II.

ORTOLAN-SYMPOSIUM

17.-18. Mai 1996 in Westfalen

Ergebnisse

Haltern 1997

Herausgegeben von Bernd VON BÜLOW
D-45721 Haltern

ISBN 3-7862-0104-8
Verlag Th. Mann, Gelsenkirchen-Buer

Gedruckt in Zusammenarbeit mit dem Natur- und Vogelschutzverein Haltern und Umgebung e.V.
und mit freundlicher Unterstützung durch die Nordrhein-Westfalen-Stiftung, Düsseldorf
Grafiken, Layout: Mario Stiller, Biologische Station Kreis Recklinghausen e.V.
Druck: Buersche Druckerei Dr. Neufang KG, Gelsenkirchen-Buer

Stolt, B.-O. 1997. The Ortolan Bunting *Emberiza hortulana* L. in Sweden - migration and abundance. *In*: von Bülow, B. (Ed.), II. Ortolan-Symp. Westfalen 1996: 101-111

The Ortolan Bunting *Emberiza hortulana L.* in Sweden - migration and abundance

Bengt-Olov STOLT (Stockholm)

Introduction

The Ortolan Bunting spends about one-third of the year in the breeding area, and about two-thirds of the year outside the breeding area. WALLGREN (1954) found that Ortolan Buntings live, through the year, in a remarkably constant thermal environment, and that no part of its breeding range coincides with the wintering quarters. For most Ortolan Buntings, migration is absolutely necessary, northward to breed, southward to survive the winter.

In Sweden, the size of the breeding population has changed markedly over time. Observations of large irregular changes in the occurrence were pointed out as early as in 1870 when Aug. Emil HOLMGREN wrote (here translated from the Swedish): *It is curious that this bird in some years can be quite common in certain areas where otherwise it is rather rare or does not turn up at all.* Later drastic changes in the occurrence were reported by several authors (e.g. OTTERLIND & LENNERSTEDT 1964, STOLT 1974, SWANBERG 1976, RUNESSON & JÖNSSON 1987).

In this paper, I will comment first on some aspects of the migration, and then on the recent abundance of the Ortolan Bunting in different Swedish provinces. As we will see, there are large gaps in our knowledge about the migration, as well as about the abundance. My hope is that better knowledge of the migration will help us understand the drastic changes we observe in distribution and breeding numbers.

Material and methods

For studies on migration the ringing programmes in Helsinki, Stavanger, Copenhagen, Bologna, Brussells, Sempach, Arnhem, Wilhelmshaven, Oslo and Tring kindly supported data on ringing recoveries. That was already twenty years ago (STOLT 1977, 1987). Complementary data were later collected from a report by REZVYI, NOSKOV & GAGINSKAJA (1995). Ottenby Bird Observatory contributed with valuable biometric data. Currently, I received data on ringed birds from the Bird Ringing Centre at the Swedish Museum of Natural History.

In order to get up-to-date information on population size, and population trends during the last years, a total of 50 inquiries were sent in spring 1996 to ornithologists interested in the Ortolan Bunting, and to local report committees of the Swedish Ornithological Society. A summary of the answers was worked out for each province and complemented with data from published reports and in some cases personal observations. It must be kept in mind that numbers of breeding pairs are difficult to estimate over larger areas. This is especially the case for a species

Dr. Bengt-Olov STOLT, Swedish Museum of Natural History, Bird Ringing Centre, Box 50 007, S-104 05 Stockholm

with an uneven distribution, with occurrence in patches, and with absence even in habitats that seem to be optimal. However, as a basis for an estimate of the population size for the whole country, a best possible estimate of population size in the different provinces was produced.

