

HISTORY OF THE COMMON ROSEFINCH IN BRITAIN AND IRELAND, 1869-1996

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Common Rosefinch *Carpodacus erythrinus*
(D. I. M. Wallace)

ABSTRACT Forty-five years ago, the Scarlet Grosbeak *Carpodacus erythrinus* was one of those birds that (supposedly) you had to go to Fair Isle to see. It was there, on 13th September 1951, that I visually devoured my first dumpy, oddly amorphous but beady-eyed example, as it clumped about in the same crop as an immature Black-headed Bunting *Emberiza melanocephala*.

Both were presented to me by the late Professor Maury Meiklejohn, with the nerve-wracking enjoinder 'I can see the rosefinch's bill and wingbars, Ian, but you will have to help with the bunting. I need to know its rump and vent colours. I'm colour blind.' That night, the late Ken Williamson commented 'Grosbeaks are classic drift migrants' and I remember, too, some discussion between him and the other senior observers concerning the (then still unusual) cross-Baltic movements to Sweden in spring. Not for a moment, however, did they consider that the species would one day breed in Britain.

In 1992, when the Common Rosefinch, as it is now called, bred successfully at Flamborough Head, East Yorkshire and on the Suffolk coast, its addition to the regular breeding birds of Britain seemed imminent. No such event has ensued.

Since the late 1970s, the number of British and Irish records has grown so noticeably in spring that this trend, and particularly the 1992 influx, are likely to be associated with the much-increased breeding population of southern Fenno-Scandia. The most recent expansion of range from the Low Countries to northern France may, however, be a better platform for permanent colonisation than periodic mass crossings of the North Sea.

In the meantime, the bird still shows the rather enigmatic behaviour that has for 127 years characterised its British history, which is here re-examined in the light of its westward spread across Europe.

The genus *Carpodacus* (rosefinches) is the largest of the family Fringillidae (true finches) in the Holarctic. It is also the third-largest in the World, with only the more cosmopolitan *Serinus* (serins) and *Carduelis* (linnets and allies) being more diverse. The radiation within the genus *Carpodacus* is the more remarkable, given the restriction of most of its members to scrubby mountainside and damp taiga habitats in the ceiling of Asia, along the boundary between the East Palearctic and Oriental Regions (Vaurie 1959; Clement *et al.* 1993).

In the West Palearctic, only four species of rosefinch occur, and only one is widely and continuously distributed: the Common Rosefinch (formerly called Scarlet Grosbeak and then Scarlet Rosefinch) *C. erythrinus*. It is also by far the most dynamic member of its tribe, having escaped two genetic constraints. It has adapted to less-elevated and drier habitats, which usually it enters in late May and in which typically it may spend as few as ten weeks, and it has become an exceptionally rapid, long-distance migrant, postponing its moult until settled on its wintering grounds. Among its congeners, these changes in behaviour have been approached only by the Purple Finch *C. purpurea*, which occupies the whole breadth of the Nearctic taiga. These two species have been regarded as forming a superspecies, but are not difficult to distinguish (see Appendix 3).

Having in the last two centuries pushed west from the southeastern sector of the Baltic Region, the nominate race of the Common Rosefinch now seems set on joining the community of regular summer visitors to most of central and north-western Europe. If it consolidates its footholds on the coasts of the southeastern North Sea and also secures Britain and Ireland, it will occupy (with its eastern counterform *grebnitskii*, which reaches Sakhalin) the third-widest range of any Palearctic finch. In its potential longitudinal distribution from 10°W to 140°E, it is

poised to outreach from a winter range in the Indian subcontinent such classic long-distance migrants of the Afro-Palearctic system as the Yellow Wagtail *Motacilla flava* and the Willow Warbler *Phylloscopus trochilus*. This will be no mean feat for a member of an originally montane genus.

The bulk of this paper is primarily concerned with setting the British and Irish records of the Common Rosefinch into the general context of the species as set out above, and particularly against the most recent assessments of its Western Palearctic population.

MIGRANT HISTORY OF THE COMMON ROSEFINCH

Pushing west across north temperate Europe are a dozen or so species of small, predominantly Asian passerines. Seen only from the traditional British viewpoint of autumnal migration studies, these birds have long been labelled 'drift' or 'reversed' migrants. In the full context of each species' potential, however, they may actually be reoccupants of prior ranges or pioneers of new beneficial distributions still opening up in the current interglacial period.

Of these species, none has been known longer as a British bird than the Common Rosefinch. Its westward vagrancy has been detected in Europe for nearly two centuries. Among the first dated records of essentially Asian passerines in Britain (Witherby *et al.* 1938; Naylor 1996), only those of White's Thrush *Zoothera dauma*, Dark-throated Thrush *Turdus ruficollis*, Yellow-browed Warbler *Phylloscopus inornatus* and Rosy Starling *Sturnus roseus* appear earlier.

The European history of the Common Rosefinch includes two periods of westward range expansion and subsequent extralimital breeding and colonisation. Newton (1972), Bozhko (1980) and Isenmann (1994) all referred to a first wave of birds that flowed out of Russia early in the nineteenth century – reaching southeast Finland, eastern Germany, and what were

then the Czech and Austrian parts of the Austro-Hungarian Empire – but it later ebbed from all but Finland, when, between 1856 and 1897, a once-rare bird became quite common (Dresser 1897).

A second surge started in the 1930s, or perhaps one or two decades earlier if the first noticeable fall and annual run of British vagrants is not to be ignored (see below). This expansion of range showed a strong pulse in the 1960s, and there have since been marked increases in population sizes within all the areas newly colonised, but particularly in the Baltic countries (Isenmann 1994; see also below). These regions, which lie mainly to the north and west of the long-established Finnish community, are shown in fig. 1. Other, wider distributions have been sketched (e.g. Burton 1995), but, as the rosefinch tends to

disappoint optimistic commentators, I prefer to be conservative in this paper.

How do the essentially peripheral British and Irish records of vagrant Common Rosefinches relate to the changes in area and scale of its European population? To try to shed light on this question, the records are summarised below in three periods, each of roughly 40 years. The re-examination of the seasonal occurrence patterns takes into account all previous reviews, but rests mainly on the full list of ancient (pre-1958) records listed by Naylor (1996) and modern (1958 and subsequent) occurrences maintained by *British Birds* (e.g. Rogers *et al.* 1998; Fraser *et al.* 1999).

1869 TO 1914 (46 YEARS)

The first known vagrant was caught near Brighton, Sussex, in late September 1869.

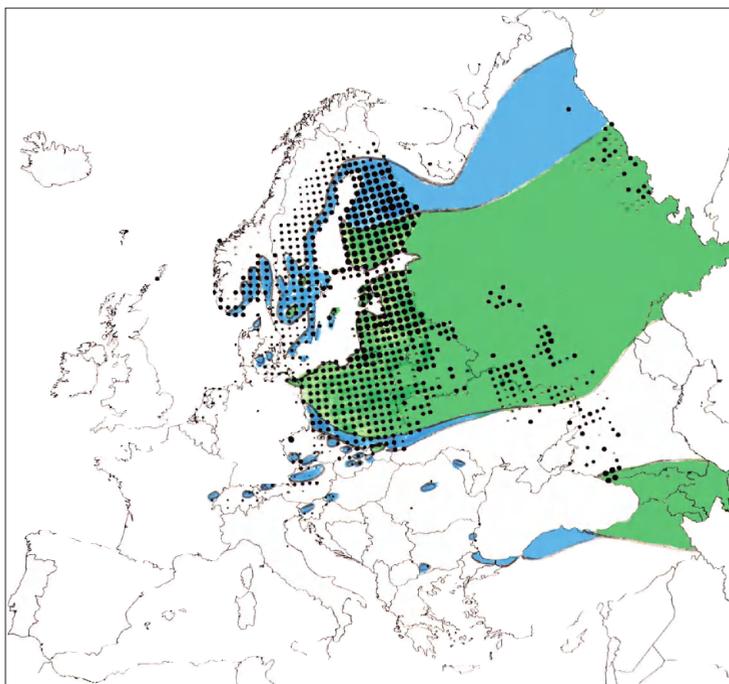


Figure 1. Extension of breeding range of Common Rosefinch *Carpodacus erythrinus* in the West Palearctic since the late 1950s.

The map is taken from the *EBCC Atlas of European Breeding Birds* (Hagemeijer & Blair 1997), but, to demonstrate the essentially northern and western spread of the species, it has been overlaid with the ranges shown by Voous (1960; pale green) and *BWP* (1994; pale blue).

The dots lying outside the shaded areas indicate the most recent extensions of range. Where these are seemingly directed south of west, the numbers of pioneers are invariably small (see text). The stronghold community still lies against the eastern coast of the Baltic Sea. Those that now reach the areas east of the Sea of Azov and in extreme southeast Europe could be of the race *kubanesis* (see text).

The second was limed on Hampstead Heath, then Middlesex, on 5th October 1870. The third was an adult male near Glaswm, then Radnorshire, in about 1875. The fourth was a certain female, caught at another traditional bird-trapping site, at Great Yarmouth, Norfolk, on 3rd September 1892 (and kept alive in captivity until June 1896). The wholly southern distribution of these records and the two inland localities are, in retrospect, remarkable, showing how differently (from today's observations of uncommon birds) the nineteenth-century preoccupation with hunting for collection and human gain presented information on bird distribution.

There followed an apparent absence of 14 years, but, during 1906-14, another marked change in hunting for specimens – the early exploration of eastern and northern islands, from Holy Island, Northumberland, around to St Kilda, Outer Hebrides – produced a small flood of records, numbering no fewer than 34 individuals. The only one in spring, the first certainly recorded for that season, was on Fair Isle on 18th May 1912. The rest were all found during the period 30th

August to 3rd October, and no fewer than 17 of them occurred in 1913. In the same period, a night-migrant was caught at the lantern of Tarbatness Lighthouse, Ross & Cromarty, on 8th September 1912, and inland in England there were even more intriguing records, with one in Oxfordshire on 31st January 1912 (since doubted) and a male at Titchfield, Hampshire, on 13th August 1913. Did the last, dated well ahead of the normal September peak of autumn occurrences, and the earlier Welsh bird already hint of a status other than autumn vagrant?

