Finnish nest records

LARS VON HAARTMAN

VON HAARTMAN, L. [Zool. Dept., Univ. of Helsinki, P. Rautatiekatu 13, SF-00100 Helsinki 10, Finland] 1974. — *Finnish nest records.* Ornis Fenn. 51:48—58.

The Finnish nest record scheme was started in 1954. It operates as part of the phenological investigations of the Finnish Society of Sciences. By April 1, 1973, the number of nest-cards amounted to 60 078. Lately, the annual contribution has been close on 6 000 cards, and the total annual numbers are still tending to increase. The cards on hole-nesting species have grown in number much more than those on open-nesting species. Annual variations in numbers of cards may or may not reflect variations in populations. In *Parus major* (Fig. 2) the small number of cards in 1956, 1958, and 1966 indicate population minima after hard winters. The steady increase in annual numbers of cards of *Prunella modularis,* and the decrease in numbers of cards of *Numenius arquata* (Fig. 2) probably mirror population trends. Far fewer cards are available from northern Finland than from Finland south of lat. 64° N. No signs of improvement are visible with respect to the situation in northern Finland. The standard of the nest records has improved: the number of cards recording a single visit has decreased, and the average number of visits recorded per nest has increased strongly. Sources of error with respect to utilizing the cards as a random sample are discussed. The information available concerning the breeding biology of passerine species was recently summarised (v. HAARTMAN 1969), including cards up to and including 1962.

1. Short history

I became acquainted with the British nest record cards through my friend Bruce Campbell (cf. also CAMPBELL 1960) at the ethological conference in Oxford, in December 1953. At that time, I had recently been appointed leader of the phenological investigations of the Finnish Society of Sciences. The phenological studies in a classic sense (and the Finnish ones are classic, they go back to Linnaeus' time) deal with the timing of bird migration, the first appearance of insects in spring, the flowering of plants, the beginning of harvest, etc. Data on birds' nests were included only occasionally.

The new method of collecting information promised a way of penetrating a field not yet covered by the Finnish phenological investigations. Meanwhile, the Finnish nest record scheme has developed into the most important branch of these investigations. Whereas the extensive work on arrival and departure times of migratory birds, continued for more than two centuries, resulted in only fragmentary publications, the information on the breeding biology of Finnish birds has recently been summarised (v. HAARTMAN 1969. v. HAARTMAN et al. 1963—72). The last nest-cards used in the 1969 summary were from

1962, the total number of nest-cards was 24 000 odd. The nest-cards were supplemented with cards recording published information and information from ornithological archives, collections, etc., approx. 20 000 nests, and cards recording ringing of nestlings, over 33 000.

By April 1, 1973, the total number of nest-cards had risen to 60 078, covering 211 species. The total number of nests recorded is somewhat larger, as a few cards on social species like *Podiceps cristatus* and *Sterna hirundo* cover more than one nest.

The rapid increase in the total number of cards, now approaching 6 000 annually, tends to render the previous summary (v. HAARTMAN 1969) obsolete. But becoming out of date is the fate of most scientific studies, and the more important the studies, the more work they encourage, and the sooner they become out of date.

The number of nest-card contributors has risen from 61 in 1956 to 153 in 1970. The majority of contributors are bird ringers, but collaboration in the scheme has no connection with acquiring a licence to ring birds. This is justified for ethical reasons: an incorrectly applied ring may lead to the death of a bird; a nest-card filled up incorrectly will do much less harm.

A list of the contributors and the number of nest-cards they have handed in is published annually in the Proceedings of the Finnish Society of Sciences (Finska Vetenskaps-Societetens Förhandlingar), published in Helsinki. It is impossible here to mention even the most active of the contributors. But I wish to express special thanks to Mr. A. O. Salonen, of Tampere, who, apart from being a competent nest-finder himself, has arranged a team of contributors in his home town and kept this team working actively for two decades. Like most other contributors, Mr. Salonen is an amateur ornithologist.

