina</i>)	398
Common Serin (<i>Serinus serinus</i>)	379
Eurasian Siskin (<i>Carduelis spinus</i>)	272
Common Chaffinch (<i>Fringilla coelebs</i>)	190
European Greenfinch (<i>Carduelis chloris</i>)	116
Hawfinch (<i>Coccothraustes coccothraustes</i>)	24
Brambling (<i>Fringilla montifringilla</i>)	20
Neotropical species	
Hooded Siskin (<i>Carduelis magellanica</i>)	1142
Black-headed Siskin (<i>Carduelis notata</i>)	159
Black Siskin (<i>Carduelis atrata</i>)	15
All species, all families ²	3,737,636
Psittacidae, Sturnidae, Ploceidae, Estrildidae only	2,910,162

¹ Some of these may be related species

² Excludes ca. 500,000 canaries not reported in 1968–1969

pigment in the body plumage, and thus may have only a faintly greenish cast (Fig. 6). Darker green individuals like the Halifax (Fig. 1) and Arcata (Fig. 4) birds seem to have an extra dose of carotenoids, and thus are xanthochroistic as well as schizochroistic. This is evident in the deep yellow of their wing and tail patches. The extent and intensity of the patches vary independently; thus the grayish bird on Figure 6 has very large wing patches, but these are the typical pale yellow of normal Pine Siskins.

The green morph occurs largely or entirely in male Pine Siskins. All the strikingly dark green birds in the museum collections examined by us are males. This sex bias may be the basis for Blake's (1976) supposition that they represent "cock-feathered" rather than the normal "hen-feathered male." They are very drab compared to males of other cardueline finches,



Figure 6. A gray-morph Pine Siskin in Halifax, Nova Scotia, late April 1986. Note that the yellow on wings and tail is extensive, but not strong in hue and that the back is only faintly greenish. Photo/I. McLaren.

and probably are not a throwback to an ancestral cock plumage of this species. It is perhaps significant, however, that bright cock plumages of some other carduelines do appear to develop partly through "turning off" the bold brown immature streaking (as in most *Loxia*, *Carpodacus*, and *Carduelis*). One Newfoundland specimen (MCZ 25615), however, is labeled as a female. It has a heavily streaked, yellowish rump, and strongly yellow wing and tail patches, but its back is not as purely greenish as those of the males examined.

It should also be noted that juvenile Pine Siskins may resemble green morph adults in having yellow below, especially on the undertail coverts. They differ from the green morphs in usually having more extensive yellow ventrally, and in lacking the greenish suffusion above and the strong yellow patches on wings and tail. This plumage, which is illustrated in Scott (1987), may be lost before the birds migrate.

Identification of Female Eurasian Siskins

It is clear that some adult male Pine Siskins look like female Eurasian Siskins (cf. Fig. 1, 7). Fortunately, adult male Eurasian Siskins are easily distinguished, although they do bear a superficial resemblance to some neotropical siskins. Svensson (1984) indicates that male Eurasian Siskins are identifiable as such by their first winter. Thus we are faced only with the

problem of distinguishing female Eurasian Siskins from green-morph male Pine Siskins.

Size. The Eurasian species averages smaller than the Pine Siskins, but not much. Weights of Pine Siskins (Clench and Leberman 1978) and Eurasian Siskins (Sellers 1986) are seasonally and diurnally variable and show much overlap. Wing lengths are often measured differently by European (flattened wing) and North American authors (unflattened), so we measured unflattened wing chord (in millimeters) of the nine green-morph Pine Siskins in the NMC and ROM (mean 72.8, S.D. 1.79, range 70.0–76.1) and the seven female Eurasian Siskins from Europe in the ROM (mean 68.9, S.D. 1.99, range 67.2–72.5). It is clear that the two species cannot be reliably discriminated by size.

