On the invasion of the Two-barred Crossbill *(Loxia leucoptera bifasciata)* 1956—1957.

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Of the 123 observations on the Two-barred Crossbill considered in this paper, 102 were made in Finland, 9 in Sweden, 5 in Denmark, 5 in Germany and 2 in Norway. The material has been collected partly by means of an enquiry to Finnish ornithologists which was launched by the Zoological Museum of the University, Helsinki/Helsingfors, and the Finnish »Christmas census» which was carried out in 93 places between December 25, 1956 and January 6, 1957, and partly by means of appeals in »Vår Fågelvärld» (Sweden), »Sterna» (Norway) and »Meddelelser fra Dansk Ornitologisk Forening» (Denmark).

I should like to thank all who have responded to the appeal. I should further like to thank Mr. P. GRENQUIST, M. A. and Mr. K. ERIKSSON for their very valuable advice and guidance.

January—August 1956

During the beginning of the year 1956 there were two observations, one from the east border and one from the west border: February 19, 4 specimens at Liperi (Prof. E. Merikallios records) and January 2—15, 10 specimens at Jakobstad (H. Österholm).

The next observations were made in Norway at the ornithological station of Revtangen: 2 spec. on July 9, -56 (H. Holgersen), and in Sweden 6 ♂♂ at Skellefteå on July 21, and July 27 (M. Markgren) at Djanavik off Vojmsjön on the Scandinavian mountain ridge. There were no observations from Finland in July. The first observations from Finland were made in August: Lemsjöholm Askainen 10 specimens on August 25 (L. v. Haartman) and 8 spec. at Yyteri off Pori on August 29 (A. Raukos).

September

The species was more commonly seen. There were 5 observations from Finland and one from Sweden. The number of individuals was still small, however; did not exceed 5.

Sweden: Skellefteå September 6—9 -56 (M. Markgren).

The species was also to be found on the Finnish side of Kvarken, on September 29, 1 juv. Gamlakarleby (R. Casén). This month the species was observed in flight on Signilskär (between Åland and the Swedish coast): »flying specimens» were seen on September 21—29 (M. Rautkari). At Pori the species was apparently stationary (see »Observations January—July 1956»), 4 spec. were seen at Pori

on September 29 (J. Tast). The first specimen was seen in Helsinki, 1 spec. at Otaniemi on September 30 (K. A. Vepsäläinen).

The records in September were all from coastal areas, partly apparently for the reason that the birds took fright at the sight of the sea and halt for a few days in order to rest and feed.

October

The invasion continued. The first observation was from the south of Sweden, 1 juv. being seen at Vetlanda on October 28 (G. Lindberg).

In the north also the number of specimens increased. The following records were made: Pori, October 7, 1 spec., October 8, 5 spec. and October 9, 8 spec. (A. Raukos), Nykarleby October 5—6, October 11, 4 spec. and October 28, 2 ♂♂ + 4 ♀♀ + 4 ♂♂ juv. (B. Klockars), Hämeenlinna October 11, 4 spec., October 20—28, 1 ♂ ad. + 5 juv. (J. Tast). Helsinki: October 8, 2 ♀♀ + 1 ♂. Lauttasaari (K. A. Vepsäläinen), October 17, 2 spec. Lauttasaari (K. A. Vepsäläinen), October 25, 1 spec. (K. A. Vepsäläinen), October 26, 6 spec. Lauttasaari (A. & O. & P. Reinikainen), October 28, c:a 30 spec. Lauttasaari (K. A. Vepsäläinen) and finally Loviisa October 2, 2 spec. (M. Rautkari).

The species thus increased in number particularly at the end of the month. The invasion began to take the shape of a wedge with a clear southwesterly direction.

November

The invasion had reached its widest extent. The first record was made in Germany: ? spec. at Flensburg in Schleswig-Holstein on November 4 (D. Reise c/o G. A. J. Schmidt) and in Denmark: 1 ♂ at Ølsykke November 2—7 (North Sjaelland) (E. T. Pedersen). In Norway the second and last observation of the year was made, viz. 2 spec. seen at Revtangen on November 2 (H. Holgersen).

