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THE MIGRATION OF THE CHAFFINCH,  
*FRINGILLA COELEBS*, TO ITALY

**Abstract.** — Recovery cards of chaffinches ringed in 14 different European Ringing Centres between 1939 and 1979 were used to assess the number of recoveries from each Ringing Centre, their distribution through the year and the distribution of the recoveries in the different Euring areas of Italy. The largest number of recoveries were obtained from Prague (31,5%), next from Sempach (17,3%), Budapest (14,3%), Moscow (13,6%) and Paris (7,9%). Recoveries in Italy occur mainly in October, apart the birds ringed in Budapest that were caught through the Autumn and Winter. The largest percent of birds were recovered in the North Tyrrhenian area (49%); the Alpine area comes next (22,8%) while Po and North Adriatic account for about 10% each and other areas for only a small fraction. It is suggested that most chaffinches migrating to Italy stop to winter in the North Tyrrhenian area either entering through the Alpine and Po areas (Prague and Moscow) or through the North Adriatic (Budapest).

**Riassunto.** — *La migrazione del Fringuello, Fringilla coelebs, in Italia.*

Si sono utilizzate le schede dei fringuelli inanellati all'estero e catturati in Italia dal 1939 al 1979 per calcolare la percentuale delle riprese a seconda delle diverse provenienze degli uccelli, la distribuzione delle riprese nei vari mesi dell'anno e la distribuzione delle riprese nelle diverse aree Euring d'Italia. Il numero più elevato di riprese riguarda il Centro di inanellamento di Praga (31,5% del totale), seguono Sempach (17,3%), Budapest (14,3%), Mosca (13,6%) e Parigi (7,9%). Le riprese in Italia avvengono specialmente in ottobre, con l'eccezione dei fringuelli inanellati a Budapest che sono stati ripresi durante tutto l'autunno e l'inverno. La percentuale più elevata di fringuelli è stata ripresa nell'area del Nord-Tirreno (49%); seguono l'area Alpina (22,8%) e, a distanza, la Padana e la Nord-Adriatica (10% circa ciascuna). Nelle altre aree vengono ripresi solo pochi fringuelli inanellati all'estero. E' da tenere presente il fatto che la maggioranza delle riprese è stata ottenuta da cacciatori e non da Centri di inanellamento. Ciò può presentare vari problemi: i cac-

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ciatori sono distribuiti in modo non uniforme nelle diverse aree Euring d'Italia; il numero di essi varia nei diversi anni e pure variabile può essere il loro interesse alla caccia al fringuello. Viene suggerito che la maggior parte dei fringuelli che migrano in Italia si fermano a svernare nell'area del Nord-Tirreno, sia entrando attraverso le aree Alpina e Padana (Praga e Mosca), sia entrando dall'area Nord-Adriatica (Budapest).

### Introduction.

The Chaffinch *Fringilla coelebs* L. is a typical western-palearctic bird living in many different habitats, ranging from the Lapland (July isotherm: 11°C) down to the Maghreb (July isotherm: 30°C) (Voous, 1960; Newton, 1972) (Fig. 1). In the southern part of this area, some chaffinch populations are sedentary; however, most birds of central and northern areas are typically migratory. They move to the south or south-west between mid-September and late November reaching, at most, the Mediterranean countries.

The return migration is started in February-April (Bannerman, 1953; Voous, 1960; Toschi, 1969; Newton, 1972).

The chaffinch is a common and widespread breeder in Italy, but its numbers are greatly augmented each Autumn by immigrants traveling from north-east to south-west (Toschi, 1969). Some populations passing in Autumn through the pre-Alps reach the West Mediterranean to winter; however, most of them are thought to travel to the south of the Italian peninsula (Toschi, 1969).

Although a number of studies have been carried out on the migration of the chaffinch within Europe (Deelder, 1949; Marfurt, 1971; Van Hecke, 1972; Cvitanic, 1980), little information is available at the present on the movements of the different European populations of chaffinches wintering in Italy or passing through it (Bassini, 1960; Bassini and Pilla, 1963).

We have now collected all the data presently available on the Italian recoveries of chaffinches ringed in other European countries and we present them here in order to clarify the present status of the problem.

### Materials and methods.

We used 530 recovery cards on chaffinches ringed in 14 different European Ringing Centres between 1939 and 1979. These cards were compiled by the Istituto Nazionale di Biologia della Selvaggina, Ozzano Emilia (Bologna) in whose files they are being kept.