1915 TO 1956 (42 YEARS)

In this period, the Common Rosefinch was entirely absent from the national record during the six years 1915-20, and only one undoubted occurrence survives from the nine years 1939-47, indicating not necessarily its failure to reach our lands, but certainly the disruption of rarity-seeking and observation caused by the two World Wars. In the period between them, three were found in 1921, from one to three annually during 1924-31 and from one to five annually during 1935-38. It was during

Table 1. Seasonal numbers of Common Rosefinches *Carpodacus erythrinus* in Britain and Ireland, 1869 to 1996 (adult males in brackets after total for each season).

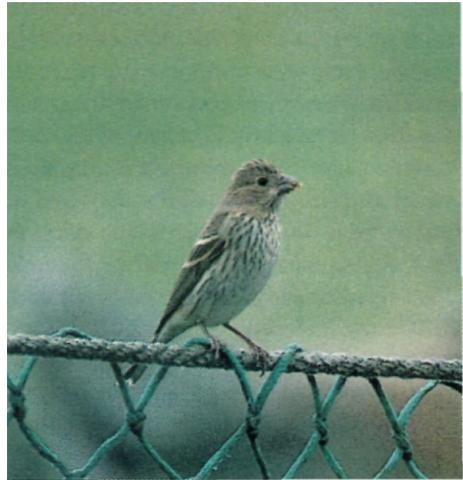
Years	Late spring (May, June)	Summer (July)	Autumn (Aug.-Nov.)	Winter (Dec.-Feb.)	Early spring (March, April)	No precise date	Total	Birds per year
1869-1914 (46)	1		38	1		1	41	0.9
1915-56 (42)	4 (4)		86 (1)	5 (1)	1		96	2.3
1869-1956 (88)	5 (4)		124 (1)	6 (1)	1	1	137	1.6
SEASONAL SHARE %	3.6		90.5	4.4	0.7			
1957-1961	1 (1)		28				29 (1)	5.8
1962-1966	5 (1)		43 (1)				48 (2)	9.6
1967-1971	16 (7)	1 (1)	76	1			94 (8)	18.8
1972-1976	27 (12)	1	165		2 (1)		195 (13)	39.0
1977-1981	61 (14)	3 (1)	198				262 (15)	52.4
1982-1986	124 (20)	2 (1)	203 (1)	1			330 (22)	66.0
1987-1991	204 (51)	18 (6)	321 (4)	2	1		546 (61)	109.0
1992-1996	369 (70)	9 (6)	313 (1)	1			692 (77)	173.0
1957-96 (40)	807 (176)	34 (15)	1,347 (7)	5	3 (1)		2,196 (199)	56.3
SEASONAL SHARE (%)	36.7	1.6	61.3	0.2	0.1			

these last years that Fair Isle became the *locus classicus*. There, observers and collectors such as George Stout and John Stenhouse took on the earlier mantles of William Eagle Clarke and the Duchess of Bedford and produced a minimum of 22 dated occurrences between August and 23rd October and, surprisingly, five others dated from 4th to 21st November.

Elsewhere in the 1920s and 1930s, there was a marked lack of more widespread occurrences, with none in England and only two on the Isle of May, Fife, which initially had seemed set to vie with Fair Isle for the most occurrences of this species. It is likely, however, that the full Shetland record of the Common Rosefinch from 1915 to at least 1936 has been lost. Shetland's other rival to George Stout of Fair Isle was Sam Bruce of Whalsay. Only five Shetland birds are now precisely attributed, all in September and early October 1936, but it should not be forgotten that Bruce regarded it as an occasional autumn vagrant, of which the 1936 quintet were only 'recent' examples (Waterston 1937; Venables & Venables 1955).

There were other even-more-tantalising Shetland records: early spring birds on Fair Isle on 2nd April 1926 and 7th April 1944, an adult male seen but not shot by Colonel Richard Meinertzhagen at Lunnansness, Mainland, on 29th August 1940 and, most fascinating of all, three on Fair Isle on 11th January 1930 and an adult male seen there 'at very close quarters' by George Stout on 9th February 1945. All of these have now been muddled by doubts (Dymond 1991, contra BOU 1971), although, as will be demonstrated later, the species has the ability to winter extraliminally and, as noted above, had already appeared on Fair Isle as late as 21st November. Even more tellingly, in 1945, one did survive our winter successfully, to be found near Fowey, Cornwall, during 9th-15th February (and remains fully accepted).

With the ornithological reoccupation of Fair Isle from 1948, the status of the Common Rosefinch was quickly re-estab-



168. Juvenile Common Rosefinch *Carpodacus erythrinus*, Out Skerries, Shetland, September 1994. (J. F. Cooper). A typical autumn migrant.

lished there as that of an autumn vagrant, occurring in every year except 1956 and in numbers, up to four, except for a remarkable 13 in 1954. Elsewhere, modern bird-hunting in the form of systematic searching for migrants at other observatories and similar sites soon produced records. A first-year male on Skokholm, Pembrokeshire, on 26th June 1949 became the second for Wales (and the second undoubted spring record). It was followed by other males at Dunrossness, Shetland, in early June 1954; and Durigrath, Shet-

169. Adult male Common Rosefinch *Carpodacus erythrinus*, Bardsey, Gwynedd, 31st May 1996 (Ian Fisher). Note restricted 'hood' and bleached upper wingbars.



land, on 3rd June 1955; and on Mainland, Orkney, on 29th May 1957. Also away from Fair Isle, there were autumn birds on Foula on 16th September 1954; three on the Isle of May, one as late as 23rd October 1955; in Somerset on 5th October 1952 (the first one in autumn in the southwest); and at Spurn Point on 16th September 1955. In 1954, the second-largest influx yet provided the first for Ireland, on Tory Island, Co. Donegal, on 8th September. After a seeming delay of 41 years, the bird had once again demonstrated its ability to spill through the Northern Isles and push on farther west.

It is impossible to assess accurately the status of the Common Rosefinch during the first 87 years of its British history. It had been subject to at least three different modes of observation and many switches in island searches.

In the nineteenth century, it may have been a truly rare vagrant, being outnumbered for example by a normally sedentary finch, the Parrot Crossbill *Loxia pytyopsittacus*, and the then most obvious Asian vagrant, the White's Thrush, but how many were then reaching the Northern Isles unseen? In the early twentieth century, the widespread influx to those places in the autumn of 1913 remains exceptional, the nine birds on Auskerry, Orkney, during 31st August to 30th September constituting the first major and still amongst the largest recorded autumn island concentrations of migrant Common Rosefinches. It seems odd that this particular influx has passed without prior comment, since it surely reflected a year of unusual breeding success or migratory vigour (or both) and stood as a record level of occurrence for 53 years.

In retrospect, the 34 in autumn in Britain during 1906-14 present a contradiction to the reported contemporaneous retreat of the species from most of eastern Europe. Could they have stemmed directly from the never-faltering population of southeast Finland, or, less likely, the initial contingent that re-penetrated Poland in the

1900s (see below)? Yet, in the 1930s, there was no sign of the surge around and across the southern Baltic Sea, unless it be those unusual November records on Fair Isle in 1925, 1926 and 1931 and the three wintering there in 1929/30.

In 1938, *The Handbook* pronounced this species to be an 'irregular autumn visitor of recent years' to Scotland, effectively only repeating the verdict of Wardlaw-Ramsay (1923). No other status will ever be proved, but the full ancient record does contain hints of occasional overshooting in late spring and of both winter and early-spring occurrences. These seemingly aberrant records featured again during and immediately after the Second World War. Others like them would appear in the modern record. The number and seasonal pattern of the ancient records is shown in the upper part of table 1 (on page 448). It should be noted that the work of Naylor (1996) showed that the only previous assessment of the number of pre-1958 occurrences, at 200-300, made by Sharrock & Sharrock (1976) and repeated by Dymond *et al.* (1989), was exaggerated. The actual number remains imprecise, still being plagued by erratic references for Fair Isle, where the official Observatory total for 1906-49 is not less than 47, but does not include about nine listed by Naylor (1996), who, in turn, has not listed at least nine others in the Observatory files. The total for Britain and Ireland up to 1956 is not less than 139 and probably not more than 148, certainly nowhere near '200-300'.

1957 TO 1996 (40 YEARS)

In 1957, a male appeared in Orkney on 29th May and three reached Fair Isle in mid September. The Common Rosefinch was never again to miss a year in Britain, although the annual number remained in single figures until 1964. In a clear reflection of its northeast European success, the bird went on in the 1960s to present two distinct changes in occurrence pattern. First, late-spring arrivals became annual from 1963; secondly, a substantial increase



in autumn appearances began in 1966, when 18 were seen (and the record count of 17 in 1913 was finally beaten).

During the same period, the description of the Common Rosefinch as a rather hapless 'down-wind drift' migrant came not to suit all British ornithologists. Only five years after the onset of annual records, Nisbet

(1962) – in the then and still most trenchant criticism of the Fair Isle saga of autumn migration – demonstrated that the arrivals in the far north were far more regularly associated with northerly winds and falling or low temperature over Germany than with any other weather vector. Nisbet further suggested that rosefinch movements across the North Sea were executed by westward flights around the northern flanks of depressions centred over southern Scandinavia. Some of us who, unlike Nisbet, had actually witnessed the apparently miraculous falls on Fair Isle from 'drift along a foggy southeasterly' were appalled, but when, after another five years, Dolnik & Shumakov (1967) demonstrated that rosefinches were among the passerine migrants to present reversed standard headings in night-sky exposure experiments, the debate quickly ceased. Clearly, the cause of the rosefinches' increasingly westward dispersal was much more complex than brief changes in the relatively local weather of the northern sector of the North Sea.