Bill size and shape. The Halifax bird had a deep bill compared with most Pine Siskins (cf. Figs. 2 and 8). Bill measurements by McLaren may be more comparable *inter se* than those from the literature. Five female and seven male Eurasian Siskins from Europe (others were broken or gaping) in the ROM were compared with six male and six female Pine Siskins chosen at random. Although the bills of the Pine Siskins appeared longer, their exposed culmen length proved very similar to that of the Eurasian Siskins, perhaps because of greater extension of the culmen onto the roof of the



Figure 7. A female Eurasian Siskin in Coventry, England, February 1982. Note the paler yellow wing markings compared to the green-morph Pine Siskin (Figs. 1–4). Photo/Alan Millward.



Figure 8. A first-winter Pine Siskin in Halifax, Nova Scotia, late April 1986. Note the thin bill (compare with Fig. 7). Photo/ I. McLaren.

skull in the latter. Therefore, length was measured from the anterior edge of the nostril to the tip of the bill. This averaged significantly greater ($t = 4.06$, d.f. 20, $p < 0.01$) in Pine Siskins (mean 8.88, S.D. 0.36, range 8.5–9.7 mm) than in Eurasian Siskin (mean 8.36, S.D. 0.26, range 7.9–9.0 mm). Bill depth, however, was significantly smaller ($t = 9.36$, d.f. 20, $p < 0.001$) in Pine Siskins (mean 5.80 mm, S.D. 0.29, range 5.3–6.4 mm) than in Eurasian Siskins (mean 6.31, S.D. 0.23, range 6.1–6.8 mm). Although these



Figure 9. Sketch by Lars Jonsson of the green-morph Pine Siskin in Halifax, Nova Scotia, based on photographs (upper figure), together with that of a "typical" or composite adult female Eurasian Siskin (lower figure). Note the following features on the Eurasian Siskin: more distinct upper wing bar; broader and whiter lower wing bar; less prominent wing flashes (bases of secondaries); dark streaks on undersides most prominent on flanks; less contrasting ear coverts (not always so); stouter and more curved (not always) culmen.

measurements overlap, they represent a visibly different average bill shape, due largely to the deeper base of the lower mandible in Eurasian Siskins and the very long, thin bills of some Pine Siskins (e.g., Fig. 8).

Although the culmen on the Eurasian Siskin is commonly illustrated as curved (as in Fig. 7), and that of the Pine Siskin as straight (as in Fig. 8), this is not a reliable difference. Among birds in the Museum of Vertebrate Zoology, University of California at Berkeley, culmens of 28/39 Eurasian Siskins and 36/397 Pine Siskins were scored as curved. Furthermore, curvature of the culmen may only be evident when the bill is observed or photographed from a strictly lateral aspect.

Plumages. The striking similarity of plumages between female Eurasian Siskin and some green morphs of the Pine Siskin is the heart of the identification problem. In our analyses, we have been greatly aided by the comments of and the illuminating sketch (Fig. 9) by Lars Jonsson who, unlike two other European experts to whom we submitted copies of slides, immediately recognized that the Halifax bird was not a Eurasian Siskin.

1. The wing bars of Eurasian and Pine siskins are variably illustrated in field guides and other references. Those of Pine Siskins are often shown as more modest and less deeply yellow than those of Eurasian Siskins. However, specimens of female Eurasian Siskins seen by us generally do not have such bright wing markings. Lars Jonsson (in lit.) judged, from photographs of the Halifax bird (Fig. 1, 2), that "the bright wing flashes of yellow are absolutely too bright for a female [Eurasian] siskin." Furthermore, the pattern of yellow differs. Both may have variable amounts of yellow, with virtually none in some Pine Siskins, but prominent in our green morphs, on the bases of the primaries and secondaries and on the inner webs of the tertials. Field guide illustrations of Pine Siskins generally show one or two whitish wing bars with a yellow flash at the base of the outer primaries, and this is indeed the commonest arrangement. However, the margins of the greater wing coverts may appear yellowish in Pine Siskins, especially in green morphs. Although the posterior wing bar may be slightly yellowish, this appearance in Pine Siskins derives