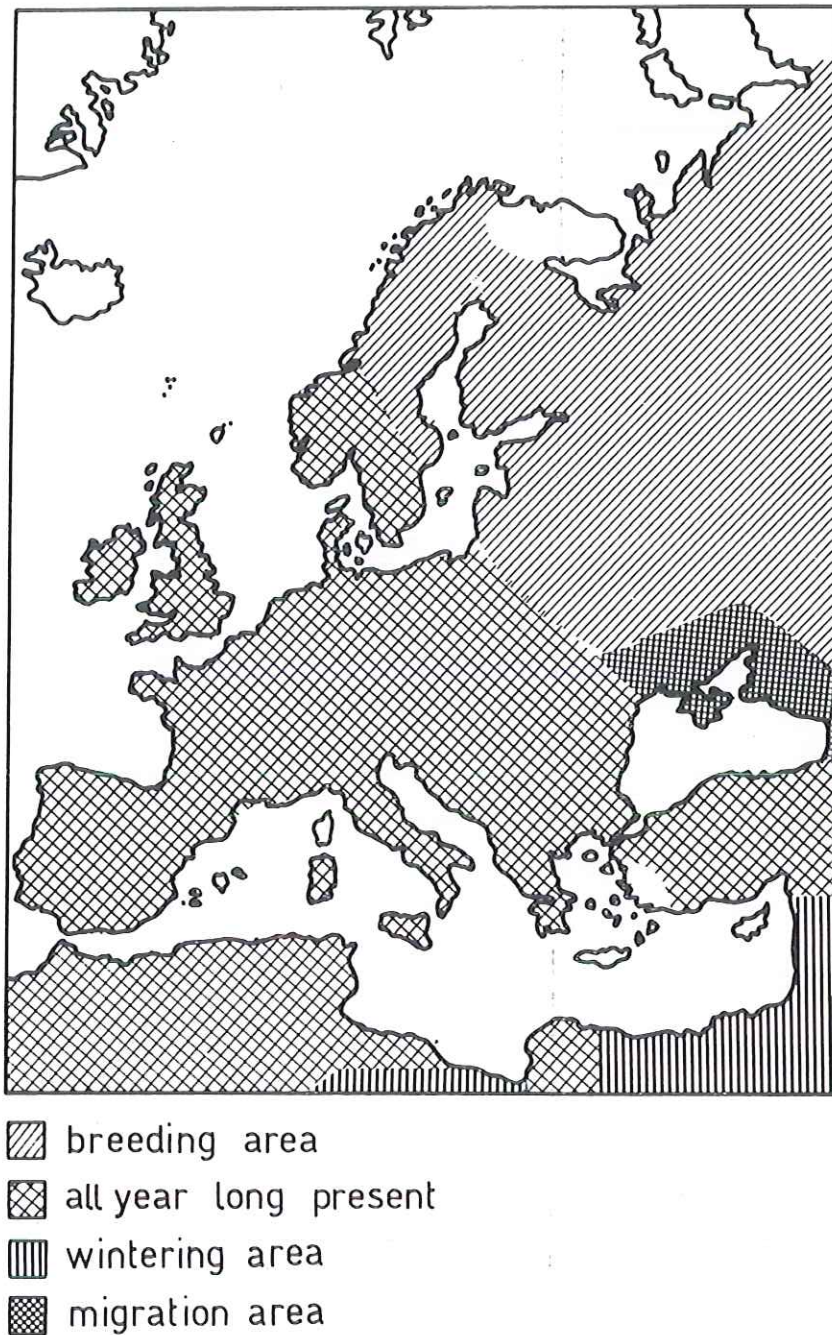


Fig. 1. — Distribution of the Chaffinch *Fringilla coelebs* L. in Europe.

The following pertinent information can be obtained from these cards: (a) Sex and age (not always available), (b) date and place of ringing, (c) date and place of recovery. Most recoveries were obtained during the hunting season, by licensed shooters who shot the birds. This was legal at the time of the recoveries.

**Results.**

(a) *Number of recoveries from each Ringing Centre and their distribution through the year.*

Figure 2 shows the numbers of recoveries and the relative percent from the various Ringing Centres where the birds had been ringed.