Looking at the evolving pattern of occurrence after the 1966 and 1967 autumn influxes of 33 birds, I. J. Ferguson-Lees and I (in Smith *et al.* 1968) pointed out not just the rise in numbers, but also their wider, more southerly geographic and later-dated spread. We also wondered whether birds

from eastern (Asian) populations might be involved in the later autumn records, but no proof of this possibility has ever been obtained (see Appendix 2 for discussion of the limited racial differences). Later authors have concentrated on the continuing rises in numbers in spring and autumn and their distribution by county. None linked the upsurge in the mid 1960s directly to the contemporaneous pulse in the east European population, but, as already noted, it was the obvious engine for the increased British occurrences.

The southward shift in the geography of the modern records is most easily appreciated by a comparison of the maps in Sharrock (1974), Sharrock & Sharrock (1976) and Dymond *et al.* (1989), the last of whom dealt with all modern records up to 1985. It falls to me to extend the seasonal summaries of rosefinch occurrences up to 1996 (see the lower part of table 1). It should be noted that the five-year periods begin not in 1958 but in 1957, thus allowing the run of eight half-decades of unbroken annual appearance to be analysed, and that the figures included for 1996 are incomplete. Birds reaching Ireland up to 1996 number 73, or 3.3% of the total up to that year. Their occurrence rate during 1987-96 is 4.6 per year or, surprisingly, only 1.6% of the last decade's rush of migrants (Irish Rare Birds Committee 1998).

The geographic distributions of records in spring and autumn during 1958-96 are shown in figs. 2 & 3 (on page 452). The main change in the spring (up to June) pattern of distribution since 1985 has been the bird's appearance in at least 11 more regions of Britain and five of Ireland, in which latter country there had been no prior spring records. In Scotland, spring rosefinches are now noticeably widespread, having reached five more regions than autumn birds. The changes in the autumn (including July) pattern of distribution since 1985 are not so marked, but birds have now appeared in all but one of the east-facing and south-facing coastal



Figures 2 & 3. Geographical distribution by vice-counties of occurrences of Common Rosefinch *Carpodacus erythrinus* in Britain and Ireland in spring (left) and autumn (right) during 1958-96 (supplied by Peter Fraser).

vice-counties and have also reached four counties in northwest England and southern Scotland, the Isle of Man and two more Irish counties. It is salutary to recall that, for the first decade of modern rarity recording, 1958-67, the map in Sharrock (1974) showed the Common Rosefinch in only 12 counties of Britain and Ireland. By 1996, it had reached over five times that number of vice-counties.

In addition to the 1960s onset of annual spring records and first substantial and lasting increase in autumn arrivals already noted, there have been other apparently significant events. In 1972, there was another jump in the number of autumn records, with 36 individuals. In only four later autumns would there be fewer than 30 in that season, but, surprisingly, the short-term trend of Common Rosefinch occurrences was completely unaffected by the then seemingly miraculous autumn vectors of 1975 and 1976. Once again, it was clear that mere weather-related vagrancy factors were not the prime cause of its appearance and it was not until the relatively unsung year of 1977 that a new autumn record of 55 birds was set. This

was almost matched by 54 in 1980, but not surpassed until 71 in 1988.

Interestingly, 1977 also saw the first spring double-figure influx, with 15. From 1981, the trend of rapidly increasing spring arrivals became firm, with 45 in 1984 and 64 in 1988 representing new peaks. The coincidence of both a spring and an autumn peak in 1988 produced the first three-figure total in any year: 135. Only in 1990, with 96, has that level of annual occurrence not been reached since.

In 1988 and 1989, autumn records mounted rapidly, to 71 and 93 respectively, the latter peak being matched in 1994, but the only real surprise of the modern period was the dramatic spring invasion of 1992. At first measured as 80, then 130, and finally at least 156 birds, this influx was sustained over two full months throughout the UK; it remains more than twice as large as any other spring arrival, except 1995, when there were 98. Even more strikingly, it was far higher (by 68%) than any autumn arrival. For spring overshoots to outnumber autumn vagrants was not unprecedented; such a balance between the two seasons had already occurred in 1984

Table 2. Changes in occurrence pattern of Common Rosefinch *Carpodacus erythrinus* in Britain and Ireland in spring and autumn, 1957-96.

Records incomplete for 1996; 'late-spring' records include three in July.

	1957-61	1962-66	1967-71	1972-76	1977-81	1982-86	1987-91	1992-96
INDEXED AGAINST ALL 1977-81 RECORDS (262)								
Late spring	0.4	1.9	6.5	10.7	24.4	48.1	84.5	144.3
Autumn	10.7	16.4	29.0	63.0	75.6	76.3	122.5	119.5
INDEXED AGAINST 1977-81 SEASONAL TOTALS (64; 198)								
Late spring	1.6	7.8	20.6	43.8	100.0	196.9	346.9	576.6
Autumn	14.1	21.7	38.4	83.3	100.0	102.5	162.1	158.0

and 1987 and has recurred in 1993 and 1995.

What was unexpected, however, was the continuing strength of the spring influxes during 1993-96. For the first time ever, the half-decade spring total of at least 369 substantially outnumbered the equivalent autumn figure of at least 312. Thus, while the rosefinch's recent occurrence pattern may not have changed radically from that described by earlier authors, all of whom associated spring birds with the westward advance of Baltic breeding birds over at least six decades and autumn ones with reversed migration, the current predominance of the former does suggest unusually dynamic behaviour on spring passage. This is further addressed below.

THE CHANGING PATTERN OF SEASONAL OCCURRENCE

As the random timings of the major spring and autumn events described above show, the observed occurrence pattern of the rosefinches remains markedly haphazard. In only five years has a strong spring arrival presaged an unusually large autumn influx; only three marked autumn passages have been followed by exceptional spring influxes; in only three years have both movements increased noticeably. There is thus no real sign that, in their first autumn, even large year-classes are especially prone to 'reversed migration' or that they push on westwards again in their first summer.

In addition, it is clear that the rate of increase in seasonal occurrence varies from half-decade to half-decade. Table 2 demonstrates this, showing the five-year totals for the species' two main seasons from 1957 onwards, indexed against the 1977-81 figures. The dramatically faster growth of the spring overshoots is made particularly obvious by these comparisons. Separate examination of the incidences of fully adult, red males in spring sheds no light on the reasons why that season's influxes have so accelerated. Since 1967-71, when they made up 47% of those in spring, red males have become relatively scarcer, recently contributing only 17%-34% annually. The inference in the *EBCC Atlas of European Breeding Birds* (Hagemeijer & Blair 1997), that young males are the chief pioneers of new breeding distribution, appears sound. Certainly, they have outnumbered adult males by over 2 to 1 in the British breeding records, as demonstrated in table 4, but their true incidence in late spring and summer records remains shrouded by the incomplete information on ageing and sexing.

In terms of individual annual gains, the virtual doubling of all records from 1986 and 1987, in total 141, by those in 1988 and 1989, in total 268, represents the highest over two years, but it is difficult to believe in any connection between the latter apparently abundant year-classes and the sudden spring 'flood' in 1992. Most of their numbers are unlikely to have survived



170. Adult male Common Rosefinch *Carpodacus erythrinus*, The Hague, Netherlands, July 1987 (Mike Weston). Note pink-red rump.

three or four years before retracing their first extralimital journey. It is also noteworthy that all the spring peaks of occurrence have been subject to immediate collapses, by around 50% in the first subsequent year and 50% to 25% in the second. So, even experienced adults apparently fail to sustain their reach (or over-reach).

Taking into account all records, it appears that a peculiarly dynamic species of finch is throwing itself at Britain and Ireland at an uneven but still growing rate. It is no longer just a classic autumn 'drift' or 'reversed' migrant and uncommon spring 'overshoot'. From 1992, it has first poured and then annually streamed across the North Sea in May and June; it summers annually, and, regardless of the doubts expressed on the old winter records, a few have reappeared in winter and just as surprisingly in early spring. In autumn, the pattern is still 'typical of an eastern vagrant, pointing to an arrival across the North Sea, followed by a proportion of birds drifting southwest' (Dymond *et al.* 1989). The recall of 'drift migration' in this description is intriguing. As has already been noted, that stratagem is firmly denied the rosefinch in the context of a North Sea crossing; yet it has been (perhaps unconsciously) reinvoked as an explanation for onward passage through and across Britain

on a southwesterly (not northwesterly) heading, still 90° off the species' standard direction.

'If lost, go with the flow' may be a somewhat late and despairing apology for the original concept of Ken Williamson, but, if a species has to adapt its innate migratory behaviour in an emergency or correct a

mistake, its immediate survival will be most advantaged by following other more-correctly oriented birds along their paths. Certainly, there are still no widespread signs in the rosefinch's autumn occurrence pattern of mounting passage to the Hebrides, where it remains erratic, or to the Faroe Islands and Iceland, where it is classed as an accidental (Cramp & Perrins 1994). In the former archipelago, only 320 km northwest of Shetland, there had been none up to 1948 and only one in spring and three in autumn since then (Williamson 1948; Clement *et al.* 1993). Only in Iceland, another 400 km farther to the northwest (and so more aligned to the species' preferred line of advance), has there been any upsurge similar to that in Britain and Ireland (Cramp & Perrins 1994); there, the total number of records had reached 29 by 1989 and 43 by 1996 (Gunnlaugur Pétursson *in litt.*). Once again, the local difficulties of divining the true occurrence pattern of the rosefinch are evident.

Nevertheless, the whole story tells of an extraordinary, generically aberrant passerine that has been extending its distribution westwards in a second, at least 70-year-long population surge, but which is also at the extreme end of its migratory capabilities.