Migration

Migration through Europe. Ringing recoveries clearly indicate a SW-directed autumn migration from Fenno-Scandia, and from west and central Europe (Fig. 1). The new recoveries,

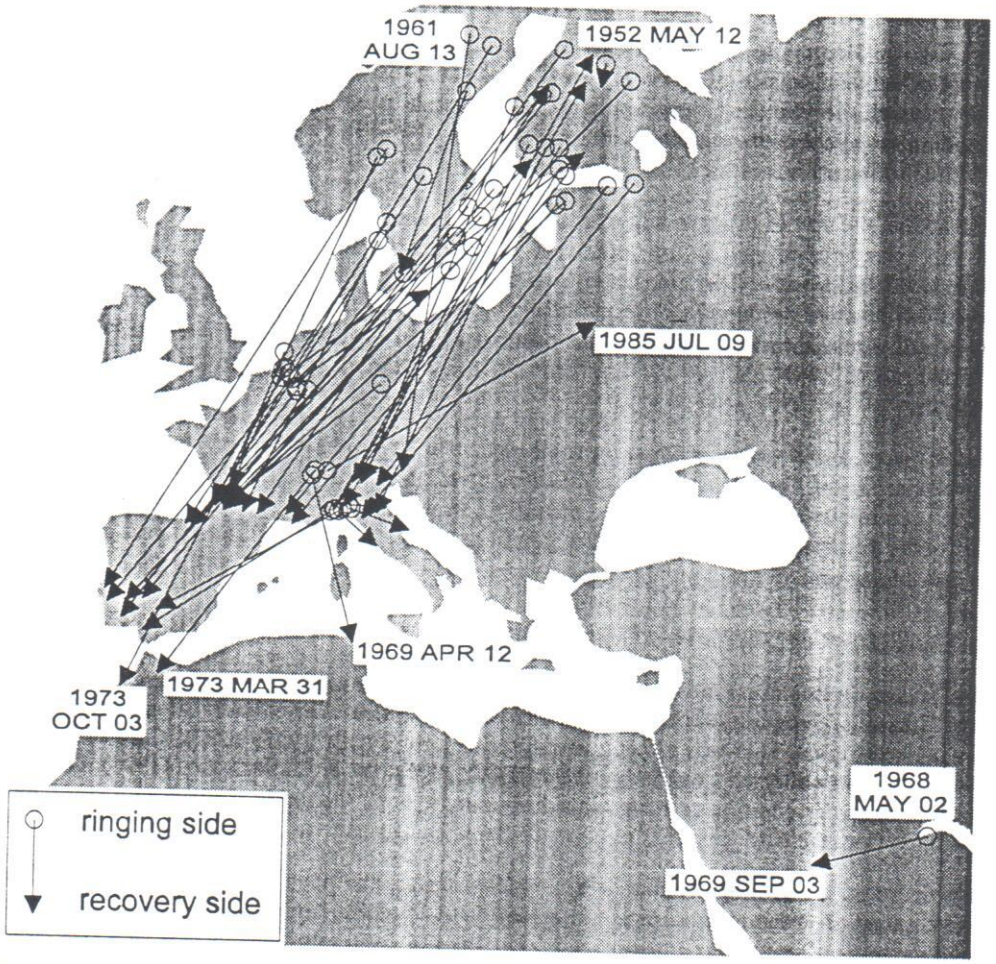


Fig. 1: Ringing recoveries of the Ortolan Bunting *Emberiza hortulana* during the period 1931-1993 (n = 98). A line connects the ringing site with the recovery site. Many birds were ringed in northern Italy in spring, and most recoveries of these birds are from the same region in autumn, but one was recovered in June in Finland. The dates for ringing or recovery are noted on the map in some selected cases. There are no ringing recoveries south of the Sahara but there are December observations of Ortolan Buntings at Mount Nimba in West Africa (Brosset 1984).