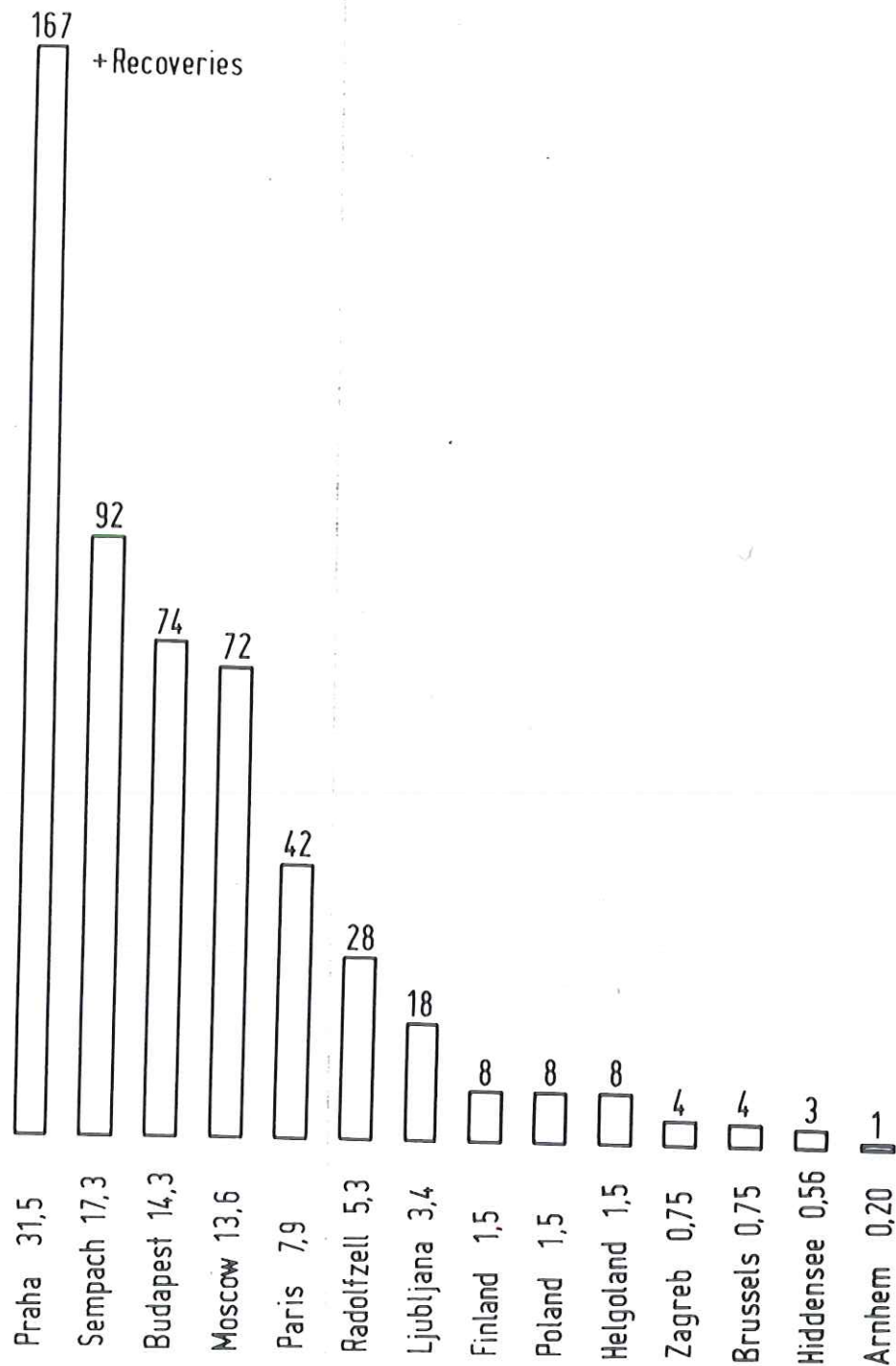


Fig. 2. — Numbers and percents of recoveries in Italy of chaffinches ringed in various European Ringing Centres.

The largest numbers of birds recovered were ringed in Prague (31,5%), next in Sempach (17,3%), Budapest (14,3%), Moscow (13,6%) and Paris (7,9%). Other Ringing Centres contributed to the total with about 5% or less.

The distribution of the ringing and recovery numbers through the year for the five main Ringing Centres is shown in Figure 3. In Prague, Budapest and Paris most birds were ringed from March to October, while in Sempach the ringing activity appears to be concentrated mainly in October and in Moscow in September and October.

The Italian recoveries occur mainly in October, apart the birds ringed in Budapest that were caught through the Autumn and Winter (October to March).

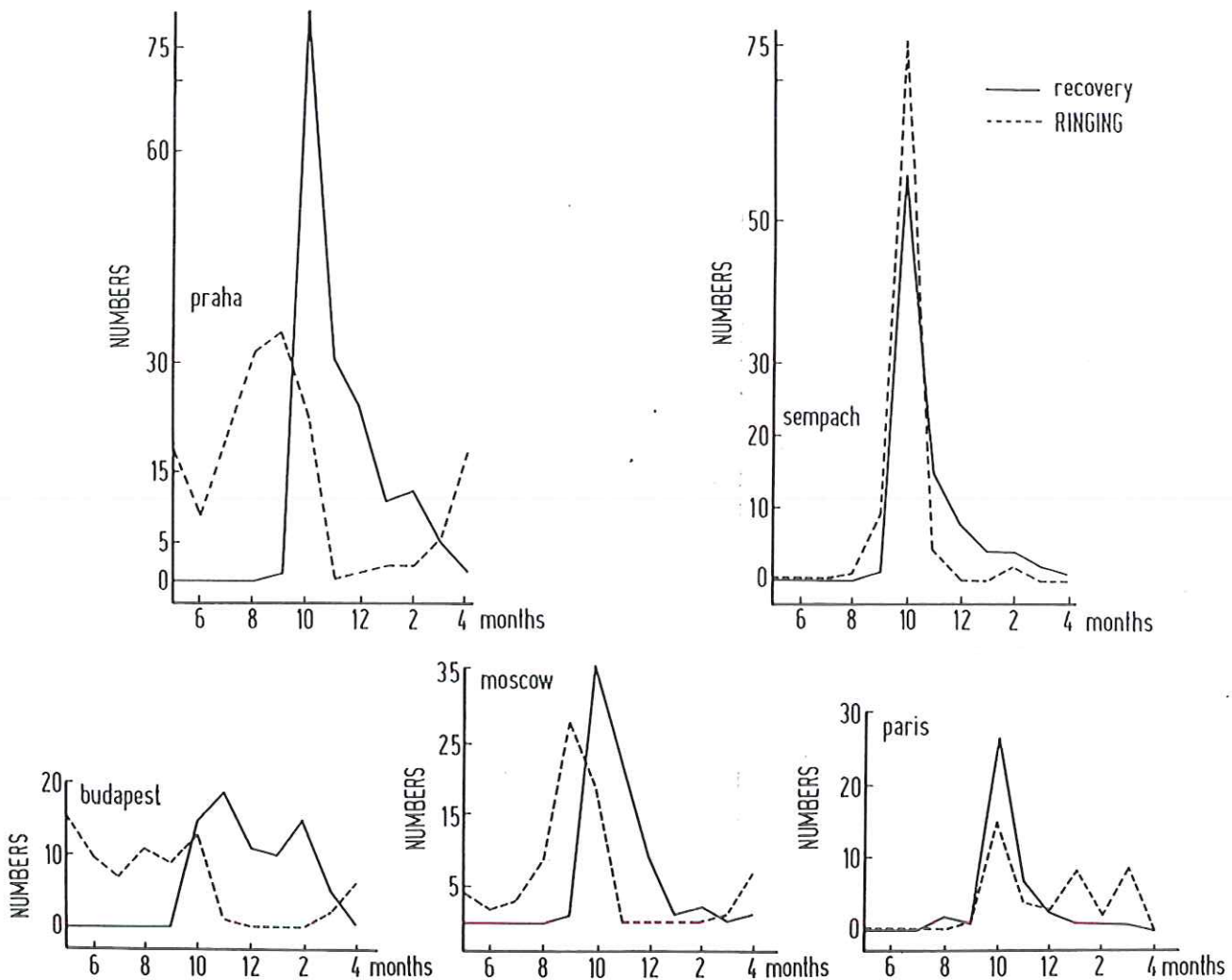


Fig. 3. — Ringing and recovery numbers through the year of 447 chaffinches ringed within Prague, Sempach, Budapest, Moscow and Paris Ringing Centres and recovered in Italy.