Tre flocks in Central Sweden were as yet small: Uppsala November 18, ♂ + ♀ (B. Nagell) and at Backa Hedemora November 16—17, 3 spec. (B. Axelsson).

A concentration is to be found in the Helsinki area: November 1, 1 spec. Ryssudden (M. Rautkari), November 1, ca. 10 spec. Herttoniemi (E. Merikallio), November 2, 12 spec. Ryssänkärki (K. A. Vepsäläinen), November 3, ca. 40 spec. Lauttasaari (J. J.), November 4, 12 spec. Lauttasaari (K. A. Vepsäläinen), November 8, 1 ♀ ad. + 8 ♂♂ (A. & O. & P. Reinikainen), November 11, 1 spec. Hästnässund (B. Kumlander), November 11, 15 spec. Lauttasaari (K. A. Vepsäläinen), November 13, 9 ♀♀ + 7 ♂♂ Lauttasaari (A. & O. & P. Reinikainen), November 16, 1 ♂ Lauttasaari (A. & O. & P. Reinikainen), November 21, 1 spec. Kottby (J. J.).

In the north of Finland the species was also to be found, but only in smaller flocks: November 21—30, 2 ad. + 3 juv. at Haapasaari, Viitasaari (H. Halemäki). November 4, 1 spec. at Nykarleby (B. Klockars) and November 11, 1 ♀ juv. at Kempele (Prof. E. Merikallio's records).

The great number of ornithologists in Helsinki but apparently also the capacity of the north coast of the Gulf of Finland as a fly line seems to explane the concentration of the observations in the Helsinki area.

December

December 16 and 23, 1 ♀ at Reinbek (North-East of Hamburg), Germany (E. Jahn c/o G. A. J. Schmidt).

North of Kvarken and in the Helsinki area two concentrations, the number of individuals in the other places small. The species more scattered in the inland part of the country.

West Finland: December 10, 5 spec. Pedersöre (H. Österholm), December 30, 2 spec. Vasa (»Christmas census»), December 27, 2 spec. Hämeenlinna (J. Tast), December 24, 2 ♂♂ + 2 ♀♀ Naantali (K. Venhe), December 29, 2 spec. Kristinestad (»Christmas census»).

The Helsinki area: December 2, 3 spec. ♀-plumage Lauttasaari (A. & O. & P. Reinikainen), December 2, 2 spec. Hästnässund (B. Kumlander), December 6, 1 spec. Kallvik (M. Rautkari), December 15, 4 spec. Hästnässund (B. Kumlander), December 16, 1 + 2 spec. Ryssänkärki (K. A. Vepsäläinen), December 21, 4 spec. Hästnässund (B. Kumlander), December 22, 4 spec. Kuusisaari (A. & O. & P. Reinikainen), December 26, 1 ♂ ad. Lauttasaari (A. & O. & P. Reinikainen), December 27, 1 spec. Stora Hoplaxvägen (»Christmas census»), December 27, 7 spec. Lauttasaari (»Christmas census»), December 30, 3 spec, Degerö (J. J.) and December 31, 3 spec. Tarvo (K. A. Vepsäläinen)

Southeast Finland: Punkaharju December 29, 4 spec. (»Christmas census»), Hamina December 20, 6—3 spec. (»Christmas census»), Imatra December 6, 1 ♀ (R. Kotilainen) and December 24—25, Joutseno 2 spec. juv. (T. Piiparinen).

January

The invasion was still of large extent: Uppsala January 27, -57, 3 ♀♀ or juv. (B. Nagell), Charlottenlund, Copenhagen January 12, 1 ♂ + 2 ♀♀, January 16—25, 2 ♂♂ + 1 ♀, January 30, ♂ + ♀ (E. T. Pedersen) and Reinbek, Germany January 6, 2 ♀♀ (H. E. Brennecke c/o G. A. J. Schmidt).

From the north of Finland there was only one record: January 4, 2 ♀♀ Oulu (J. Ruosteensuo).