JOINT OCCURRENCE PATTERNS OF ROSEFINCHES AND FELLOW-TRAVELLING SPECIES

It seems odd now, but 20 years ago there was still some doubt about the reality of the increase in rosefinch occurrences. Sharrock & Sharrock (1976) were concerned to demonstrate whether the phenomenon was actually greater than that to be expected from the generally increased activity of migrant-seeking birdwatchers. Reviewing the 1958-72 records, they noted that, as Fair Isle's recording practice was relatively fixed, the 15-year trend towards increasing occurrences there was certain, and thus the similar national trend was also likely to be genuine (see also below).

Laudably, Sharrock & Sharrock (1976) also introduced general tests of the recent and long-term trends in rarity numbers, arguing essentially that, for a rare or uncommon bird to be safely accredited with a real increase, the growth in the number of its records should exceed that for all such birds. Against all Palearctic rarities during 1958-72, the Common Rosefinch did not unquestionably pass the test for recent 'steady increase', but it probably did so. (Against all rarities up to 1958, it showed little change in trend and could even have been decreasing. This assessment must now be discarded, owing to the exaggeration of the total number of ancient

records included in the Sharrocks' calculation but corrected above.) For the years since 1973, it has become difficult to repeat the Sharrocks' recent-trend test. In the first decade to 1982, it appears that the number of occurrences of rare Palearctic species grew by at least 34% and the number of rosefinches increased by at least 66%. Thereafter, the changes in rarity classification and, above all, the continuing lack of an accurate annual measurement of rarity hunting (in all its modes) makes me shy of extending their analyses.

Instead, I have looked at the trend of occurrence of the Common Rosefinch in relation to the general trend for the other passerines that are known to be extending their breeding ranges to the west. Drawing on the conclusions of Burton (1995), I judge there to be 12 such species. Table 3 summarises their records and those of the rosefinch in the three periods analysed by Sharrock & Sharrock (1976), Dymond *et al.* (1989) and myself. Clearly, the rosefinch has always been and remains by far the commonest of the group, with its share of all recent group records rising from 54% in the 15 years 1958-72 to 60% in the next 13 and up to 69% during 1986-95. By using the annual average number for these three

Table 3. Changes in the annual occurrence rates (birds per year in Britain and Ireland) of 12 passerines breeding sympatrically with Common Rosefinch *Carpodacus erythrinus* in Finland and/or North Russia.

* Lanceolated Warbler *Locustella lanceolata*, Paddyfield Warbler *Acrocephalus agricola*, Blyth's Reed Warbler *A. dumetorum*, Booted Warbler *Hippolais caligata*, Penduline Tit *Remiz pendulinus*.

** Citrine Wagtail *Motacilla citreola*, Thrush Nightingale *Luscinia luscinia*, Red-flanked Bluetail *Tarsiger cyanurus*, River Warbler *L. fluviatilis*, Greenish Warbler *Phylloscopus trochiloides*, Rustic Bunting *Emberiza rustica*, Yellow-breasted Bunting *E. aureola*.

	BRITAIN AND IRELAND				FAIR ISLE ONLY				Ratio of (g)/(d)
	(a) 1958-72	(b) 1973-85	(c) 1986-95	Ratio of (c)/(a)	(d) 1958-67	(e) 1968-77	(f) 1978-87	(g) 1988-96	
Five species* showing higher increases in annual rate than Common Rosefinch:	0.9	5.6	18.6	20.7 (10.3-84.0)	0.5	1.2	1.7	3.1	6.2
Common Rosefinch	13.9	51.8	140.9	10.1	3.0	17.5	15.0	74.4	24.8
Seven species** showing lower increases in annual rate than Common Rosefinch:	11.2	28.5	44.4	4.0 (3.8-6.0)	2.0	6.4	9.2	9.2	4.6 (2.2-6.7)
All 13 species	26.0	85.9	203.9	7.8 (3.8-84.0)	5.5	20.1	25.9	36.7	6.7 (2.0-8.2)

unequal periods of complete counts, the specific rates of occurrence can be compared. These vary widely, but the rosefinch continues to outnumber all its sympatric fellow-travellers. Interestingly, however, the rosefinch's rates of periodic increase for 1973-85 and 1986-95 are not individually the highest in those periods. In the first, the records of Lanceolated *Locustella lanceolata* and Paddyfield Warblers *Acrocephalus agricola* and, in both, those of Blyth's Reed *A. dumetorum* and Booted Warblers *Hippolais caligata* and Penduline Tit *Remiz pendulinus* actually grew faster. Of the 12 other sympatric passerines coming along the rosefinch's tracks, at least the last-named three could be said to be gaining on it, but admittedly from a long way back.

One further aside may be warranted. The close temporal association of three of the seven pre-1945 Lanceolated Warblers and at least six of the nine or ten pre-1945 Blyth's Reed Warblers with rosefinch arrivals suggests that, although the rosefinches often appear to be rather unrelated to falls of other species, they may indeed all stem from Finland and northern Russia. As demonstrated below, these areas clearly form the 'stronghold community' from which the westward expansion of most members of the group apparently originate.

In their demonstration of recently changed avian ranges in Europe, Sharrock & Hildén (1983) picked out two essentially eastern passerines as largely increasing. These were Blyth's Reed Warbler (in four

out of six reporting countries) and the rosefinch (in ten out of 13). Finally, Vini-combe & Cottridge (1996) have added further precision to Burton's (1995) conclusions and have detailed marked westward expansion – within the areas invaded by the rosefinch – by Citrine Wagtail *Motacilla citreola*, Thrush Nightingale *Luscinia luscinia*, Red-flanked Bluetail *Tarsiger cyanurus*, River Warbler *Locustella fluviatilis*, Paddyfield Warbler, Blyth's Reed Warbler, Greenish Warbler *Phylloscopus trochiloides*, Penduline Tit and Rustic Bunting *Emberiza rustica*. Thus, Lanceolated Warbler and Yellow-breasted Bunting *Emberiza aureola* appear to be the only two species in the group whose British records lack the engine of new or enlarging European populations and so must come from farther east than rosefinches and the other nine species.

RECENT OCCURRENCE PATTERN OF ROSEFINCHES ON FAIR ISLE

Although Dr R. Riddington (*in litt.*) has made the fascinating observation that, because of changes in its crops, Fair Isle's recent suitability to rosefinches may actually have fallen – as it has for sparrows *Passer* – it is still true that more of them appear regularly there than anywhere else. Fair Isle's share of all those reported in Britain and Ireland was 54% up to 1958, 33% in the next decade, then 28% and finally 17% during 1988-97.

Since 1973, three resident observers (covering Fair Isle systematically within

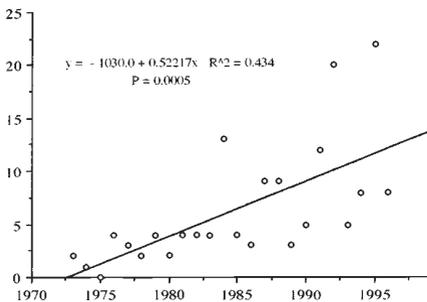


Figure 4. Spring totals of Common Rosefinch *Carpodacus erythrinus* on Fair Isle, Shetland, 1973-96.

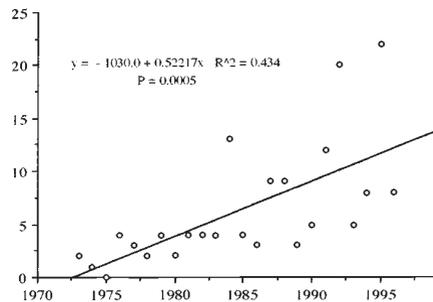


Figure 5. Autumn totals of Common Rosefinch *Carpodacus erythrinus* on Fair Isle, Shetland, 1973-96.



171. Adult male Common Rosefinch *Carpodacus erythrinus* singing, Scotland, July 1984 (Angus Hogg). Note marked wear of wingbars on this late-summer bird, and obvious scarlet 'hood'.

the daily census routine) have provided a reasonably constant count register of all migrants. Drawing on this, Dr Riddington has provided clear proof (figs. 4 & 5) that rosefinch occurrences are continuing to increase at statistically significant rates, particularly in spring. For records in that season, 1992 and 1995 were exceptional years, with 78 bird-days in May-June (and a peak count of 12) in 1992 and 77 (and a peak of 17) in 1995. Even if those remarkable influxes are excluded from the spring analysis, there is still a significant increase in North Sea crossings at the latitude of Fair Isle in that season.

Elsewhere along the western coast of the North Sea, such clear trends are nowhere apparent except perhaps on the Isle of May, Fife. Lying only 386 km to the south of Fair Isle, it was reached by six of the first 18 Scottish birds, during 1906-14, but then failed to attract more than four birds per decade up to 1976. It produced nine during 1977-86 and at least 25 in the last decade (I. M. Darling *in litt.*). The marked dichotomy of occurrence strength between the two longest-established Scottish observatories is surprising, but even the most

direct over-sea approach to the Isle of May is 200 km longer than that to Fair Isle, and the latter island has no crops at all.

Anxious to make the most of the Fair Isle records, I have also assessed them against the trends for the other 12 passerines expanding westwards. Table 3 also shows that the Fair Isle records alone demonstrate, once again, the group phenomenon of striking increase. Within this, the rosefinch is clearly pre-eminent, but in one or two of the three most recent decades only the Red-flanked Bluetail and the (still absent from Fair Isle) Penduline Tit have not shown at least one greater rate of increased sighting. In observing this, I do not wish to imply that, in the short term, there will be other colonisations of Western Europe of a similar scale to that of the rosefinch. It is just that the genetic and migratory momenta for such expansions may not remain the exclusive preserve of that species. It is salutary to remember that, prior to 1835, the Horned Lark *Eremophila alpestris* was not proved to occur in Scandinavia (Dresser 1897). Yet most of us would now regard it as a typical, even ancestral member of that region's avifauna.