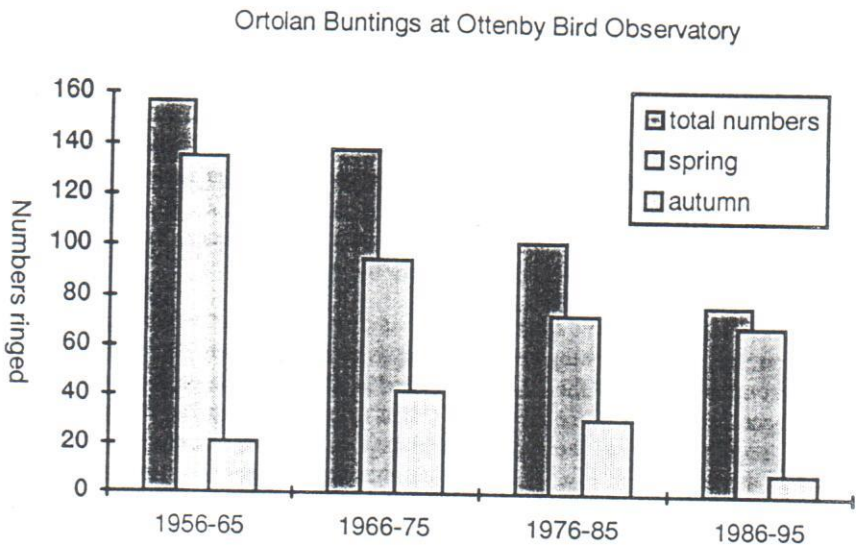


Fig. 2: Ortolan Buntings *Emberiza hortulana* ringed during the years1956-1995 at Ottenby Bird Observatory distributed on ten-year periods. Daily trapping of passerine birds on migration takes place in a garden within the isolated light-house area on the southernmost point of Öland. Two Helgoland-traps and 9-13 mistnets are used (Enquist & Pettersson 1986).

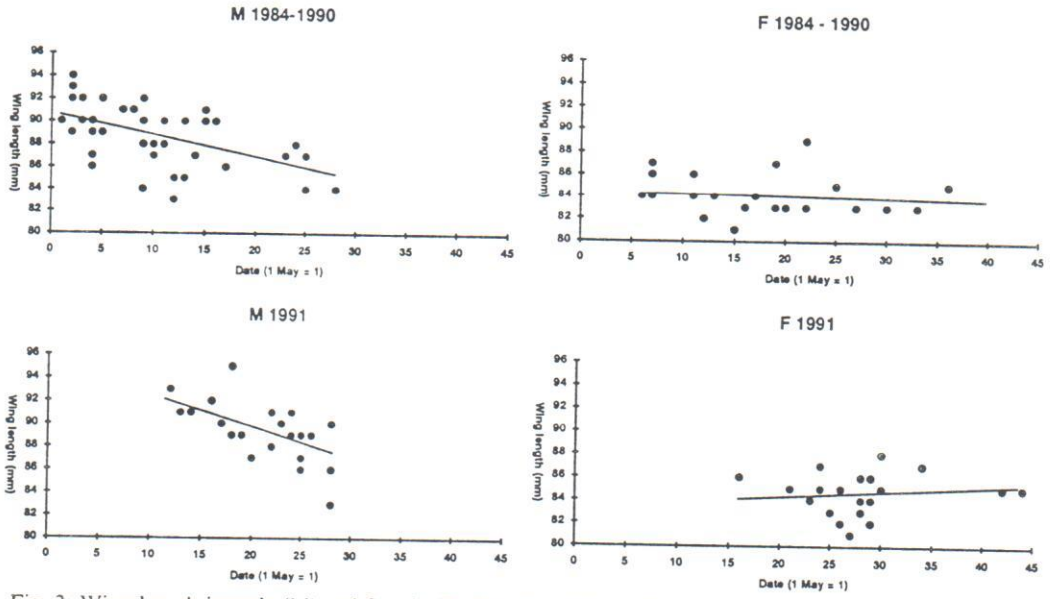


Fig. 3: Wing length in male (M) and female (F) Ortolan Buntings *Emberiza hortulana* in relation to date of passage during spring migration in southern Sweden. From Stolt & Fransson (1994).

that have been added during the last ten years, confirm the earlier picture. Most of the recoveries are due to birds caught by hunters, and this still applies especially to the concentration of recoveries in southwestern France.

The southernmost recoveries are from Morocco, in spring and autumn. Recoveries from areas south of the Sahara are totally missing. The winter quarters are poorly known, though autumn directions, and time table for spring and autumn movements, indicate wintering in tropical West Africa. Brosset (1984) observed wintering Ortolan Buntings in the Guinean part of Mount Nimba (appr. 07.40N 08.30W) in December in an open landscape at an altitude between 1250 and 1400 m. That is, so far, one of the best indications of where in tropical West Africa the Northwest European populations may stay for the winter.