The Appendix gives the total number of nest-cards per species received by April 1, 1973.

Finland is probably the northernmost country in the world where a nest record scheme of some importance is in operation. In this context, northernmost is an important attribute, because many problems, such as breeding times (cf. v. HAARTMAN 1963) and clutch-sizes (cf. v. HAARTMAN 1973) at high latitudes, can be studied more easily here than anywhere else except, perhaps, in the neighbouring countries. It should be kept in mind that northern Finland is on the same latitude as northern Alaska, which, in comparison, has a very impoverished bird fauna.

According to MAYER-GROSS (1970 a), there are approx. 30 nest record schemes operating in the world. I have no information about most of them. The British one, probably the largest, produced 25 000 cards in 1967, the total number of nest records in 1939—67 being 238 393 (MAYER-GROSS 1970 b). It is obvious that the British scheme operates with 4—5 times as many nest-cards as the Finnish one. A comparison between the species heading the list in the two countries is given in Table 1. The largest differences are usually due to the rarity or absence of a species in one of the countries. But the explanation may be more complex. For instance, nests of *Erithacus rubecula* are obviously much more difficult to find in Finland than in Great Britain. But why Finland should produce nearly as much information about nests of *Muscicapa striata* as Great Britain is not clear to me. With respect to hole-nesting birds Finland stands out fairly well (note the comparatively numerous cards of *Parus major* and *Sturnus vulgaris* in Finland). Nest-boxes are probably cheaper in Finland, a wood-producing country, and it has become a fashion among ornithologists here to put up nest-boxes. Nowadays, quite a few Finnish ornithologists are "nest-box capitalists".