REVIEW OF EUROPEAN AND BRITISH BREEDING RECORDS

Within the eastern half of the Western Palearctic, the second surge of the Common Rosefinch has in the last 70 years produced a huge incremental population, but its advance farther west has been neither evenly paced nor ubiquitous. In the following summary of the European breeding populations and then the few British breeding successes, the main references have been Isenmann (1994), Cramp & Perrins (1994), Hagemeyer & Blair (1997), Snow & Perrins (1998), and 'European news' and the annual reports of the Rare Breeding Birds Panel in *British Birds*. Where the latest population estimates vary, the first comes from BWP or BWPC and the second figure (in parantheses) is that given by Hagemeyer & Blair (1997).

The main stronghold of breeding rosefinches – and the most likely source of westward pioneers – lies in Russia, where population growth was first noted in the 1930s, and the total is now estimated to be between 1 million and 10 million pairs. Along Russia's western borders, from Belarus north to Finland, there are now another 410,000 to 610,000 (or 505,000) pairs. The most rapid growth of the Finnish population began in the 1940s, but the most adventurous birds had already pushed through that country and the Baltic islands to Sweden in the 1930s, with a first isolated breeding record in 1938. Colonisation began in 1949, and at least 10,000 to perhaps 50,000 (or around 20,000) pairs now inhabit Sweden. Since 1970, and particularly from 1982, some 2,500 pairs have colonised southern Norway. Since perhaps 1966 and certainly 1972, Denmark has attracted 250 to 300 pairs, though not without at least one collapse at a major site. Thus, within the latitudes common to the Baltic region and northern Britain, the above expansion of range and numbers has secured for the species a regular summer population - west of Russia - of over 420,000 pairs. Since rosefinches lay an average of five eggs and usually fledge

over 50% of them, the minimum potential number of juveniles reared annually by this community is probably around 1 million.

The re-penetration of Poland began as long ago as the 1900s, but westward expansion was not noted until the late 1950s. The Polish breeding population of 2,000-5,000 pairs still remains small by comparison with that of the adjacent Baltic countries. Germany was not occupied until 1967 or 1968. In 1974, the initial coastal population spread into eastern inland areas and, by 1982, the total community had reached 400 to 1,000 (or 500 to 1,500) pairs.

Since 1987, rosefinches have also colonised the Netherlands (50-60 pairs in 1992), Belgium and northwest France (ten pairs in 1993), but this geographically peripheral community has yet to exceed 80 pairs in total. Thus, within the latitudes common to the southern North Sea and southern England, the expansion has produced a relatively tiny population of only 2,500-6,000 pairs and a minimum potential fledging of only 6,000 juveniles. More recent news from France suggests, however, that the rosefinch's tenure of its westernmost Continental perch may be insecure. Reports for Pas-de-Calais in 1993 included up to 16 males, four nests and one family, but in 1994 only four or five males reappeared (Dubois 1996; Dubois *et al.* 1996).

The spread of the rosefinch into other central and southern European countries has been less measured. The former Czechoslovakia was invaded between 1959 and 1968, with 80-130 pairs located in the mid 1970s, but it was not until 1983 and 1984 that a substantial increase, with up to 30 pairs at favoured localities and 300-450 pairs in all, was noted. To the south of there, however, the progress of the rosefinch – faced by the full arc of alpine habitats that run from Romania to Switzerland and southeastern France – has clearly been insubstantial. There was no certain breeding record in Austria before 1973 or 1974, in Slovenia before 1978 and in

Switzerland before 1979. There are now 850-1,450 pairs in the Czech Republic and Slovakia combined, but, elsewhere in south-central Europe, the only population estimates are 50-100 pairs in Austria and a mere ten pairs in Switzerland in 1989, although in this last country 40 sites were mapped in 1993 and 1994 (Volet & Schmid 1995). Eastern upland France was, however, reached in 1985 and is still being colonised, with first proof of breeding in Haute-Savoie in 1997 (Desmet 1997). There can be no doubt that the rosefinch is penetrating central Europe, with 910-1,500 pairs capable of producing over 2,000 juveniles.

Southwest of Russia, there are apparently no substantial rosefinch communities, and the species' expansion into the countries north and west of the Black Sea has been even slower (or less detected) than that into central Europe. There was no breeding record for Romania before 1981, and none for Bulgaria up to 1993, and it had still to be successful in Hungary up to 1996. The only population estimate, of ten to 50 pairs, is for Romania. Significantly, even in Ukraine, where there are no mountain barriers, there was no breeding in the west before 1987, and there were still only 250-600 pairs in 1990. In comparison with the Russian population, this last community is puny.

The general assumption, that all the east European records of breeding rosefinches stem from the advance of the nominate race, may yet be questioned, for the southwest Asia race *kubanensis* is also breaking its normal bounds (see below) and could be set to encircle the Black Sea. Breeding in the Crimea began in 1991, and the western Turkish population of undoubted *kubanensis* is now estimated to be 5,000-50,000 pairs. This will produce a much bigger potential of pioneers than any other of the communities summarised above for the European regions south of the Baltic. The two races may well meet (or could already have met) in Ukraine or the Balkans.

As already noted, the nominate race of the rosefinch has, in its occupation of

western and central Europe to date, been a far more successful colonist north of an axis than runs ESE of southern Norway, or from the latitudes of 58°-62°N, to its northernmost winter haunts in India, or to a latitude of 45°N or below. The fortunes of the species outside this long-inherited vector are far less substantial. Twist the map any way you like and Britain and Ireland remain below the northern birds' preferred direction of advance. Growth rates have been estimated for several countries, but lack any common denominator. It is possible that the massive eastern Baltic community has reached the point of habitat saturation; there has been no recent further increase in Finland (Lasse Laine verbally). Elsewhere in Europe, most measured increases have come from peripheral countries and are as yet insufficient in numbers (and length of tenure) to be counted as secured growth (other than in Denmark, where the population has multiplied five-fold in the early 1990s). It is difficult to consider its members as other than more-forceful pioneers of the successful south Baltic hordes.

The measurement of the erratic and relatively minuscule British contingent of breeding rosefinches has not been easy. The Rare Breeding Birds Panel has, however, given them a place in its annual report since 1982, the year of the first proven and presumed successful attempt in Scotland (Mullins 1984). To repeat the annual RBBP summaries here would be superfluous. In any case, I am far from convinced that the presence of a male rosefinch, even if he sings persistently in a territory, should be interpreted as more than just that.

Nevertheless, the odds are that there are always more rosefinches present than those observed. It took much effort from four experienced observers, with up to three assistants, to keep tabs on the Flamborough birds, even though they were confined mainly to little more than a square mile (26 ha) of mostly open habitat (see fig. 6). What focused attention from most observers in both 1991 and 1992 was

the presence of other young male rosefinches which sang with (or against) the adult or young males which eventually paired or bred.

The formation of trios rather than pairs is well known elsewhere in the species' range, and is clearly linked to its highly social breeding behaviour, which may include semi-colonial groupings and even polygyny. Where most successful, rosefinches breed in close proximity and at remarkably high densities. Nests can be only a few metres apart, and 200 pairs per km² have been recorded. Even after long migratory hauls, the urgency of their reproductive drive is undiminished and immediately that the males have found mates, which usually appear within four days, they settle to breed. With eggs in the nest, they become secretive and show again only when their young hatch and require food (Cramp & Perrins 1994).

The proof of certain or probable British breeding attempts remains confined to the 11 years 1982-92. (The raising of three young by a pair in Cumbria and the counterpart singing of two males in Co. Mayo in 1998 are outwith the compass of this paper.) In total, these featured at least nine pairs, although in 1992 a further six (perhaps nine) individuals were associ-

ating with the breeding birds. Details of the breeding attempts are summarised in table 4 (on page 461). To demonstrate the birds' breeding cycle in Britain, the stages of their behaviour are sequentially analysed in table 5 (on page 462), but no real differences from those in the rest of Europe are visible.

As the 22 birds and their six certain associates represent less than 6% of the observed 506 spring occurrences in the 11 years, the question arises as to where the other 488 fetched up and how many of them may have bred. The latest RBBP assessment suggests that up to seven pairs per annum may have done so, but this seems merely to reflect the known maximum presence in 1992. Fraser *et al.* (1999) traced published county references to only ten pairs up to the same year. The fact is that the element of chance in the British breeding observations has been huge. Of the six proven records, the first was entirely fortuitous, the second was an unexpected bonus of work on the *New Breeding Atlas* and the last four all came as by-products of intensive coastal or island observation by observers mainly intent on other studies. In general, therefore, the rosefinches that reach Britain and Ireland just melt away; or do they?

In the first disciplined analysis of county rarities and uncommon birds, Wilson & Slack (1996) pinpointed nine inland records for 'old Yorkshire' up to 1994. As that county has had a relatively stable recording effort in recent years, with laudable attention to inland localities, I regard the series as the most telling of all British inland records. It contributes a surprisingly high 7.5% of all

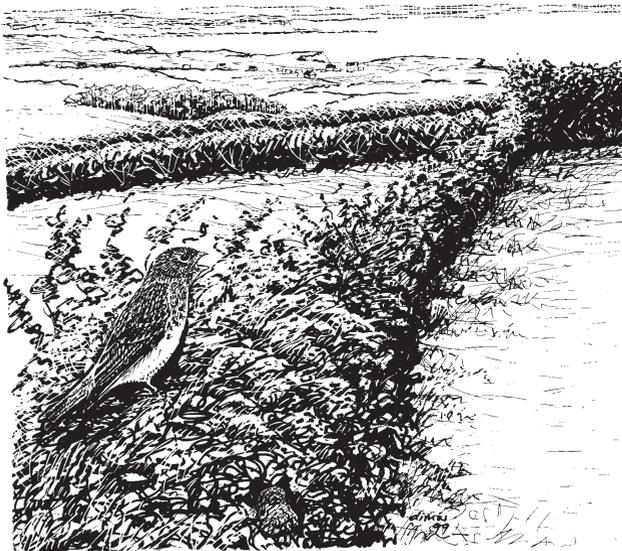


Figure 6. One of the breeding territories of Common Rosefinch *Carpodacus erythrinus* at Flam-borough Head, East Yorkshire (D. I. M. Wallace)

Table 4. Certain breeding attempts by the Common Rosefinch *Carpodacus erythrinus* in Britain, 1982-92. Qualification: bonded pairs building nest and closely associated birds.