Standardized trapping at Ottenby. Most Ortolan Buntings ringed in Sweden are caught during spring migration, largely during stop-overs on islands along the coast. At Ottenby Bird Observatory, at the southern point of the island of Öland in the Baltic, regular spring and autumn trapping has been performed since the 1950s (HJORT, LINDHOLM & PETTERSSON 1981). Judging from the migration route, the Ortolan Buntings trapped at Ottenby are most probably birds breeding in Finland (cf. Fig. 1). This is further confirmed by the fact that the Ortolan Buntings ringed at Ottenby in spring, and recovered during the breeding season, were found in Finland. This also means that changes in the size of the Finnish breeding population could be expected to influence the numbers passing at Ottenby.

However, the annual numbers of Ortolan Buntings trapped at Ottenby is low, and varies widely, being influenced by, among other factors, the weather situation at the time of spring passage. In order to avoid this kind of random variation, the numbers were added for ten-year periods (Fig. 2). The numbers of trapped birds decrease continuously, from one period to the other, and the number during the last ten years, 1986-1995, is only half that for the period 1956-65. The change in number of ringed birds over the 40 years shows a statistically significant decrease (Spearman Rank Correlation, $r_S = -0.47$, $p < 0.01$), the result suggesting a long-term decline of the large Ortolan Bunting population in Finland. According to VÄISÄNEN (1994), there are contradictory indications whether the Finnish population has decreased or not. The extensive Finnish line transect censuses do not indicate a population decline, but the number of 10-km atlas squares inhabited by Ortolan Buntings has decreased.

Spring arrival and wing length. A recent study on spring arrival of Ortolan Buntings at stop-over sites in southern Sweden showed that the median arrival date was, on average, about one week earlier in males than in females (STOLT & FRANSSON 1995). In the spring of 1991, with prevailing cold northerly head-winds, the arrival of both sexes was delayed by about 10 days. Males with longer wings arrived before males with shorter wings. This applied in normal weather conditions as well as in the cold spring of 1991. In females, no correlation was found between winglength and time of arrival (Fig. 3).

Sex ratio. During censuses of Ortolan Buntings in breeding areas, singing males are usually observed. Females are more difficult to count. It is easy to get the impression that there are more males present than females. Among the birds trapped at Ottenby during spring passage the ratio between male and female numbers can be determined. During the period 1970-1995 there were 221 Ortolan Buntings trapped: 111 males, 102 females and 8 birds that were not sexed. This suggests that the numbers of males and females are almost equal.

Abundance in different provinces

Up to the 1950s, the Ortolan Bunting bred in all Swedish provinces, with the exception of the islands of Öland and Gotland, where it has bred only occasionally (ENGSTRÖM 1952). After the 1950s, a marked, longterm retreat in distribution, and decline in number, has occurred. However, a period of temporary increase was observed during the 1970s (SOF 1990, STOLT 1994). This increase coincided with a period when many large forest clearings were produced in the middle and northern part of the country, and Ortolan Buntings settled on these new clearings. Today corresponding types of large clearings are probably no longer produced in

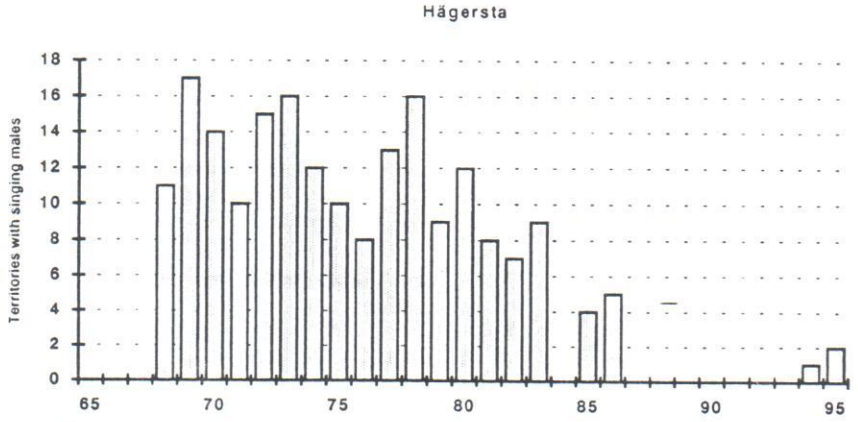


Fig. 4: Census of Ortolan Buntings *Emberiza hortulana* at Hägersta in the province of Närke. Censuses were performed 1968-1983, 1985-1986 and 1994-1995. The area is about 165 ha with a main habitat of arable land mixed with some pasture fields, with islets of decidous trees, border zones and groves. From Runesson 1996.