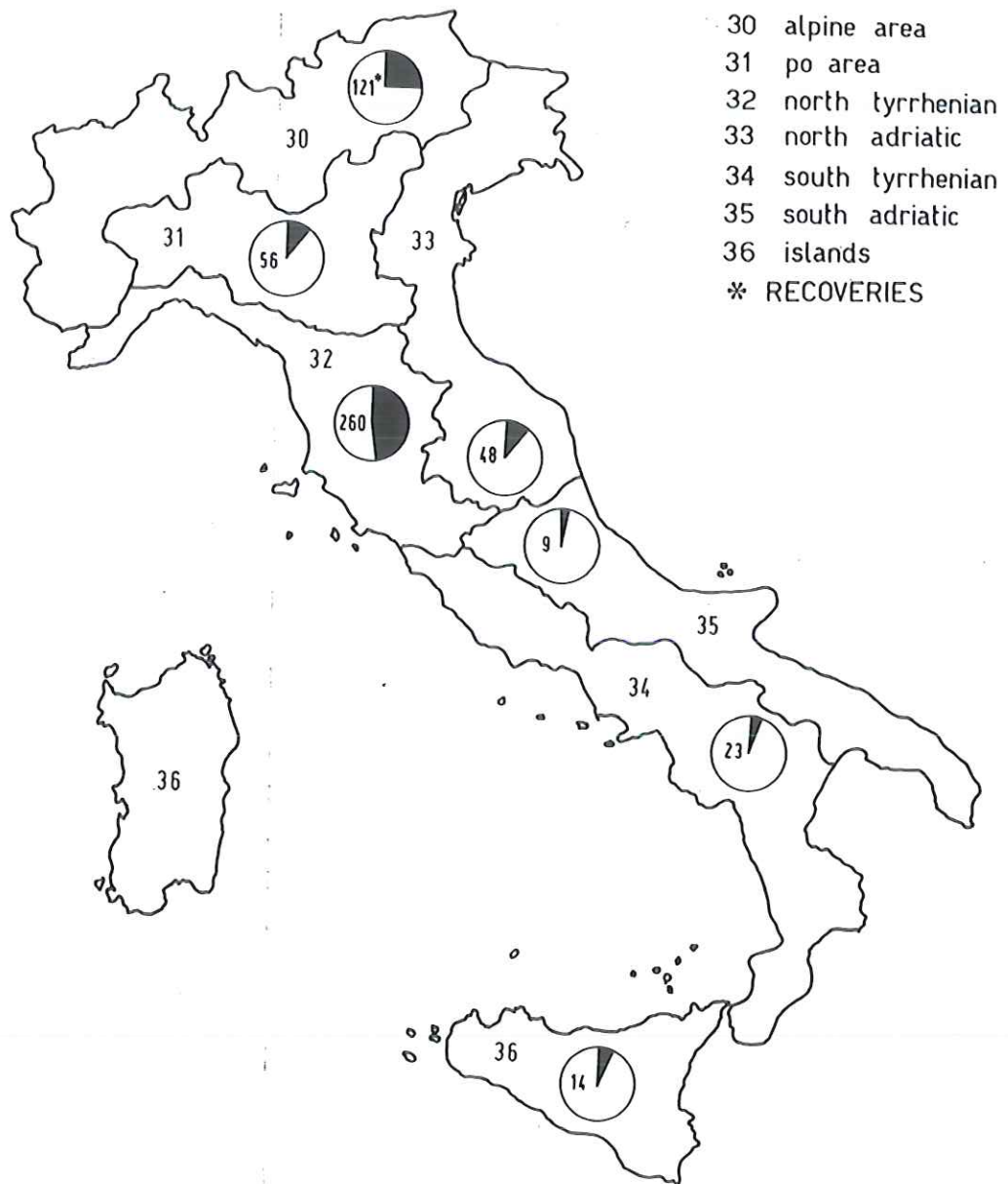


Fig. 4. — Numbers and percents of recoveries in the Euring areas of Italy of 530 chaffinches ringed in various European Ringing Centres.

(b) *Distribution of recoveries in the different Euring areas of Italy.*

A map of Euring areas of Italy is shown in Fig. 4.

The relative percent of recoveries from all the Ringing Centres in each Euring area is indicated as a part of a circular diagram and the number of birds is indicated on it.

The largest number of birds were recovered in the North Tyrrhenian area (49,0%); the Alpine area comes next (22,8%) while Po and North Adriatic account for about 10% each. Only a small fraction of

birds is recovered in other areas, South Tyrrhenian accounting for more recoveries than South Adriatic and Islands. We have also grouped the recoveries in the different Euring areas of Italy according to the Ringing Centres where the birds were ringed. Birds recovered from the five main Ringing Centres have been divided in the following four groups: (1) birds ringed between May 1st and August 31st and recovered in Italy in the course of their first following migration (September 1st, same year — April 30th, following year); (2) birds ringed between May 1st and August 31st and April 30th; (3) birds ringed in the course of their migration (September 1st - April 30th) and recovered in Italy in the same period of the same year; (4) birds ringed in the course of their migration (September 1st - April 30th) and recovered in Italy in the same period of another year.