Year	Area	Habitat	Birds	Nest site	Outcome	Reference
1982	Highland	Open, many clumps of birch <i>Betula</i>	Immature male	Fork in birch at 3 m	4 eggs, 2 hatching	Mullins (1984)
1990	Sheigra, Sutherland	Open, low cover around croft	Adult male, female	Raspberry <i>Rubus idaeus</i> , 0.95 m	4 eggs, 3 or 4 hatching and fledging	Gibbons <i>et al.</i> (1993); T. Talbot, C. Crooke, R. H. Dennis (<i>in litt.</i>)
1992	Flamborough Head, East Yorkshire	Scrub along sea cliffs, hedges and gullies with trees	Three adult males, five immature males, five females; at least four pairs	Two nests found: Bramble <i>Rubus fruticosus</i> , 1 m; fork in Ash <i>Fraxinus excelsior</i> , 1.25 m	2, probably 3, clutches; 1 pullus fledging; more than 1 fledgling	Lassey & Wallace (1992)
1992	Between Benacre and Minsmere, Suffolk	Interface of heath and marsh	One adult and three immature males, one female; one pair formed at Minsmere	Nest-building seen, but site not inspected	Not known, but faecal-sac removal seen	<i>Suffolk Bird Report for 1992</i> ; G. Jobson (per D. Moore)
1992	Bawdsey, Suffolk	Scrub and trees	Immature male, female	Not sought	2 juveniles, trapped with female	Beecroft (1993)
1992	Lundy, Devon	Gully with trees on east coast	Immature male, female	Fork in tree	Eggs either not laid or lost in gale	A. Jewels (per RBBP)
SUMMARY:						
Three years above	Six with known nest sites	Open, with canopy tops (for singing) and dense ground cover (for nesting)	11 immature and five adult males, nine females; at least nine pairs		At least 5 clutches (up to 4 eggs) leading to 5 broods in nests and at least 4 flying juveniles	

Yorkshire records to 1994, and six came in 1991 and 1992, the years of probable and proven breeding at Flamborough Head. Set against Yorkshire's latitudinal and longitudinal axes of respectively 150 km and 140-150 km, the nine inland localities present corresponding axes of 100 km and 130 km, strongly suggesting that rosefinches could turn up almost anywhere in the county (and central Britain). Three spring males have penetrated the county as far west as its Pennine region, appearing at Gouthwaite Reservoir (near Ripon), Skipton and Malham Tarn on dates from 1st June to mid July. (Intriguingly, two

October birds have also reached Harrogate and Ripon, indicating the species' ability to slip through central Britain in autumn as well.)

In the course of following up the 1990 breeding record, I was also fascinated to learn of north and west Scottish records indicative of territory reoccupation in up to three consecutive years and at least one wandering juvenile in late summer (R. H. Dennis *in litt.*). Pursuing these, I uncovered the most intriguing serial event in the entire British history of the rosefinch. One small, closely wardened area in the Hebrides has provided a uniquely persis-

Table 5. Breeding behaviour of Common Rosefinch *Carpodacus erythrinus* in Britain, 1982-97. Data from five successful and four other breeding attempts, as in table 4.

No. records analysed	Phase of behaviour	May	June	July	August
13	Territory occupation by males	25		(1)	
8	Prolonged song from male		30		30
8	Arrival of females		2	28	
7	Definite pairing		6	17	
4	Nest-building		7	18	
5	Hatched young in nest			23	30
4	Juveniles out of nest			5	(3)
3	Latest sighting of family			12	31
Maximum breeding cycle (= 66-69 days)		25			(3)

tent series of spring and summer records. Within it, up to three adults have appeared from late May to mid July in seven of the nine years to 1997. In total, 11 adults have been present for at least 97 bird-days (up to 31 days in the case of individual red males); they have indulged in courtship and even brief commensal behaviour. Twice, in 1990 and 1997, the presence of adults has been followed by the occurrence of juveniles on early August dates that are highly suggestive of local or regional breeding (locality and observer withheld, in consultation with the RSPB). Once again, the rosefinch has displayed its uncanny, and in this case astonishingly localised, ability to tantalise.

It is important to recognise that, even within continental Europe, the Common Rosefinch has taken up to 25 years to become a regular member of a region's summer avifauna. Thus, whatever has actually happened in Britain during past years or will happen in future ones, the invasion of 1992 must now be seen as exceptional and the hopes raised for the foundation of a soon-to-be-sizeable population as dashed. Nevertheless, the origin of the invasion merits discussion.

During my review of nearby European records, I was particularly struck by the coincidence in 1987 of the first major spring arrival in the Netherlands of 39 birds, including a first breeding pair, and

the occupation of Heligoland, Germany, by four breeding pairs with the (then) strongest-ever spring passage through Denmark. For example, on 24th May, 122 were seen at Skagen in one hour. Onward passage across the North Sea was subsequently visible in Britain, even into July. Among a total of 42 birds, adult males were noted from Fair Isle in the north to St Agnes, Scilly, in the south and west. In 1988, the number of British spring records rose to 63, but, disappointingly, I have not found any evidence of exceptional mass passage in western Europe in that year or the next three, during which period the incidence of British spring birds actually fell back in spite of the continuing spread of Dutch breeding birds (van den Berg *et al.* 1992).

In 1992, however, the immediate circumstances of the English colonisation did match those of 1987. Once again, there was a large spring passage through Denmark (Lindballe *et al.* 1994). Between 4th May and 20th June, nearly 550, in parties of up to 25, were seen, and the total number for the year approached 1,000. The spring peak dates for the four main localities fell between 24th May and 1st June, the former only two days before the peak arrival in Britain. Significantly, the number of breeding pairs in the Netherlands more than doubled, to 45; simultaneously, the Common Rosefinch also spread along the

European coast, entering the Pas-de-Calais region of France, where at least three males were heard in song. This unusually strong pulse of pioneers was also detected in other countries as far away as Switzerland (Volet & Schmid 1995) and even Israel (Shirihai 1996; see also below).

The particular factors involved in or associated with the 1992 invasion were:

1. An exceptional weather vector of persistent high pressure, which provided constant easterly winds over the North Sea.
2. An exceptional spring passage, which brought hundreds of rosefinches to Denmark.
3. A further overspill of pioneers along the southern coasts of the North Sea and the English Channel.
4. Continuing good weather through the early part of the breeding cycle.
5. Localised arrivals of sufficient density to provide interactive groups of birds, certainly at Flamborough and seemingly in Suffolk.

Of these, only the third has continued in 1993-96, and we have seen another 'lag-phase' in occupation with no breeding. Clearly, the mere annual repetition of the wide scatter of spring individuals that Britain has received since 1981 has been insufficient (except in 1998) to provoke more than tantalising territorial behaviour by males. It is difficult to resist the thought that, for the Common Rosefinch to become a regular summer visitor to Britain, it will have to appear in viable breeding groups over several successive springs.

It is, of course, possible that the Common Rosefinch will colonise Britain by more than one route. Its long, obvious, but fitfully breeding Scottish contingent is most likely to have stemmed directly from the spread into Norway. As discussed, its most recent flurry in England appears to have been directly linked to the establishment of first Danish and then Dutch populations (Snow & Perrins 1998). Discussing its general advance, however, Isenmann (1994) postulated that there

could be four routes of range expansion: one through southern Fenno-Scandia (as above) and others from the southern Baltic coasts (now reaching northern France), from Ukraine (to eastern France) and again from Ukraine (south to Bulgaria). Such a precise divide in pioneer orientation at the extremities of a migration of over 6,400 km seems to me far too inventive for a bird whose breeding range has long spanned latitudes as wide apart as 30°. Fig. 1 shows that, although it has been concentrated by coastlines and interrupted by the mountains of central Europe, an essentially broadfront advance is the more visible and plausible explanation; or is it? Surely, the huge differences in the recently attained population levels show that Common Rosefinches of the nominate race have benefited most from spring migration oriented at least slightly north of due west? It may take many more years for them to depart successfully from such simple reversals of their ancestral withdrawal-orientation to the southeast.

Finally, some conjecture on why the bird is moving west seems allowable. In its latest British review (Burton 1995), the Common Rosefinch is taken to have responded to climatic amelioration, in common with the other sympatric north Russian and Siberian species listed above, and to have moved both north and west since the middle of the nineteenth century. As I have just reiterated, the directions are indisputable, but the causes of the current advance may have been less generalised.

Other European authors (e.g. von Haartman 1973; Stjernberg 1985), more conscious perhaps of the bird's falter in and virtual retreat from eastern Europe by the end of the nineteenth century, have identified more-precise factors for the westward surge. In particular, Stjernberg saw as particularly important, within the general improvement of the northern European climate from the 1930s, the run of almost unbroken good summers in that decade.

This is considered to have allowed fast



172. First-summer male Common Rosefinch *Carpodacus erythrinus*, Bardsey, Gwynedd, May 1987 (Ian Fisher). In Britain, the majority of spring males are first-year birds in this grey-brown plumage.

growth in the new colonist population and further immediate invasive potential. Stjernberg also suggested that increased openness of habitat within the western taiga and the bird's ability not only to cope with this change of ground, but also to compete therein with the declining Linnet *Carduelis cannabina* were contributory factors. Interestingly, Stjernberg (1979) also observed that, for a finch, the Common Rosefinch is rather long-lived, with about three-quarters of experienced Finnish adults surviving from year to year. (By

comparison, only half or less than half respectively of adult British Chaffinches *Fringilla coelebs* and Linnets last another year.)