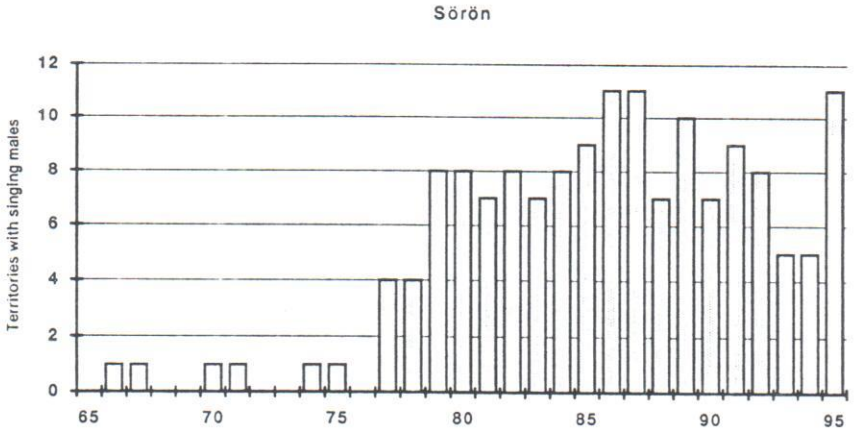


Fig. 5: Census of Ortolan Buntings *Emberiza hortulana* at Sörön in the province of Närke. The area is about 20 ha and consists of deciduous woods surrounded by arable land. The area has been censused annually since 1965 using the mapping method. From Runesson 1996.

Swedish forestry.

In the following list, recent information on the Ortolan Bunting in the different provinces of Sweden is summarized. The list contains a best possible estimate of population size, as well as the actual records on which these estimates are based. It is clear that in some provinces there are only few available records.

1. Skåne. No longer breeding. Last indication of possible breeding in 1988 (Mats RELLMAR).

2. Blekinge. No longer breeding. Last known breeding in 1982 (Anders BLOMDAHL).

3. Halland. No longer breeding (Magnus FORSBERG, pers. comm.)

4. Småland. Probably no longer breeding. No Ortolan Bunting observed at Stävlö in 1995 (Andreas STÅHL).

5. Öland. Only seen during migration. No breeding population.

6. Gotland. Only seen during migration. No breeding population.

7. Västergötland. No longer breeding (Arne THORSELL, Åke ABRAHAMSSON).

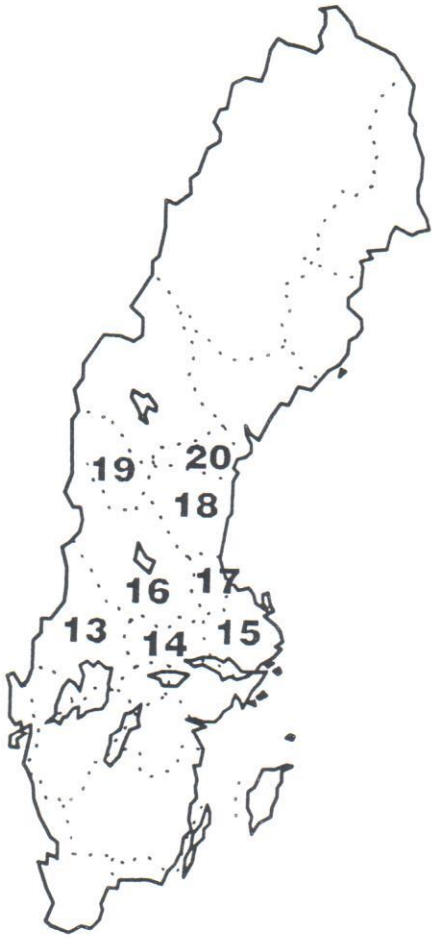
8. Östergötland. No exact information. Has decreased. The popupalion is thought to consist of about 15 pairs (Olof HJELM).