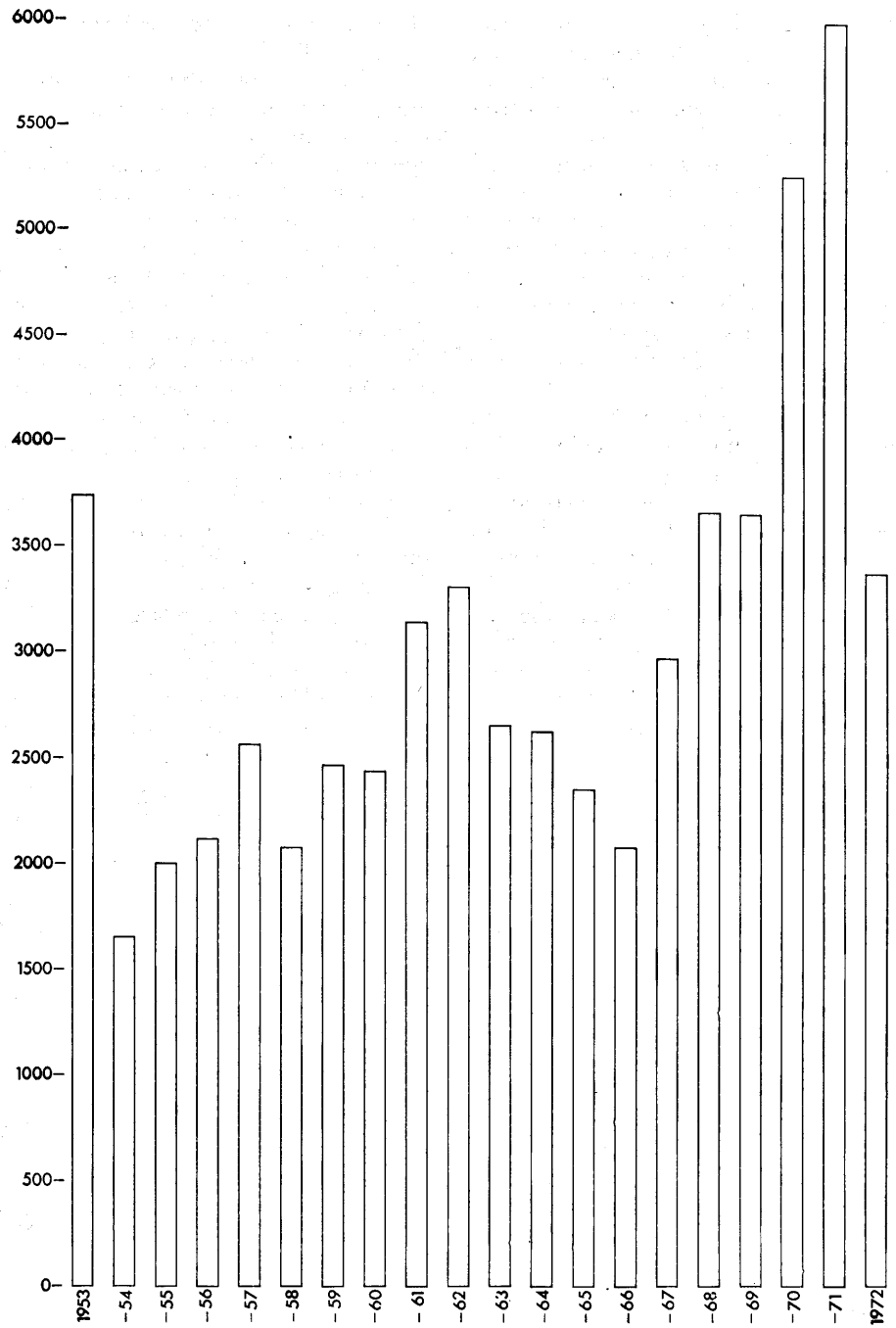

FIG. 1. Annual totals of nest-cards of the Finnish Society of Sciences. Note that a considerable number of cards will still be added to the year 1972 (and probably also, although to a lesser extent, to the years 1971 and 1970). The year 1953 includes all cards from this and earlier years.

2. Annual fluctuations and trends in numbers of nest-cards

The annual totals of nest-cards of the Finnish Society of Sciences are shown in Fig. 1. The recent increase in the annual totals is undeniable. Actually, however, the trend is somewhat less encouraging than appears from Fig. 1. A swift glance at the records reveals that the increase has mainly concerned a restricted group of species, i.e. birds that use nest-boxes. *Ficedula hypoleuca, Parus major,* and *Sturnus vulgaris* are the most important examples, but the cards on less frequent hole-nesting birds have also increased disproportionally. On the other hand, little increase seems to be found in species with well-concealed nests.

Fig. 2 shows the annual fluctuation in the numbers of nest-cards of a few, selected species. The increase is most striking and nearly continuous in the three hole-nesting species depicted, *Parus major, Sturnus vulgaris,* and *Bucephala clangula.* In *Parus major* the decrease of the population after the very cold winters of 1955—56, 1957—58, and 1965—66 is also clearly discernible.

Anas platyrhynchos and *Turdus philomelos* are examples of species in which no clear trend can be detected. *Vanellus vanellus* is erratic. I have no idea about what causes this strange fluctuation of nest records.

Finally, there are species for which decreasing or increasing numbers of cards seem to reflect true population changes, though conclusions about such changes are generally difficult to draw from the numbers of nest-cards (cf. GINN 1969). It would be meaningless, for instance, to relate the annual numbers of cards of the different species to the grand totals, as this would mainly indicate an increase in hole-nesting birds, and a decrease of the others. But the continuous rise in numbers of nest records of *Prunella modularis* seems to reflect an increase of this species in Finland, and the striking decrease of nest records of *Numenius arquata* seems to signify a real reduction in its abundance. This reduction is probably caused by changing land use. In earlier times, cattle used to graze on shore meadows, keeping the vegetation low. Recently, this old-fashioned way of pasturing has been abandoned, and, as a consequence, the shore meadows are rapidly changing. Bushes, tall herbs, and reeds are invading the habitat and making it unsuitable for a number of shore bird species.