This information is summarized in figures 5-9, each figure referring to a single Ringing Centre:

*Prague.* Figure 5 shows that most birds ringed within the Prague Ringing Centre were recovered in North Tyrrhenian Euring area (62,1%) with 15,8% in Alpine area and less than 10% in each other area.

The distribution in the different areas appears similar in the four different groups.

*Sempach.* In figure 6 it can be seen that the recoveries from Sempach Ringing Centre are distributed in a very different way: 36,9% in the Alpine area, 35,8% in North Tyrrhenian, 14,1% in Po area and 10% or less in other areas. Looking at the four groups, it can be seen that no birds are ringed during the breeding season in Sempach (groups 1 and 2 missing). Most birds of group 3 are recovered in the North Tyrrhenian area (84,6%) and few in North Adriatic and Islands. No recoveries of this group of birds are recorded in Alpine or Po area.

Birds of group 4 appear more sparse, most of them occurring in the Alpine area (42,3%) with 28,2% in North Tyrrhenian, 16,6% in Po area, 10% or less in other areas.

*Budapest.* About half (51,3%) of the birds ringed within the Budapest Ringing Centre are recovered in the North Tyrrhenian area (Fig. 7). As in the case of Sempach, this area accounts for most recoveries of birds of group 3 (83,3%).

Very few birds ringed within the Budapest Ringing Centre are recovered in Alpine or Po area, while significant amounts are recovered in North Adriatic, South Adriatic, South Tyrrhenian and Islands.

*Moscow.* The largest number of birds (44,4%) are recovered in the North Tyrrhenian area; the Alpine area comes next (33,3%) followed by North Adriatic (12,5%) and Po (8,3%) areas (Fig. 8).

Very few birds are recovered in other areas. The Alpine area accounts for most recoveries in groups 1 and 3, the North Tyrrhenian in groups 2 and 4.

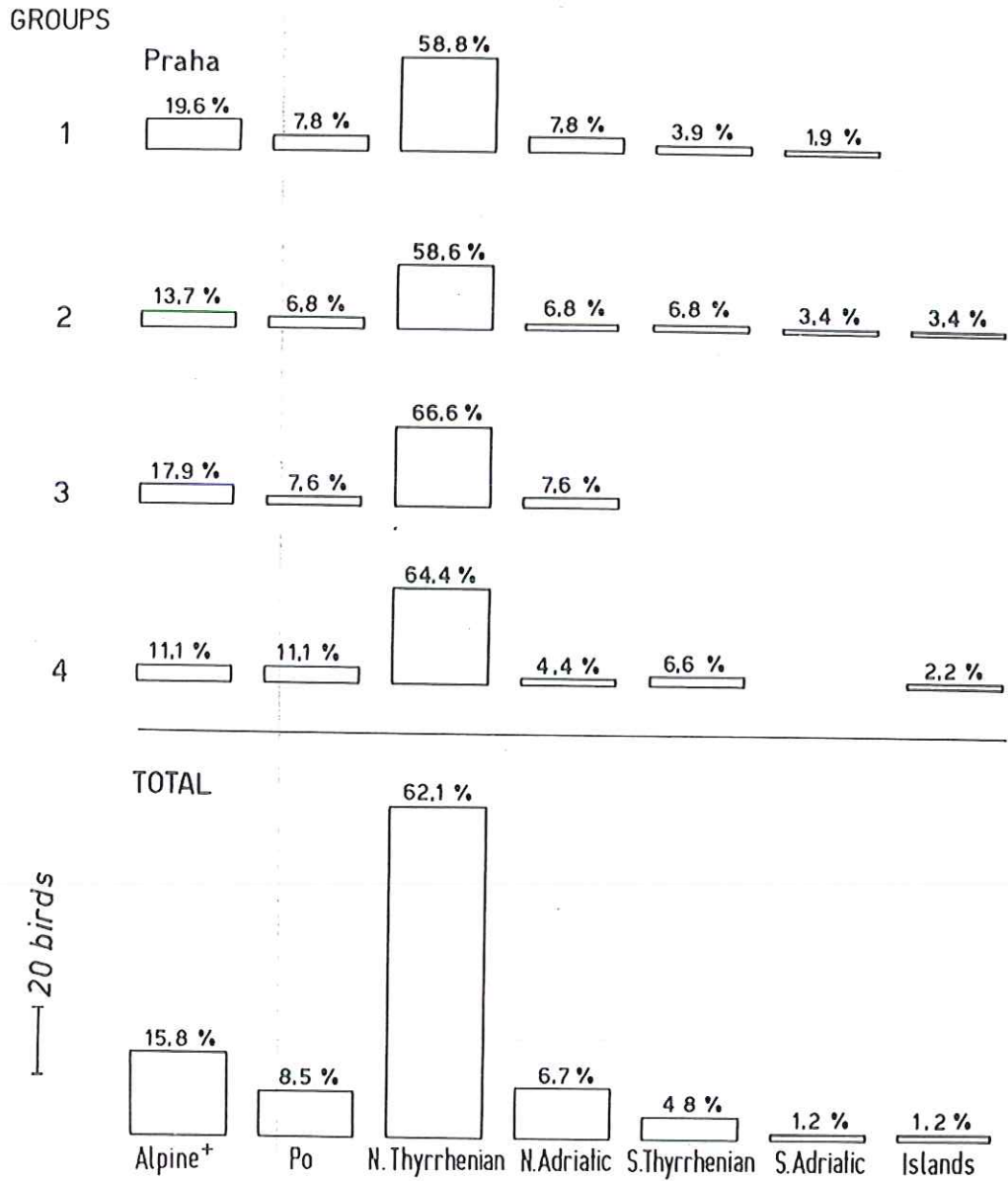


Fig. 5. —Numbers and percents of recoveries in the Euring areas of Italy of 167 chaffinches ringed within the Prague Ringing Centre and recovered in Italy. Group 1: Birds ringed between May 1st and August 31st and recovered in the course of their first following migration (September 1st, same year, April 30th, following year). Group 2: Birds ringed between May 1st and August 31st and recovered after more than 1 year, between September 1st and April 30th. Group 3: Birds ringed between September 1st and April 30th and recovered in the same period of the same year. Group 4: Birds ringed between September 1st and April 30th and recovered in the same period of another year. Total: Groups 1-4 taken together.