largely from the underlying deep-yellow bases of the secondary feathers that show through the whitish and often worn greater covert margins (see Fig. 3). Virtually all field guide illustrations of female Eurasian Siskins show two yellowish wing bars. Indeed, both the median and greater coverts of adult female Eurasian Siskins have yellowish margins, although the former may be covered by scapular feathers in perched birds. Also, the yellowish margins of the greater coverts in female Eurasian Siskins are generally broader than those on green-morph Pine Siskins, although they may be narrowed by wear. The yellowish bases of the secondaries in female Eurasian Siskins do not extend much if at all beyond the yellowish tips of the greater coverts. In conclusion, the eye-catching prominence of yellow on their wings has a different basis in female Eurasian Siskins and green-morph Pine Siskins: two wing bars in the former, and deeper and more extensive yellow at the bases of flight feathers in the latter.

2. The yellow tail patches of female Eurasian Siskins are less deeply yellow and less extensive than those of green-morph Pine Siskins, in which they may extend almost to the tip of the tail medially (e.g., Figs. 2, 4). This is probably a sexual difference, as male siskins do have more extensive deep-yellow tail patches than females (Pyle *et al.* 1987).

3. Dorsal views of green siskins, while likely to attract attention among a flock of Pine Siskins, are least distinctive. Views of the underparts are more useful. Green morphs always lack the heavy, dark streaks usual in brownish Pine Siskins, and some have almost no streaking below. When present, the streaks appear broad and diffuse compared with those of female Eurasian Siskins, on which the streaking of the flanks, especially posteriorly, is always broad, dark and sharp-edged (Fig. 10). Female Eurasian Siskins also have a larger unstreaked area on the lower breast and belly (Fig. 10).

The distribution of yellow on the underparts differs in the two birds (Figs. 9, 10). Female Eurasian Siskins are variably yellow on the upper breast. The yellow is more extensive and less bright in most green-morph Pine Siskins and often occurs on the flanks.



Figure 10. Ventral view of specimens of a green-morph Pine Siskin (NMC 83635, left) and a female Eurasian Siskin (NMC 45425, right). Note the extensive yellowish on the underparts of the former and its confinement to the upper breast on the latter. Photo/M. Gosselin.

The undertail coverts of most green-morph Pine Siskins (including both the Halifax and Arcata birds) are yellowish, a feature not found on any specimens of female Eurasian Siskins, some of which do have a little yellow immediately behind the legs. However, yellow undertail coverts are not always noticeable on specimens of green-morph Pine Siskins. Thus, yellow undertail coverts, if they can be seen, exclude the Eurasian Siskin; but their absence does not infallibly signify this species.

4. Although green-morph Pine Siskins may have more contrasting ear patches than do female Eurasian Siskins (*cf.* Figs. 2, 7) this is not a consistent or easily observed difference. We find no other differences in facial or dorsal plumage that might assist discrimination in the field.

In conclusion, close study of bright green-morph Pine Siskins should distinguish them from possible vagrant (or escaped) female Eurasian Siskins. Most important, the large yellow tail and wing patches that may first draw attention to a green-morph Pine Siskin at the same time eliminate the possibility of female Eurasian Siskin. In contrast, real female Eurasian Siskins are not so brightly marked and could easily be overlooked among Pine Siskins. The best field mark is

the pattern of the wings: two yellowish wing bars and limited yellow at the base of the flight feathers in Eurasian Siskins, and two whitish wing bars with an extensive yellow primary patch on Pine Siskins. Yellow undertail coverts, if present, eliminate female Eurasian Siskin. Bedazzled observers should try to obtain color photographs for closer analysis.