TABLE 1. Total number of nest records of the British Nest Record Scheme in 1967 (MAYER—GROSS 1970 b) and of nest-cards of the Finnish Society of Sciences in 1972. Species at the top of the record list in one or other country were included.

	Gt. Br.	Finl.		Gt. Br.	Finl.
Vanellus vanellus	4 921	1 284	*Erithacus rubecula*	5 734	228
Columba palumbus	5 390	560	*Muscicapa striata*	2 788	1 930
Hirundo rustica	8 769	548	*Ficedula hypoleuca*	909	4 724
Parus major	6 180	3 750	*Prunella modularis*	10 901	365
„ *caeruleus*	8 291	266	*Motacilla alba*	1 535	1 681
Turdus pilaris	—	3 198	*Sturnus vulgaris*	3 160	2 427
„ *philomelos*	26 454	2 055	*Carduelis chloris*	5 153	170
„ *iliacus*	2	3 951	„ *cannabina*	9 200	228
„ *merula*	43 366	722	*Fringilla coelebs*	7 063	2 203

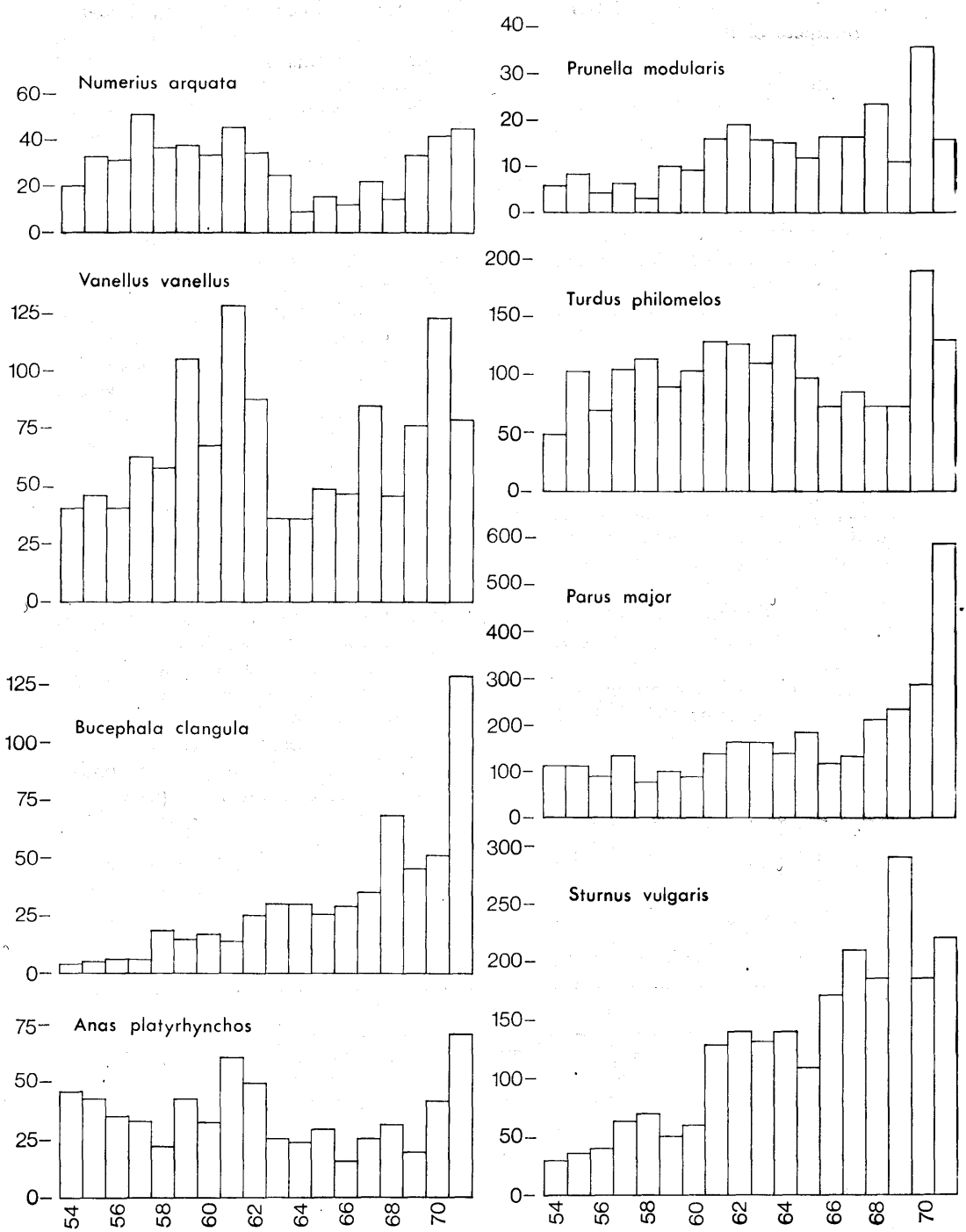

FIG. 2. Annual fluctuation in the numbers of nest-cards of selected species.

3. How well are the different parts of Finland covered?

On glancing over the nest-cards one immediately realises the sparsity of records from north of lat. 64° N. The decreasing abundance of the majority of species, and the narrowing of the country in this region would be expected to cause a moderate decrease in the numbers of nest records. A much more important factor, however, is undoubtedly the lack of observers in the north.

As a yardstick of the numbers of nest records from different parts of Finland, a common species, *Muscicapa striata,* was selected (Fig. 3). Only 1.3 per cent of all the nest records of this species are from north of lat. 66°N, though it is abundant up to about lat. 68° N (Fig. 4; cf. MERIKALLIO 1958). I have not recorded the number of participants in the nest record scheme in different parts of Finland, but ERIKSSON's (1970) map of the geographical distribution of bird ringers (Fig. 5) probably gives a true picture of other ornithological activities as well. Detailed comparisons between ringing activity, frequency of *Muscicapa striata,* and numbers of nest-cards are not possible, as the geographical division of the country used in MERIKALLIO's and ERIKSSON's maps does not follow the latitudes. The number of ringers in the zone 60°—62° N is roughly 6 times that of the zone 62°—64° N, and the number of ringers in this zone, again, is about 3 times that of the zone 64°—66° N. The decreasing number of nest-cards tallies well with these figures. In the zone 66°—68°, however, the number of nest-cards seems to lag behind both the number of ringers and the abundance of the species.