*Paris.* No birds were ringed at this Ringing Centre during the breeding season. Birds of group 3 are recovered mainly in the Alpine area (57,1%), those of group 4 are mainly distributed among the Alpine, Po and North Tyrrhenian area (Fig. 9).

**Discussion.**

The data here summarized show that most chaffinches wintering in Italy are coming from North-east; however, a few of them also come from North.

The very high percent of recoveries of group 3 from Prague, Sempach and Budapest suggests that most chaffinches migrating to Italy may winter in the North Tyrrhenian area.

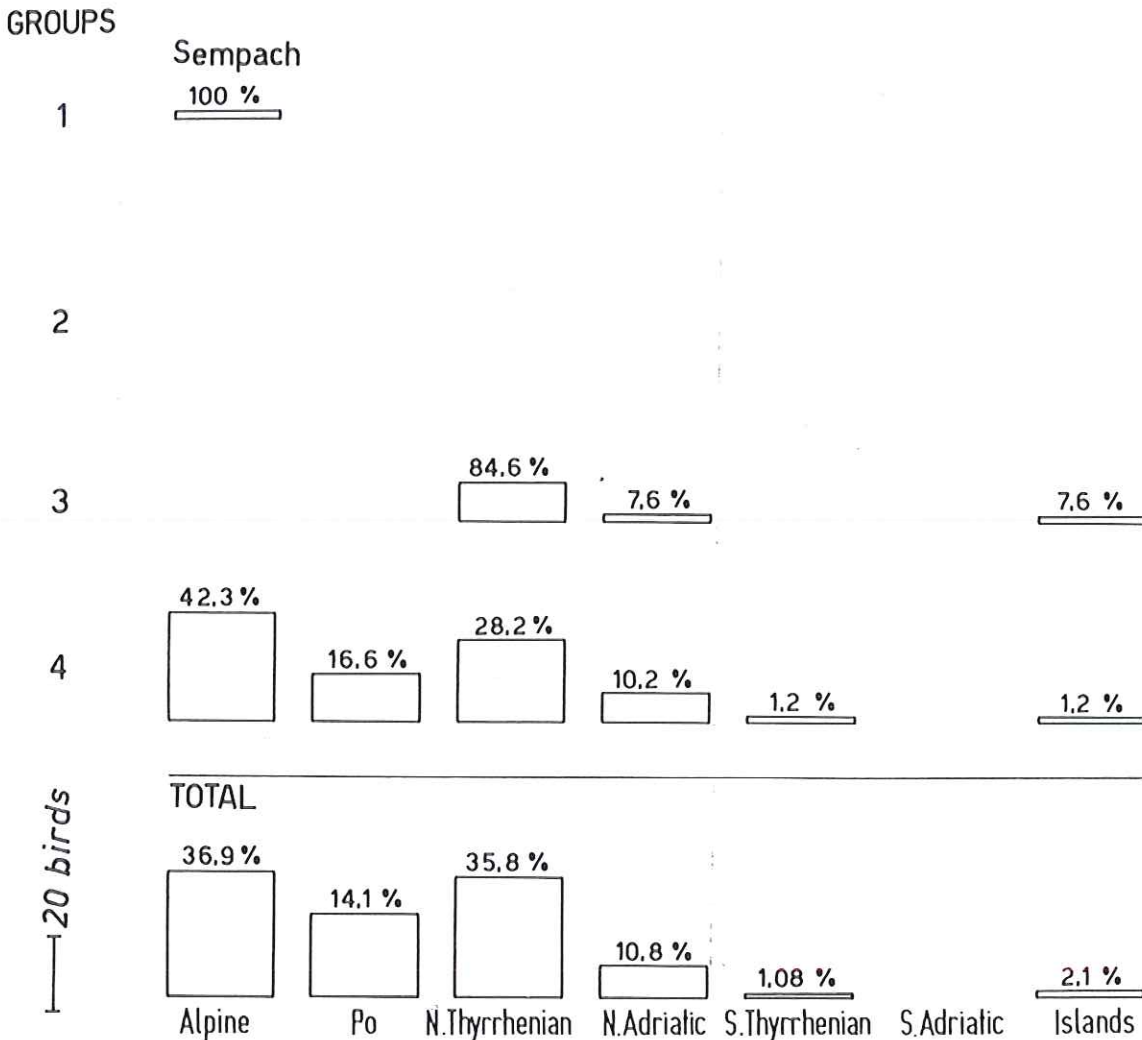


Fig. 6. — Numbers and percents of recoveries in the Euring areas of Italy of 92 chaffinches ringed within the Sempach Ringing Centre and recovered in Italy. See figure 5 for further explanations.