None of these factors explains, however, why the rosefinch should now be expending yet more energy and taking yet more risk by tackling the montane centre and wetter maritime periphery of temperate Europe. Stjernberg (1985) has drawn particular attention to its progress through Fenno-Scandia and particularly into southern Norway, where it has exploited



173. Adult male Common Rosefinch *Carpodacus erythrinus*, North Ronaldsay, Orkney, 28th May 1990 (Ian Fisher). Note almost unbleached and unworn wingbars on this spring bird (cf. plate 171 on page 457).

the shelter belts of south-facing and east-facing river and mountain valleys. It is now leaving such terrain behind it and, with a remarkably restricted breeding stratagem (a single or occasional replacement brood, fledged in 26 to 30 days from the start of nest-building), it is trying out sea-facing and ocean-facing habitats as far from its winter home in India as can be. What advantage does such extreme range extension confer? I suggest the following.

Along the northern sector of its Siberian range, the bird has to cope with the late and often initially unstable Arctic spring. No modern observations of far-northern arrival dates appear to have been made, but in 1875, at Ust Zylma on the lower Pechora River, Seebohm (1901) saw none before 6th June, while in 1877, at the junction of the Yenisey and Kureyka Rivers, there was also none before 6th June, though they were very numerous there ten days later. If these arrival dates of northern birds have remained constant, the male Common Rosefinches that now exploit the earlier warmth and food sources of central and maritime Europe will have, against their Arctic counterparts, a temporal advantage of about three additional weeks in establishing territories, finding mates and rearing broods. Given the known rapidity and momentum of their spring passage (see below), even the farthest possible westward extension of range will take up less than half the time lost in the delayed start to breeding that did, and may still, await northbound birds. In passing, it is also known that the northern taiga is also evacuated earlier than the bird's other habitats. The rosefinches may leave as early as late July and are gone in early August (Snow & Perrins 1998), having been in their breeding niches for as few as 50 days.

Just how far do the Common Rosefinches that are colonising Western Europe travel? The four ringing recoveries from Norway and Finland have all come from the lands around the Aral Sea in south-central Asia or about 2,400 km from

the nearest known wintering grounds in Pakistan and India. To that distance, journeys to Finland would add at least another 2,900 km (or 5,300 km in total), to Norway another 3,500 km (or 5,900 km in total) and to Scotland another 4,300 (or 6,700 km in total). These would be long for most passerines on their protracted or vagrant autumn migrations. Yet in spring, the rosefinches undertake them in a remarkably short period.

Common Rosefinches leave their winter haunts from early April to mid May, reach their closest Asian montane niches from mid to late April, return to the Caucasus and Turkey from early May and pour through the central Asian deserts in early and mid May. Those that move northwest pass through the longitudes of the Volga-Ural region within May, reaching European Russia in the second third of that month. In the St Petersburg area, they have, since the 1950s, appeared around 18th May, several days earlier than at the beginning of the century. Similarly in Estonia, they usually appear on about 19th May, again two days earlier than hitherto. In Sweden, the average arrival date is 27th May (Cramp & Perrins 1994). It seems quite possible that the species' well-established western populations cross about 45° of longitude in only ten to 15 days, covering 225-340 km per day. It is a staggering performance, clearly capable of being the springboard for the increased overshooting that Britain and Ireland have received since 1981. Incidentally, 20% of our spring records are dated on or before 27th May, indicating an even more rapid migration by some birds.

The North Sea is not merely another Baltic, however, being up to twice as wide and lacking the island stepping-stones of the latter. It has been suggested that the main passage from Finland to Sweden is through the Åland Islands, but even birds departing from Estonia and Lithuania will find no stretch of open sea wider than 100 km. To cross the North Sea, birds leaving Norway, northern Denmark and the northern Netherlands face, even on a due-

west heading, crossings of respectively 470, 520 and 180 km. Not accustomed anywhere else on their migration route to long flights over saltwater, even the fittest pioneers of the west European colonies may balk at mass crossings unless, as in 1992, unusually favourable weather, particularly tail winds, gives their energy reserves a fortuitous boost. Certainly the current records from peripheral northwest Europe indicate a turn to the southwest along the southeast coast of the North Sea. It could well be that it is the choice of the safer mode of coasting that is taking them on to Belgium and the Pas-de-Calais region in northern France.

So, perhaps we should not hold our breath for the major populations of the Baltic and south Scandinavian regions or the much smaller ones of Denmark and the Low Countries to supply a viable British community of Common Rosefinches. Alternatively, should the colonisation of Belgium and northern France proceed and the populations there increase, we could have news eventually of another crossing of the English Channel over the ghost of the last landbridge to Eurasia. Thus will a fascinating finch continue to intrigue us.

Finally, it should be noted that, although normally withdrawing rapidly in autumn to its ancestral range in India and southeast Asia, the Common Rosefinch has been found in late autumn and winter in southern Europe since 1960, around the Western Mediterranean since 1970 and in the Middle East since 1981/82. Those reaching the last region have been assigned to the race *kubanensis*; the others are assumed to have been of the nominate race. No full review of these records has been possible, but there have been three in Belgium and France between December and February, while several apparently wintered at Chios, Greece, in 1986/87. Of ten records in Malta during 1970-80, two were in November. The second bird for Morocco was found in January 1994. These occurrences recall the growing winter observations in Europe and the Levant of

other sympatric Siberian passerines such as Little Bunting *Emberiza pusilla* and Pine Bunting *E. leucocephalos*. How recently this habit has become established is uncertain. Mentions of exceptional southwesterly and southerly withdrawals from breeding latitudes exist for Spain and Malta prior even to the 1930s (Wardlaw-Ramsay 1923). The dynamic rosefinch had signalled wintering opportunism 75 years ago, and Vinicombe & Cottridge (1996) have conjectured that, were it to adapt more frequently to peanuts, as did one in Pembrokeshire from December 1991 to January 1992, it could perhaps follow the example of the House Finch, *Carpodacus mexicanus*, which has become a common garden bird in North America.

Of much more significance than the still-tenuous west and south European autumn and winter records of the Common Rosefinch is the mounting evidence of its regular occurrence in the Middle East. That region produced only one record early in the 1960s, at Azraq, Jordan, on 8th September 1963 (Cameron & Cornwallis 1966), but Shirihai (1996) has now demonstrated that *kubanensis* has, since 1967, passed through eastern Israel and Sinai in autumn, with respective peaks of 54 (in 1986) and at least 18 (in 1971), has since 1977 occurred regularly in Israel in spring, and has since 1981/82 been found in winter in Israel 13 times. Clearly, it is not only the nominate race of the species which is showing extralimital dynamism. Of particular fascination to British observers is the fact that, of the 24 spring birds, four were ringed in the momentous month of May 1992. Is there a clue here that one of the engines of that year's exceptional surge was unusually high survival in the wintering areas of the two races?

CONCLUSION

After more than six years of brooding on the questions set in Britain and Ireland by the Common Rosefinch, I have no easy answers to offer. Clearly, the bird continues to show a dynamism that is exceptional

within its genus, and it still leads, in both scale and rate of occurrence, the small pack of sympatric passerines that are expanding their breeding ranges westwards across northern temperate Europe. So far, however, its fully confirmed ability to colonise the closest coasts of western Europe has not brought breeding parties regularly to our shores.

It appears that, except in the 1992 spring of persistent tail winds, the large groups of urgent, interactive birds that may be the *sine qua non* of breeding success and permanent colonisation balk at the North Sea. Even in its narrower lower reaches, it is proving to be a much more effective barrier than the Baltic.

If, secretly, the rosefinch is gaining a foothold anywhere in Britain and Ireland, it could be in Scotland, where, in the north, and especially in one small area of the west, its spring and summer appearances tantalise even more than those of the Serin *Serinus serinus* have done for so long in southern England. I believe, but cannot prove, that the vector of the Scottish records is the extended and now annually sustained migratory reach of the southern Scandinavian populations, themselves no more than 70 years old, but now substantial and clearly adapted to a more maritime environment than were their eastern ancestors. For the bird to breed again in southern England, or ever to do so in Wales or Ireland, the growth of its newest communities across the English Channel may be the crux.

In the meantime, the usually amorphous finch with beady eye and plaintive song will continue to present one of the most startling and enigmatic performances of all Palearctic passerines. On 27th May 1997, Dave Allen, Anthony McGeehan and I found three, not far from some newly arrived Collared Doves *Streptopelia decaocto*, at Malin Beg, Co. Donegal, at almost the westernmost edge of Eurasia. It struck me that, although most of them look as dull as the doves, their achievement is no less astonishing and remarkable.

ACKNOWLEDGMENTS

Four people were particularly instrumental to the development of this paper: Tim Sharrock, who suggested it in the first place and was very helpful (and patient) to the end; Peter Fraser, who mined his database of records several times and provided figs. 2 & 3; Dr Roger Riddington, who produced the Fair Isle data independently and contributed the only statistically certain trends of occurrence; and Roy Dennis, who put me onto some of the most fascinating breeding-season records. I thank them all very much. Scarcely less help came from the Flamborough Ornithological Group, Derek Moore (for Suffolk) and Ian Darling (for the Isle of May) and a Hebridean informant who must remain unnamed, but not unthanked. Other support came from Colin Croke, Ian Dawson, Richard Fitter, Jeremy Greenwood, Dr Malcolm Ogilvie and Tom Talbot. Again, my thanks go to them.

Finally, Ann Shilton coped womanfully, with not just a ghastly mess of manuscript, but also its almost interminable revisions. Without her help, the mists might never have cleared.

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APPENDIX 1

Ageing characters of Common Rosefinch

The British and Irish data on the Common Rosefinch are plagued by the inability of observers to distinguish birds in juvenile plumage from females and from males in their first year. Of six early birds seen or shot on Fair Isle - all in autumn - one was probably an adult, one was certainly an adult male and four were in their first autumn. Of the last quartet, one was male and two were females. This meagre sample remains the only evidence of the age/sex ratio of autumn migrants.