ACKNOWLEDGMENTS

We thank staff at the British Columbia Provincial Museum, The British Museum (Natural History), the American Museum of Natural History, the Museum of Comparative Zoology at Harvard University, the Museum of Vertebrate Zoology of the University of California at Berkeley, and the Royal Ontario Museum, for access to collections. We also thank Lars Jonsson for his useful comments on the identification problem and his splendid sketch, Kenneth C. Parkes for valuable analyses of collections in the Carnegie Museum, Pittsburgh, Theodore Koundakjian for analysing collections in the Museum of Vertebrate Zoology, C. J. Ralph and Alan Millward for their photographs, and Dan Gibson and A. Debrosse for unpublished information, and Dave DeSante for alerting us to the Arcata birds.

LITERATURE CITED

- AMERICAN ORNITHOLOGISTS' UNION. 1983. Check-list of North American birds. Sixth Edition. Allen Press, Lawrence, Kansas.
- BANKS, R. C. 1970. Birds imported into the United States in 1968. *U.S. Fish & Wildl. Serv. Spec. Sci. Rep. Wildl.* 136.
- BANKS, R. C., AND R. B. CLAPP. 1972. Birds imported into the United States in 1969. *U.S. Fish & Wildl. Serv. Spec. Sci. Rep. Wildl.* 148.
- BLACK, I. H. 1983. Winter field notes - region no. 2. *Rec. N.J. Birds* 9:35-36.
- BLAKE, C. H. 1976. Siskin plumages. *Am. Birds* 30:770.
- BLOCH, D., and S. SØRENSEN. 1984. Yvirlit yvir Føroya Fuglar. Føroya Skulaborkagrunnur, Torshavn.
- BORROR, A. C. 1963. European Siskin (*Carduelis spinus*) in Maine. *Auk* 80:201.
- BOYLE, W. J., R. O. PAXTON, and D. A. CUTLER. 1983. Hudson-Delaware region. *Am. Birds* 37:283-287.
- BREWSTER, W. 1906. The birds of the Cambridge region of Massachusetts. *Mem. Nuttall Ornithol. Club*, No. 4.
- BURROWS, R. 1980. Possible European Siskin? *Osprey* 11:33-34.
- CAMPBELL, B., and E. LACK. 1985. *A Dictionary of Birds*. Buteo Books, Vermillion, North Dakota.
- CASEMENT, M. B. 1977. Landbird summary. *Sea Swallow* 26:15-37.
- CLAPP, R. B. 1975. Birds imported into the United States in 1972. *U.S. Fish & Wildl. Serv. Spec. Sci. Rep. Wildl.* 193.
- CLAPP, R. B., and R. C. BANKS. 1973a. Birds imported into the United States