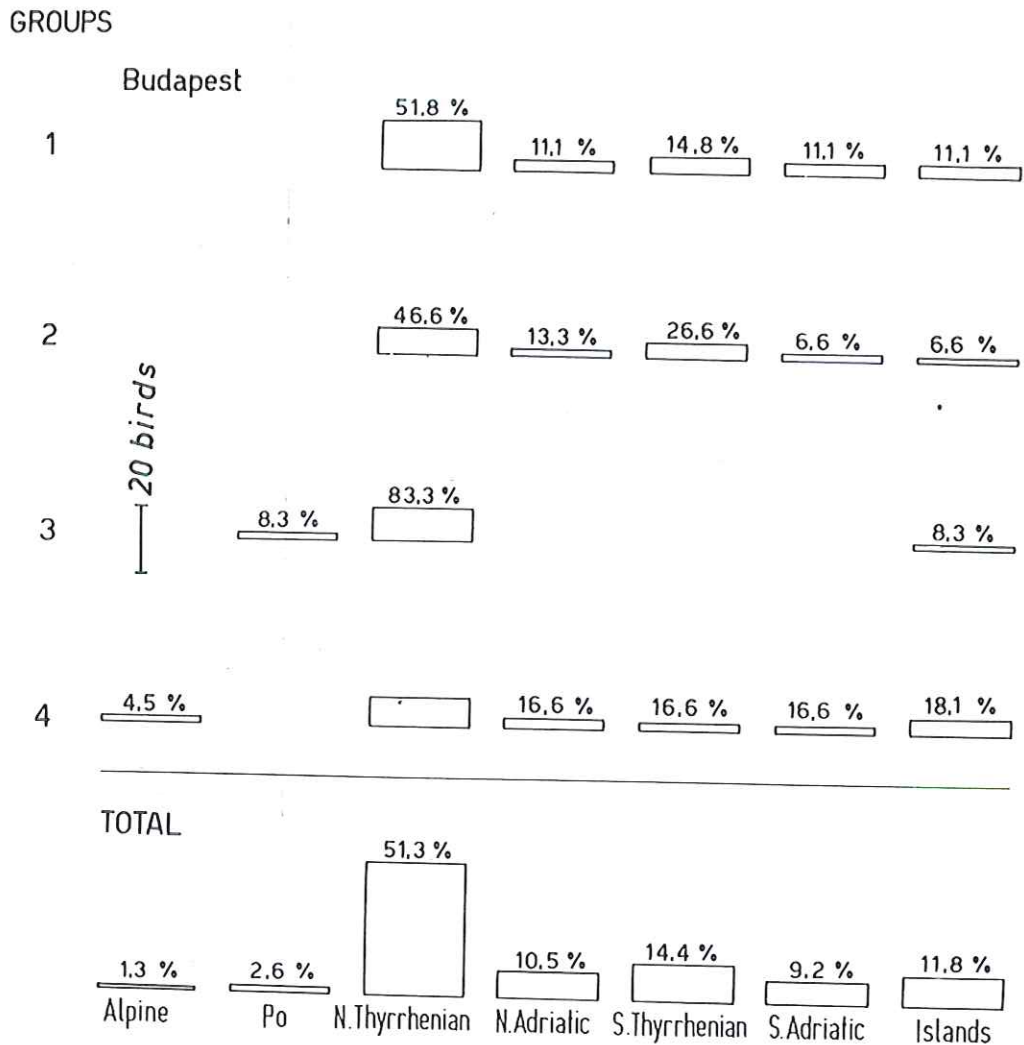


Fig. 7. — Numbers and percents of recoveries in the Euring areas of Italy of 74 chaffinches ringed within the Budapest Ringing Centre and recovered in Italy. See figure 5 for further explanations.

Birds ringed within the Prague and Moscow Ringing Centres may travel through the Alpine and Po area where a number of them are also recovered; on the other hand, birds ringed within the Budapest Ringing Centre may enter Italy through the North Adriatic area. This is suggested by the higher number of recoveries in this area and the lack of them in the Alpine and Po area.

The distribution of the recoveries from the Paris Ringing Centre (57,1% of group 3 in the Alpine area) suggests that the main wintering area for these birds is different or broader from that of chaffinches coming from North-east. However, the number of recoveries available from Paris is too small to allow firm conclusions.

Recoveries of group 4 from Sempach, Paris and Budapest do not occur mainly in North Tyrrhenian, but are also distributed in different areas. This does not allow conclusions about the main wintering area of these birds, but suggests that they may migrate to different areas in different years of their life, as previously reported by Verheyen (1960). The fact that most recoveries were obtained by shooters and not by Ringing Stations may pose some problems: shooters are unevenly distributed in the various Euring areas of Italy, their number is different in the different years and their interest to shoot chaffinches may also be variable.

Therefore, our suggestion about the main wintering area of the chaffinches migrating to Italy still needs support by further studies. Hopefully, the Ringing Stations now operating within the whole country may collect further information about this subject in the next few years.