I entertained hopes that a recent move towards increasing effectiveness of bird study in northern Finland would show results, but an analysis of nest-cards gives little cause for optimism. Up to 1959, only 3.4 per cent of the cards on *Muscicapa striata* were from Finland north of lat. 64° N, and 6.8 per cent of the cards were from this region in 1960—1969, but only 4.3 per cent in 1970—1972. The general trend of the human population in Finland is towards concentration in the large cities in the southwest corner of the country. The recent, systematic studies by HILDÉN (1967) and his collaborators will obviously improve the situation with respect to the breeding biology of Lapponian birds, but it would be desirable to have continuous observations over longer periods for this part of the country.

4. How complete are the nest records?

The participants in the nest-card scheme are not discouraged from handing in incomplete cards, but it has been emphasised that the value of a card increases enormously if the nest can be visited repeatedly, so that at least the clutch size and, preferably, also the approximate date of laying can be given.

Again, I have used *Muscicapa striata* to test the status of the nest-cards. The cards of 1954, 1964, and 1971 (the most recent year for which practically all cards have been sent in) were used as a sample. The trend is towards more complete data.

Year	No. of cards	Single visit recorded	Average no. of visits per card
1954	73	52.1 %	2.8
1964	99	36.4 %	3.8
1971	168	26.2 %	4.1

With records of about 6 visits to a nest, if these are sensibly timed, a nest-card is likely to give information about laying date, clutch size, hatching date, brood size, nesting success, and date of fledging. Even in 1971 only 20.8 per cent of the nest-cards contained 6 or more records. On the other hand, many nests of *Muscicapa striata* are destroyed, which naturally reduces the average number of visits paid to the nests.