- in 1970. *U.S. Fish & Wildl. Serv. Spec. Sci. Rep. Wildl.* 164.
- CLAPP, R. B., and R. C. BANKS. 1973b. Birds imported into the United States in 1971. *U.S. Fish & Wildl. Serv. Spec. Sci. Rep. Wildl.* 170.
- CLENCH, M. H., and R. C. LEBERMAN. 1978. Weights of 151 species of Pennsylvania birds analysed by month, age and sex. *Bull. Carnegie Mus. Nat. Hist.* 5.
- DAWSON, I., and K. ALLSOPP. 1986a. Recent reports. *Brit. Birds* 79:215-220.
- DAWSON, I., and K. ALLSOPP. 1986b. Recent reports. *Brit. Birds* 79:263-268.
- DeBENEDICTIS, P., and B. FIEHWIG. 1974. A European Siskin on the Kenosha Christmas Count. *Passenger Pigeon* 36:38.
- FARRAND, J., Jr. (Ed.). 1983. The Audubon Society master guide to birding. Vol. 3. Alfred A. Knopf, New York.
- GREENHALL, M. 1977. Birds imported into the United States in 1973 and 1974. *U.S. Fish & Wildl. Serv. Wildl. Leaflet* 511.
- HOLLOWAY, J. F., and R. H. F. THORNE. 1981. The birds of Fair Isle. Shetland Times, Lerwick.
- JANSSEN, R. B. 1974. Western Great Lakes Region. *Am. Birds* 28:641-645.
- JOHNSON, G. W. 1969. Spotting out-of-place bird is great thrill. *New Bedford (MA) Sunday Standard-Times* 61, No. 16:51.
- MACTAVISH, B. 1986. Northeastern Maritime Region. *Am. Birds* 40:442-446.
- MAIER, L., and M. MAIER. 1974. European Siskin? at Buffalo. *Passenger Pigeon* 36:158.
- MORLAN, J., S. F. BAILEY, and R. A. ERICKSON. 1987. Middle Pacific Coast region. *Am. Birds* 41:322-327.
- NEWTON, I. 1973. Finches. Taplinger Publ. Co., New York.
- NIKULA, B. 1983. Northeastern maritime region. *Am. Birds* 37:844-849.
- NORRIS, R. T. 1983. Banding report: Eurasian Siskin in Rockport, Massachusetts. *Bird. Obs. E. Mass.* 11:172-173.
- OBERHOLSER, H. C. 1974. *The Bird Life of Texas*. 2 vols. University of Texas Press, Austin, Texas. 1063 p.
- PETERJOHN, B. G. 1981. Middlewestern prairie region. *Am. Birds* 35:304-307.
- PETURSSON, G., and E. OLAFSSON. 1984. Sjaldg fir Fuglar a Islandi 1982. *Bliki* 3:15-44.
- PETURSSON, G., and E. OLAFSSON. 1985. Sjaldg fir Fuglar a Islandi 1982. *Bliki* 4:13-39.
- PETURSSON, G., and E. OLAFSSON. 1986. Sjaldg fir Fuglar a Islandi 1982. *Bliki* 5:19-46.
- PETURSSON, G., and K. H. SKARPHETHINSSON. 1982. Sjaldg fir Fuglar a Islandi 1980. *Naturfrøethistofinn Islands, Reykjavik*.
- PYLE, P., S. N. G. HOWELL, R. P. YUNICK, and D. F. DeSANTE. 1987. *Continued on page 1381*

Loggerhead Shrikes were marked with:

- a) a FWS aluminum band during all years;
- b) a red plastic band (0.4 cm wide) on the opposite leg during 1988;
- c) a red and white plastic band on the opposite leg during 1989; and
- d) larger immatures were marked with fluorescent orange on the tail and/or primaries during 1989.

Baird's Sparrows were marked with:

- a) A FWS aluminum band and a colored plastic band during 1988.

Anyone observing these birds should note the location, date, color marker and band combinations and other details of the sighting. Send particulars to KEN DE SMET, MANITOBA DEPARTMENT OF NATURAL RESOURCES, BOX 14, 1495 ST. JAMES STREET, WINNIPEG, MANITOBA, R3H 0W9 or phone (204-945-6301).

Hawk Watch in New England

The New England Hawk Watch will hold a one day conference on subjects related to raptors and raptor migration on Saturday, April 7, 1990 at the Holiday Inn in Holyoke, Massachusetts (the site of previous NEHW conferences). The program is presently in the planning stage. Following the day's events there will be a banquet with Peter Dunne the guest speaker.

For more detailed information and pre-registration write to: HAWKS, P.O. Box 212, Portland, Connecticut 06480.

National Symposium on Urban Wildlife

A national symposium on urban wildlife is scheduled for November 11 to 14, 1990, at the Stouffer Five Seasons Hotel, Cedar Rapids, Iowa. Organized by the National Institute for Urban Wildlife, the symposium will focus the attention of urban planners, landscape architects, developers, city administrators, natural resources biologists, elected officials, and others on the opportunity and need for wildlife and nature conservation in metropolitan America.

The National Institute for Urban Wildlife is a private, nonprofit scientific and education organization dedicated to research, management, and conservation education programs and activities for the benefit of people and

wildlife in urban, suburban, and developing areas.

For more information, contact Dr. Lowell Adams, Symposium Program Chairman, National Institute for Urban Wildlife, 10921 Trotting Ridge Way, Columbia, MD 21044 (301-596-3311).