9. Bohuslän. No longer breeding.

10. Dalsland. No longer breeding.

11. Närke. Singing males were observed in 67 territories in 1995. Censuses at Hägersta and Sörön, see Fig. 4 and 5. The population was estimated to about 75 pairs (Joakim JOHANSSON, Bo RUNESSON).

12. Södermanland. In 1992, 25 birds were reported from 20 localities (Fåglar i Sörmland 26, no.2, 1993: 52). At least 26 singing males near Eskilstuna in 1995 (Bo GUSTAFSSON). Estimated population about 30 pairs.



13. Värmland. Four observations reported during breeding season in 1995 (Erik BORGSTRÖM). Estimated population about 15 pairs.

14. Västmanland. Altogether 48 singing males were reported in 1995. For the period 1992-1995 there has been an estimated decline of about 20%. The population is estimated to about 500 pairs (Thomas PETTERSSON).

15. Uppland. A total of 115 singing males were reported during 1994 (Martin TJERNBERG, Kjell ERIKSSON). At Vallentuna, 25 territorial males were counted in 1994 (Kjell ERIKSSON). At Angarn, censuses have been performed annually since 1976 (Fig. 6). The breeding population has been estimated to about 600 pairs. The species is far from evenly distributed and the actual number may be smaller.

16. Dalarna. About 50 observations of Ortolan Buntings were reported during 1995, most of them singing males. The breeding population is estimated to about 50 pairs (Magnus STRÖMBERG).

17. Gästrikland. Few observations reported during the last years. The breeding population may be estimated to 10 pairs or somewat more (Lennart RISBERG).

18. Hälsingland. In one area at Söderhamn 10 pairs were counted in 1995 (PERSSON 1995). Recorded on at least 10 localities during 1995, although the species was not searched for (Stig NORELL). The population is estimated to 500 pairs or more (Kenneth KARELIUS, Mats AXBRINK).

19. Härjedalen. No recent observations. Most probably not breeding.

20. Medelpad. Reported from three localities in the inner part of the province in 1994 (OLAUSSON et al. 1995). Has decreased. Thought to be more common near the coast. Records of Ortolan Buntings are collected by the local report committee, but only from the inner parts of the province. A guess is that there may be a population of about 100 pairs.

21. Jämtland. Only three observations reported during 1994. Has decreased markedly. About 25 pairs may be a reasonable guess (Bertil ROOS).

22. Ångermanland. Only few actual observations (tens), most of them from the northeastern part of the province (Birger RISBERG, Bengt-Olov STOLT). Negative trend. Records are not collected by the local report committee. Population estimated to about 2000 pairs or more (Birger RISBERG).

23. Lappland. Ten or fewer annual observations during recent years. Has decreased. Population may be estimated to about 150 pairs (Håkan RUNE).

24. Västerbotten. Recent information scanty, one observer reported about 30 birds. Four years ago the population was estimated to between 2000 and 10000 pairs. Declining in modern agricultural areas (Gustaf EGNELL & Linus ANDERSSON). Declining substantially (Owe ANDERSSON). Records are not collected by the local report committee. Breeding population now estimated to about 2000 pairs (Owe ANDERSSON).

25. Norrbotten. Large local variations. Some decline during the 1990s. The estimate is based on observations of about 35 birds. Records are not collected by the local report committee. Population estimated to about 800 pairs (Ove STEFANSSON).