All the other observations were from the south of Finland with the centre of concentration in the Helsinki area: January 1, ? spec. Lauttasaari (K. A. Vepsäläinen), January 6, 1 ♂ Lauttasaari (A. & O. & P. Reinikainen), January 18, 2 spec. Hästnässund (B. Kumlander), January 18, 4 spec. Kottby (J. J.), January 21, 5 spec. Hästnässund (B. Kumlander), January 21, 2 ♂♂ Ruskeasuo (K. A. Vepsäläinen), January 23, 1 spec. Hästnässund (B. Kumlander), January 26, 1 ♂ juv. Pohjois-Haaga (Luonto-seura), January 28, 1 ♂ + 2 ♀♀ Hästnässund (B. Kumlander), January 28, 1 + 3 spec. Lauttasaari (A. & O. & P. Reinikainen) and 31, 1 spec. Hästnässund (B. Kumlander).

To the north of Helsinki the species was also seen on January 9, 1 ♂ + 1 ♀ at Nurmijärvi (»Christmas census»).

From the southwest of Finland, there was only one observation: January 29, 2 ♂♂ + 1 ♀ at Naantali (K. Venhe), from the eastern part, however, two observations: January 13 1 ♀ at Imatra (Risto Kotilainen) and at Nokia January 20, 2 ♀♀ (H. Karhe).

The species had apparently begun to withdraw towards the breeding area.

February

Only a few specimens observed in Denmark and Sweden: February 18—23, 1 ♂ in Bispebjerg cementery, Copenhagen (E. T. Pedersen), February 10, 3 spec. Hisingen Gothenburg (I. Ahlén), and February 2—10, 1 ♂ at Uppsala (B. Nagell).

In Finland the number of individuals had already decreased considerably. From the southwest of Finland there was again only one observation: Naantali February 14, ♂ + ♀ (K. Venhe).

In Helsinki scattered remnants of the previous months' Swedish concentration could still be found: February 5, 4 spec. Lauttasaari (J. J.), February 9, 1 ♀ Hästnässund (B. Kumlander), February 10, 1 ♂ Rajasaari (K. A. Vepsäläinen), February 10, 1 spec. (J. J.), February 11, 1 ♂ Hästnässund (B. Kumlander), February 11, 1 spec. the Botanical garden (J. Tast), February 15, 1 ♂ + 1 ♀ Hästnässund (B. Kumlander), February 17, 3 ♂♂ + 2 ♀♀ Hertonäs (Henry Jonasson) and February 20, 1 ♂ + 2 ♀♀ Munkkiniemi (J. Kalervo).

The easternmost record during this month was from Kerava (northeast of Helsinki) where 10 spec. were seen on February 2 (M. Sarkanen).

March—December 1957

There were only two observations: Vasa March 8, 1 spec. (J. G. Andersson) and Nokia March 4, 1 ♂ (H. Karhe).

The observations from the end of the year 1957 were as follows: October 24, 3 ♂♂ + 2 ♀♀ Pielisjärvi Kuutiovaara (E Nyholm), November 11, 2 ♂♂ Äänekoski (Martius-seura) and December 3, 3 ♂♂ + 2 ♀♀ + 1 juv. Sanginjoki Loppula (E. Nyholm).

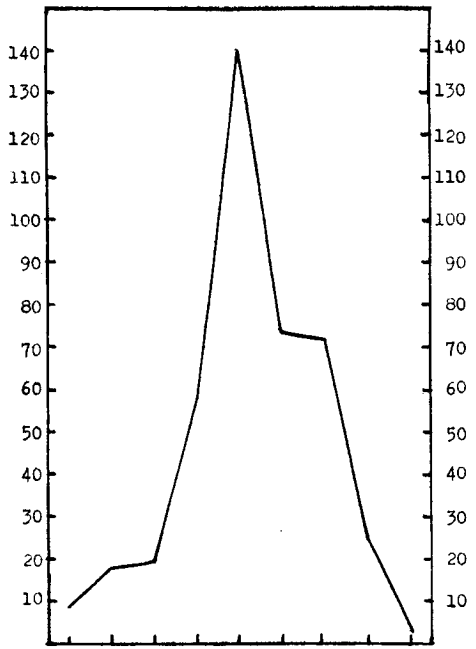
From the foregoing monthly surveys it will thus be seen that the invasion began in July and ended between the close of February and middle of March. The invasion reached its maximum in November when 140 birds were seen.