Eurasian Siskins

Continued from page 1274

Identification Guide to North American Passerines. Slate Creek Press, Bolinas, California.

RIDDIFORD, N. 1984. Fair Isle Observatory Report No. 37. Fair Isle Bird Observatory Trust, Edinburgh.

RIDGWAY, R. 1901. The birds of North and Middle America. Part I. Family Fringillidae—the finches. *U.S. Nat. Mus. Bull.* 50.

ROBERSON, D. 1980. Rare Birds of the West Coast. Woodcock Publications, Pacific Grove, California.

RYAN, R. 1981. Ask Dick Ryan. *Birding* 13:156-157.

SCOTT, S. L., ed. 1987. Field Guide to the Birds of North America. National Geographic Society, Washington, D.C. 464 p.

SELLERS, R. M. 1986. Biometrics of the Siskin *Carduelis spinus*. *Ring and Migration* 7:99-111.

SHARROCK, J. T. R. 1976. The Atlas of Breeding Birds in Britain and Ireland. T. & A. D. Poyser, Berkhamsted, England.

SVENSSON, L. 1984. Identification Guide to European Passerines. Third ed. Publ. by author, Stockholm, Sweden.

THOM, V. M. 1986. Birds in Scotland. T. and A. Poyser, Calton, Scotland.

TINGLEY, S. 1983. Northeastern maritime region. *Am. Birds* 37:967-970.

TUCK, G. S. 1973. O.W.S. Landbird observations—1970/1971. *Sea Swallow* 22:27 (plus Table B facing p. 24).

WEIR, R. D. 1988. Ontario Region. *Am. Birds* 42: 256-261.

WITHERBY, H. F., F. C. R. JOURDAIN, N. F. TICEHURST, and B. W. TUCKER. 1943. The Handbook of British Birds. Witherby, London.

WOODCOCK, J. 1974. Pine Siskin in aberrant plumage. *Passenger Pigeon* 36:158.

—Biology Department, Dalhousie University, Halifax, N.S. B3H 4J1 (McLaren); 417 Talbot Ave., Albany, CA 94706 (Morlan); South Florida Research Center, Everglades National Park, P.O. Box 279, Homestead, FL 33030 (Smith); Ornithology Section, National Museum of Natural Science, P.O. Box 3443, Sta. D, Ottawa, Ont., Canada K1P 6P4 (Gosselin); Department of Ornithology and Mammalogy, California Academy of Sciences, San Francisco, CA 94118 (Bailey).

Explore

THE WORLD WITH

Questers

Travel with a purpose. Search out plants and animals, birds and flowers. Investigate art and antiquities. Study rain forests, mountains and tundra, seashores, lakes and swamps. With Questers you have time to photograph, absorb, reflect. Your guide is a naturalist, tour parties are small, accommodations first-class.

Our current Directory of Worldwide Nature Tours describes 37 tours to the Americas, Europe, Asia, Africa, Oceania and Australasia. Among them are Alaska, Galapagos, Patagonia, Iceland, Spain, Scotland, Japan, Bhutan, China, Madagascar, Tanzania, Australia, New Zealand, Hawaii and the U.S.S.R. Learn about them all.

Send for
Questers World

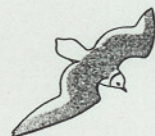


name _____
address _____
city _____ state _____ zip _____

Dept. AB
257 Park Ave. South
New York, NY 10010
(212) 673-3120

QUESTERS
Worldwide Nature Tours

DUTCH BIRDING



Quarterly journal
for every keen
birder!

- Excellent papers on identification, distribution, movements and behaviour of Palearctic birds.
- Latest news on rare birds in the Netherlands and Belgium.
- In English or with English summaries.
- Well produced with numerous high quality photographs.

For information write to:
Dutch Birding, Postbus 5611,
1007 AP Amsterdam,
Netherlands.

Subscribers to *Dutch Birding* can claim 25% off a *British Birds* subscription.