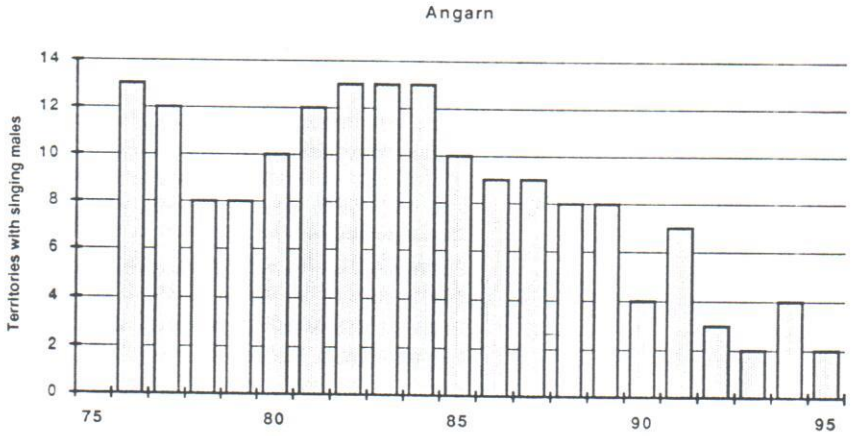


Fig. 6: Census of Ortolan Buntings *Emberiza hortulana* 1976-1995 at Angarnsjöängen, province of Uppland. Kjell Eriksson pers. comm.

How many Ortolan Buntings are breeding in Sweden?

Adding up the estimated population sizes from the different provinces ends in a total of 6870 pairs, which points to an Ortolan Bunting population in Sweden of slightly less than, or no more than, 7000 pairs. Of course, all such numbers are uncertain. Compared with the earlier published numbers of 40 000 pairs (ULFSTRAND & HÖGSTEDT 1976) and 25 000-100 000 pairs (TUCKER & HEATH 1994, estimate from 1987), the present number differs markedly. However, the present estimate probably reflects quite well the recent population decline, indicated for instance by the counts at Hägersta (Fig. 4) and Angarn (Fig. 6).

Geographical distribution

The Ortolan Bunting is now missing or disappearing in ten provinces. From ten other provinces a decreasing trend is reported. From the remaining five provinces the reports suggests

Fig. 7: Recent development of the Ortolan Bunting *Emberiza hortulana* population in different provinces according to reports available in April 1996.

almost unchanged numbers, but even in these five provinces there are some contradictory reports indicating a decrease. The retreat in distribution is most pronounced in the southwestern, western and northern parts of the country. The populations in some areas near the large lakes Hjälmaren and Mälaren and near the Bothnian coast are doing best (Fig. 7).

Habitat preference and opportunism

During the breeding season, the main occurrence is in agricultural areas, preferably in old-fashioned farmlands, for instance with open, not covered, ditches, and, in fairly many cases, in gravel quarries in esker hills. The Ortolan Bunting is also found regularly on large forest clearings, mainly in the eastern part of Central and Northern Sweden. Quite different habitats are reported from other areas, e. g. bogs with peat cuttings in Norway (FREMMING 1984) and moors with heather *Calluna vulgaris* in Holland (MARÉCHAL 1994). Formerly, open land with heather was probably an Ortolan Bunting habitat also on the Swedish west coast, for instance in the province of Halland. All these habitats arise from different human activites. Nowadays, there are probably no longer any natural habitats for the Ortolan Bunting in Sweden. One possible natural habitat is burnt areas after large forest fires. In Norway, an Ortolan Bunting population settled in a burnt area after a large forest fire in July 1976. From this burnt area, BERG (1993) reported a stable population of at least 50 singing males during the years 1984-1993. The area is about 10 km^2 and it is probably completely filled with Ortolan Bunting territories. Despite this, no dispersal into the neighbourhood outside the burnt area could be observed.

Evidently, in Scandinavia at least, the Ortolan Bunting is restricted to more or less man-made habitats. Most such habitats are of a temporary nature. To survive under these conditions, it seems as if the Ortolan Bunting has to be a real opportunist, with a capacity to find and set up populations in areas where new suitable habitats may arise.

Acknowledgements

Many persons, only some of them named in the text, contributed with reports on the occurrence of the Ortolan Bunting in different parts of the country. I am most grateful to all of them. Thanks also to Åke BERG and Gustav ÅSTRÖM for valuable additional information, to Bo FERNHOLM for comments on the manuscript, and to Thord FRANSSON for help with statistics and the map with ringing recoveries.

References

BERG, T. (1993): Hortulan på Starmoen i Elverum 1982-1993. Kornkråka 23: 128-143.

BROSSET, A. (1984): Oiseaux migrateurs Européens hivernant dans la partie Guinéenne du Mont Nimba. Alauda 52: 81-101.

ENGSTRÖM, K. (1952): Ortolansparvens och blåmesens utbredning i Sverige. Vår fågelvärld 11: 27-32.