Food

During the winter of 1956—57 it seems that throughout most of Northwestern Europe the supply of rowan berries was very good, whereas east of the Archangel—Moscow line it was a bad year for rowan berries (HANSSON & WALLIN 1958).

The 203 reports are distributed between the different countries in the following way: Germany 2, Denmark 9, Sweden 13 and Finland 175.

The trees in which the birds were seen were rowan *(Sorbus aucuparia)* 161 spec. (79.3 %), common alder *(Alnus glutinosa)* 19 spec. (9.3 %), European larch *(Larix europaea)* 10 spec. (4.9 %), spruce



Diag. 1. Number of individuals by month (July 1956—March 1957).

(Picea exelsa) 7 spec. (3.4 %), pine *(Pinus silvestris)* 2 spec. (0.9 %), birch *(Betula pubescens)* 2 spec. (0.9 %) and Siberian larch *(Larix sibirica)* 2 spec. (0.9 %).

The species seems to prefer rowan berries to spruce kernels, as was indicated during the winter of 1956—57 when at least in south of Finland there was an abundance of spruce cones, left practically untouched by the Two-barred Crossbill, while rowan berries were eaten with a good appetite.

But both rowan berries and spruce kernels could be considered as reserve food only, in as much as in Denmark and Germany, where the larch grows in larger areas, according to the 11 reports of the Two-barred Crossbill from Denmark and Germany the species confined itself to the seeds of this plant.

With regard to nourishment, it can be stated that the said invasion coincided with a time of extremely good food supplies in the areas invaded.

Summary

The invasion of 1956—57 occurred from the middle of July until the middle of March, the peak being in November.

The invasion had not a particularly large range, the abundant supply of food, chiefly rowan berries, having an absording effect on the birds.

Literature: AHLÉN, I., 1958, Vår Fågelvärld 17: 60. — AXELSON, R., 1958, Ibid. 17: 163. — KUMARI, E., Eesti NSW Linnud 1954. — LINDBERG, G., 1957, Vår Fågelvärld 16: 163. — MARKGREN, M., 1957, Ibid. 16: 207—209. — HANSSON, G. & WALLIN, L., 1958, Ibid. 17: 207—240.

Selostus: **Kirjosiipikäpylinnun *(Loxia leucoptera bifasciata)* vaelluksesta 1956—57.**

Tutkimus perustuu 123:een havaintoon josta 102 tehtiin Suomessa, 9 Ruotsissa, 5 Tanskassa, 2 Norjassa, ja 5 Saksassa. Tiedustelut lajin esiintymisestä Belgiassa, Englannissa, Itävallassa, Neuvostoliitossa ja Sveitsissä eivät tuottaneet myönteisiä tuloksia.

Vaellus tapahtui kesäkuun puolivälistä maaliskuun puoliväliin. Sen huippu oli marraskuussa.

Vaellus ei ollut erikoisen laaja johtuen hyvien ravinto-suhteitten absorboivasta vaikutuksesta. Ravintona linnut käyttivät pääasiassa pihlajanmarjoja, mikä johtui harvinaisen hyvästä pihlajanmarjasadosta.

Käpylintujen suurvaelluksesta 1956 ja erityisesti niiden ikäsuhteista.

OLAVI HILDÉN

Eri ikäluokkien osuudesta invaasiolajien vaellusparvissa on olemassa varsin niukasti tarkkoja tietoja. Närhestä, pähkinähakista, pikkukäpylinnusta ja käpytikasta on tehty havaintoja vanhojen ja nuorten lintujen lukusuhteista, mutta nämäkin aineistot ovat yleensä melko pieniä tai epämääräisiä. Yleisenä sääntönä näyttää olevan, että invaasioihin osallistuu suhteellisesti paljon enemmän nuoria kuin vanhoja lintuja (LACK 1954). Lisänä entisiin tietoihin ansainnevat Sig-