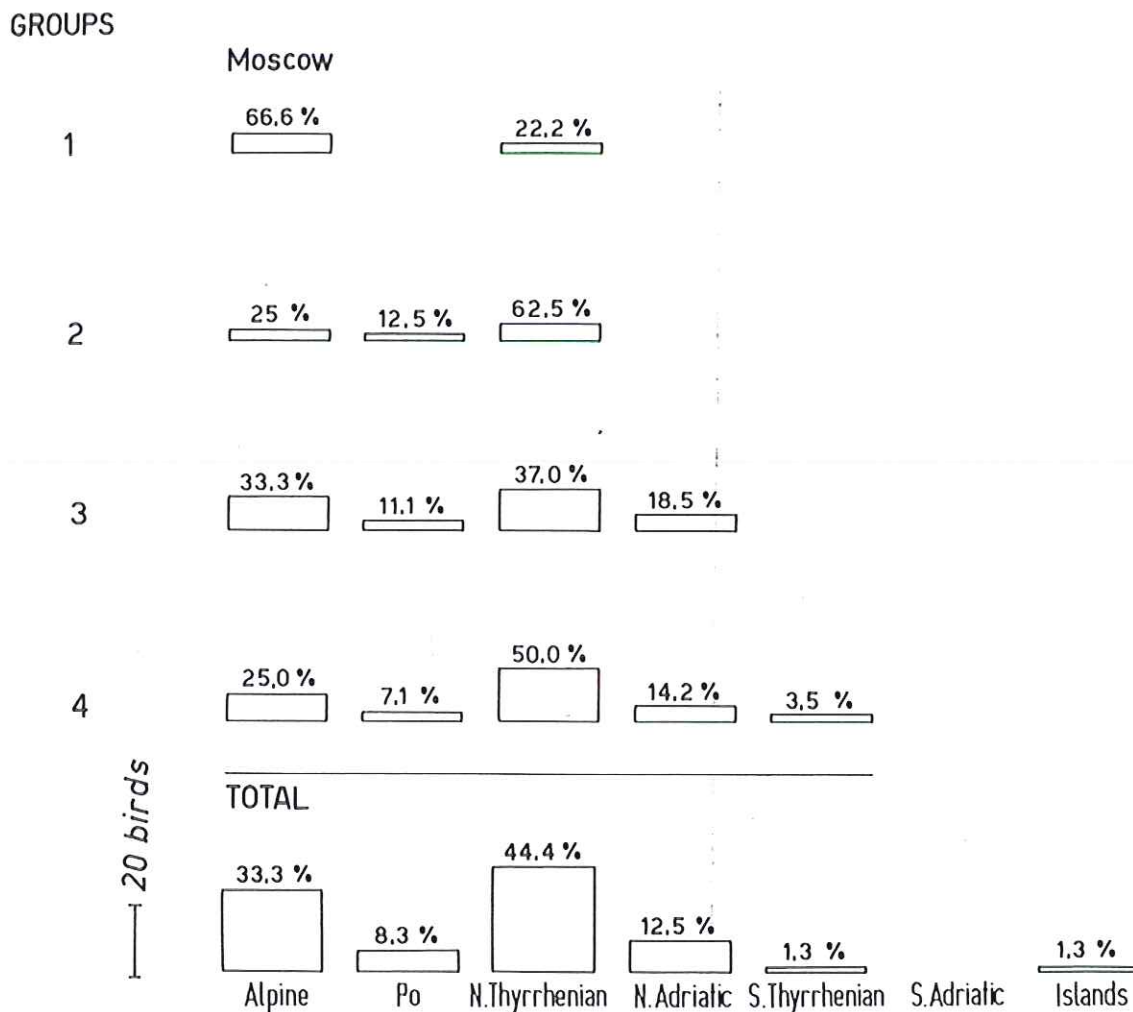


Fig. 8. — Numbers and percents of recoveries in the Euring areas of Italy of 72 chaffinches ringed within the Moscow Ringing Centre and recovered in Italy. See figure 5 for further explanations.

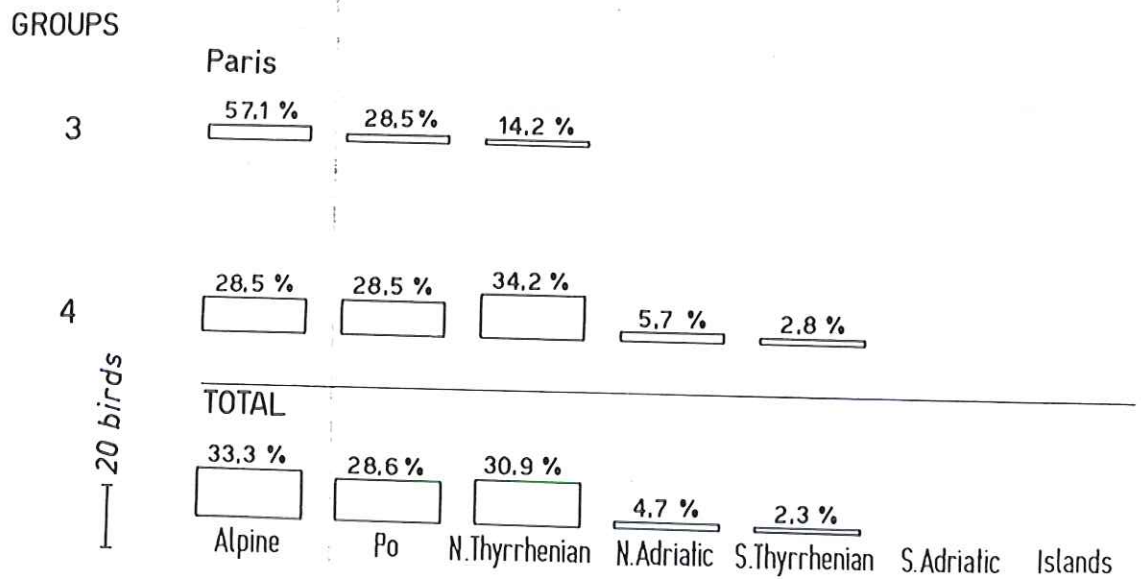


Fig. 9. — Numbers and percents of recoveries in the Euring areas of Italy of 42 chaffinches ringed within the Paris Ringing Centre and recovered in Italy. See figure 5 for further explanations.

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