There are, however, perceptible differences between juvenile and later plumages and these are indicated below and in fig. 7 and in plates 168-173.

Juvenile

When fresh, head, upperparts and wings distinctly greenish or olive in tone and fully, though fairly softly, streaked; both upper and lower wingbar, distinct, with pale tips to median coverts and outer fringes of greater coverts 2-4 mm deep; colour of wingbars initially yellowish - or

pink-buff - but bleaches to almost white, particularly if retained into first year; throat spotted, lacking distinct malar stripe, but both breast and flanks well streaked; bill pale-based on both mandibles; pale buff eye-ring emphasises dark beady eye; moult September to December.

First-year female

When fresh, head, upperparts and wings similar in tone to juvenile, but ground colour quickly fading greyer; less obviously streaked, particularly on rump and crown, latter becoming spotted in pattern; both wingbars distinctly narrower than those of juvenile, with pale tips only 1-2 mm deep; colour of wingbars cream-buff, soon fading to white; ground colour of underparts less uniformly off-white than those of juvenile, with buff suffusion on breast and flanks; dark malar stripe obvious, but below breast streaks fade into narrower, softer striations (though these still stronger than on older birds); eye-ring less distinct against paler 'foreface'; moult timing not known.

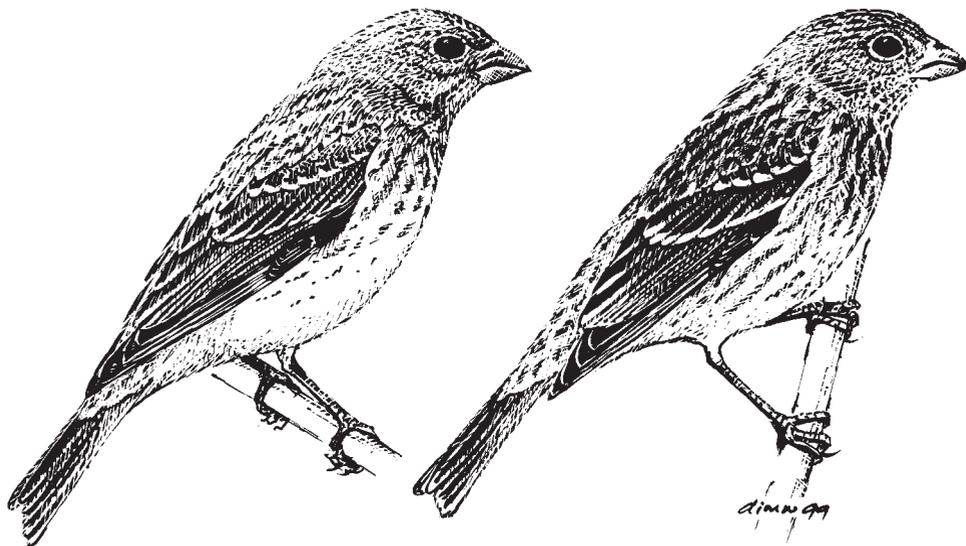


Figure 7. Adult female (left) and juvenile Common Rosefinches *Carpodacus erythrinus* (D. I. M. Wallace). Female from photograph taken at Flamborough Head on 28th June 1992 by P. A. Lassey; juvenile scaled against same photograph, but with plumage of bird at same locality on 18th-19th September 1972. See Appendix 1 for full discussion of characters (and Jonsson 1992 and Svensson *et al.* 1999 for coloured paintings).

Second-year and adult female

Head spotted on forecrown; lower back and scapulars only obscurely streaked or mottled; upper wingbar has pale tips 1-2 mm deep, more distinct than those of lower wingbar, but these may disappear with wear; colour of upper wingbar pale cream, soon fading to white; lower mandible still pale-based on some; moult August to October.

First-year male

Normally similar to first-year female, although some (up to one in five) show slightly warmer, browner tone to head and upperparts, with hints of rose or orange in areas which are red on adult, perhaps most frequently on and around rump.

Second-year male

Similar to adult, but mantle browner; wingbars less distinct, but outer fringes of tertials still pale and contrasting towards tips, as on younger birds of both sexes.

Adult male

Pale tips of median coverts 2-3 mm deep, at first dull pink, but bleaching to pale pink and then more contrasting; lower wingbar always less distinct; outer fringes of tertials uniformly grey; bill appears uniformly dark.

(Details taken from Witherby *et al.* 1938; Clement *et al.* 1993; C. S. Roselaar, in Cramp & Perrins 1994; personal observations; photographs.)

APPENDIX 2

Racial characteristics of Common Rosefinch

The two northern taiga races – nominate *erythrinus* in the west and *grebnitskii* in the east – are slightly smaller than the three montane forms – *kubanensis* from Turkey to Iran, *ferghanensis* in west-central Asia and *roseatus* in the Himalayas. The wings of the taiga races average about 5% shorter and their bills are marginally so. The overlap of measurements is wide, however, and the

only trustworthy clues to racial identity are associated with adult plumage, particularly that of the male.

Taiga birds have a full bright scarlet-red hood (formed by the concolorous head and breast) and rump, with the same colour present as a suffusion, but far less obvious, on mantle, scapulars and particularly belly. Mountain birds are more uniformly coloured, with their red plumage distinctly rosy or carmine in hue and even tinged purple in *roseatus*. They do not look distinctly hooded.

In both groups, a cline of increasing saturation runs from west to east, but, typically, western males of *erythrinus* are much more noticeably red-hooded and red-rumped than are the more uniform *grebnitskii* and montane races.

The males at five places in Russia, Siberia and northern Mongolia, observed from 23rd May to 9th June 1980 – over a range of 4,000 km – showed a striking cline. Many Mongolian birds were ‘drenched in red’, none more so than one in the Gobi Altai (pers. obs.).

The nominate race is not known to occur beyond the Lena basin, south of Krasnoyarsk; to the east of there, intergrades and then *grebnitskii* are found. As *grebnitskii* breeds sympatrically with several Asian passerines which are regular as vagrants in Britain, it should be noted that the male has a slightly less scarlet, more vinaceous or carmine hue to its red plumage and lacks the distinct, often abrupt divide between the red hood and no more than pinkish-white underbody of nominate *erythrinus*. Female *grebnitskii* is actually more distinct, with noticeably heavier streakings on crown, back and underbody, making it look darker and more lined than adult females (though probably not juveniles) of the nominate race.

Turkish *kubanensis* is rather pale, noticeably so compared with *grebnitskii*, with the male rosier on the back and particularly on the upper belly and flanks than the nominate race, lacking the latter’s demarcated

scarlet hood. In fresh plumage, female *kubanensis* is greyer, less warm olive-brown than *erythrinus*, but it is doubtful that this difference survives wear.

APPENDIX 3

Other migratory congeners of the Common Rosefinch

Purple Finch *C. purpurea*

This Nearctic counterpart of the Common Rosefinch is, in its northernmost populations, a partial middle-distance migrant. It moves between similar limits of latitudes, but shows no sign (nor need) of the widening shifts in longitudinal range now so characteristic of the Eurasian species. It shares with the latter a marked tendency to a fluctuating presence, even at long-secured haunts.

No claim of a transatlantic vagrant Purple Finch has been accepted, although unlike the Rose-breasted Grosbeak *Pheucticus ludovicianus*, three have reached Bermuda (Clement *et al.* 1993). There have, however, been no recent reports, and, with the fortunes of Nearctic seed-eating passerines declining, the Purple Finch appears to have lost all favour as a potential vagrant, being absent from the latest review (Bryant 1997).

The Purple Finch is a smaller, shorter-tailed, and even-chunkier-looking bird than the Common Rosefinch. Its plumage differs distinctly in head pattern, with pale supercilium and submoustachial stripe particularly striking on the female and juvenile (quite unlike the bland face of the Common Rosefinch), softly streaked flanks on the male and heavily streaked underparts on the female and juvenile (with markings reaching rear flanks much more strongly even than on juvenile Common Rosefinch). In flight, the Purple Finch utters a ringing 'pit' or 'pink'. (Another Nearctic congener, the House Finch *C. mexicanus*, has appeared in the Netherlands, but it was regularly imported as a cage bird; see Inskipp 1983.)

Pallas's Rosefinch *C. rosea*

This east Asian relative of the Common Rosefinch is the only other Palearctic member of the genus to display both regular migratory and nomadic movements. Some stray west to 85°E in most years, to 80°E in some and more exceptionally to 68°E and even west of the Urals, the further extensions probably being caused by exceptional excessive snowfalls.

Accidentals have reached Europe on only four occasions, appearing in Ukraine (twice), east European Russia and Hungary. Other records from the former Czechoslovakia, Switzerland and Denmark are now considered to refer to escapes (Snow & Perrins 1998), and this was the fate of the one in Orkney in June-July 1988 (*Brit. Birds* 87: 247-252). In an interesting reflection of its known late withdrawal from breeding quarters, three of the accepted records are dated in December.

For a wild individual to reach Britain, however, even the farthest of the longitudinal displacements noted above will leave the bird facing another journey that is almost as long as the greatest ever undertaken by the Common Rosefinch. That such can be accomplished by even smaller passerines is shown by the British occurrence patterns of several partly sympatric species, but only time may tell more.

The Pallas's Rosefinch is slightly larger and distinctly longer-tailed than the Common Rosefinch. Its plumage differs distinctly, with wider wingbars, much stronger marking of the mantle and the tertials, and pale orange-buff to deep pink rump shown by both sexes at all times. The male is more uniformly pink than the Common Rosefinch, with distinct hoary, silver tipping on crown and throat obvious at close range; the female and juvenile are also warmer-coloured, with orange-buff to pink on forehead, face and breast. The call is a short, subdued whistle (Clement *et al.* 1993).