ENQUIST, M. & J. PETTERSSON (1986): Flyttningens tidsmässiga förlopp hos 104 fågelarter vid Ottenby - en analys baserad på 39 års fångstdata. Rapport från Ottenby fågelstation nr 8. 248 pp. Ottenby fågelstation, Degerhamn.

FREMMING, O. R. (1984): Hortulan *Emberiza hortulana*, svartrödstjert *Phoenicurus ochruros* og topplerke *Galerida cristata* i Norge. Vår Fuglefauna 7: 197-204.
HJORT, C., C.-G. LINDHOLM & J. PETTERSSON. (1981): Ringmärkningssiffror vid Ottenby fågelstation 1946-1980. Ottenby fågelstation, Degerhamn.
HOLMGREN, A. E. (1870): Skandinaviens foglar. Första bandet. Stockholm.
MARÉCHAL, P. (1994): The Ortolan Bunting (*Emberiza hortulana*) in the Netherlands. In: STEINER, H. M. (Ed.) I. Ortolan-Symp. Wien 1992: 129-136.
OLAUSSON, L., N. LUNDMARK, J.-O. HÄGGLUND & I. AXELSSON (1995): Fågelrapport för Medelpad 1994. Fåglar i Medelpad 18: 70-103.
OTTERLIND, G. & I. LENNERSTEDT (1964): Den svenska fågelfaunan och biocidskadorna. Vår Fågelvärld 23: 363-415.
PERSSON, S. (1995): Inventeringar vid Ålsjöområdet. Fåglar i X-län. 1995 nr 2: 40-41.
REZVYI, S. P., G. A. NOSKOV, A.R. GAGINSKAJA et al. (1995): Atlas of bird migration according to ringing and recovery data for Leningrad region. 232 p. St. Petersburg.
RUNESSON, B. & K. JÖNSSON (1987): Inventering av ortolan- och gulsparv vid Kvismaren. Fåglar i Kvismaren 2: 2-12.
RUNESSON, B. (996):Ortolansparven - en nyckfull och lurig rackare. Fåglar i Kvismaren 11 (1996:2): 9-17.
SOF. (1990): Sveriges fåglar. 2:a uppl. Sveriges Ornitologiska Förening. Stockholm.
STOLT, B.-O. (1974): Gulsparvens *Emberiza citrinella* och ortolansparvens *Emberiza hortulana* förekomst vid Uppsala under 1960-talet. Vår Fågelvärld 33: 210-217.
STOLT, B.-O. (1977): On the migration of the Ortolan Bunting, *Emberiza hortulana* L. Zoon 5: 51-61
STOLT, B.-O. (1987): I vilken riktning flyttar ortolansparvar *Emberiza hortulana* från Norden genom Europa? Vår Fågelvärld 46: 48-53.
STOLT, B.-O. (1994): Current changes in abundance, distribution and habitat of the Ortolan Bunting *Emberiza hortulana* in Sweden. In: Steiner, H. M. (Ed), I. Ortolan-Symp. Wien 1992: 41-53.
STOLT, B.-O. & T. FRANSSON (1995): Body mass, wing length and spring arrival of the Ortolan Bunting *Emberiza hortulana*. Ornis Fennica 72: 14-18.
SWANBERG, P.-O. (1976): Ortolansparven *Emberiza hortulana* i Valle, Västergötland, 1940, 1961 och 1975. Vår Fågelvärld 35:235-236.
TUCKER, G. M. & M. F. HEATH (1994): Birds in Europe: their conservation status. 600 pp. BirdLife Conservation Series no 3. BirdLife International, Cambridge, U.K.
ULFSTRAND, S. & G. HÖGSTEDT (1976): Hur många fåglar häckar i Sverige? Anser 15: 1-32.
VÄISÄNEN, R. A. (1994): Population size of the Ortolan Bunting *Emberiza hortulana* in Finland. In: Steiner, H. M. (Ed.), I. Ortolan-Symp. Wien 1992: 55-59.
WALLGREN, H. (1954): Energy metabolism of two species of the genus Emberiza as correlated with distribution and migration. Acta zool. fenn. 84: 1-110.