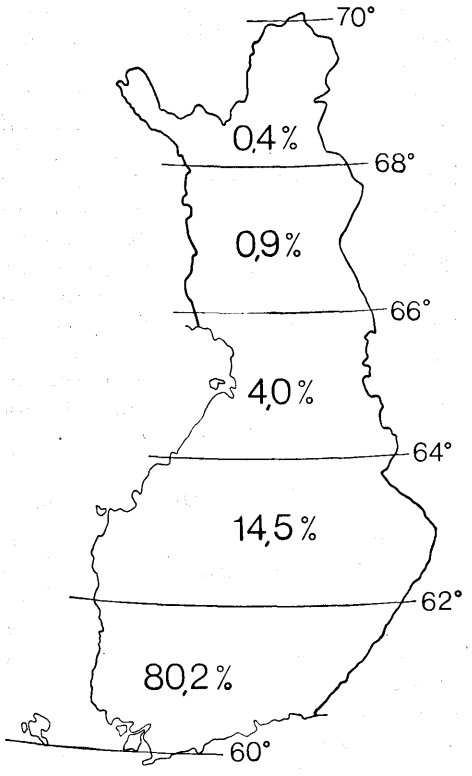

FIG. 3. Percentage of nest-cards of *Muscicapa striata* in the different regions of Finland.

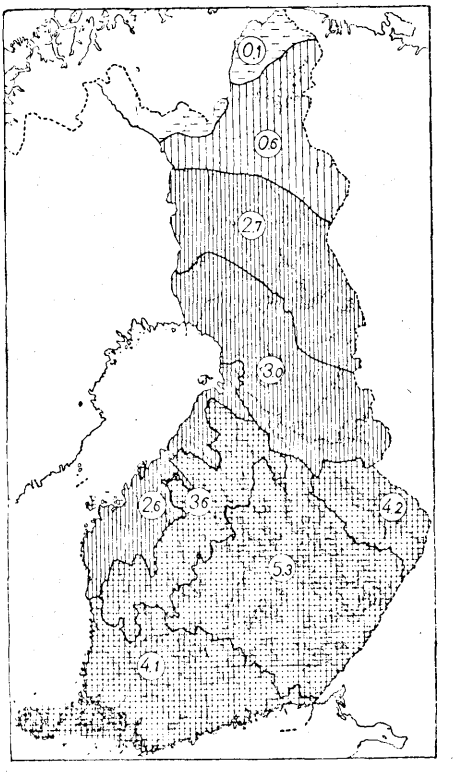

FIG. 4. Distribution of *Muscicapa striata* in Finland, according to MERIKALLIO 1958. The figures in circles give the number of pairs per sq.km in the region in question.

5. How reliable are the cards?

Statistics of almost all kinds are subject to some sort of bias. This bias may be easy to spot, as in the case of migratory birds arriving mainly on Sundays, and of birds nesting 10, 15, or 20 m above the ground, but seldom 11, 16, or 21 m. But there are cases which are by no means obvious, yet imply a more serious distortion of the truth.

Comparatively few attempts have been made to test the reliability of the data derived from nest-cards. The annual variation in the average laying date of *Parus major* was compared with respect to three different sources of data (V. HAARTMAN 1963): (1) The population nesting in nest-boxes at Lemsjöholm. The nest-boxes were inspected at short intervals, and the result may be considered practically correct and usable for testing other data of unknown reliability. (2) The nest-cards from Finland, south of lat. 62° N. (3). The data on the ringing of nestlings in the zone in question. The annual breeding times obtained from these three sources varied practically in parallel throughout the years 1953—61, but the average of the nest-cards was invariably one or more days later than the figures obtained from my study population. The difference may be real, or the calculation of laying

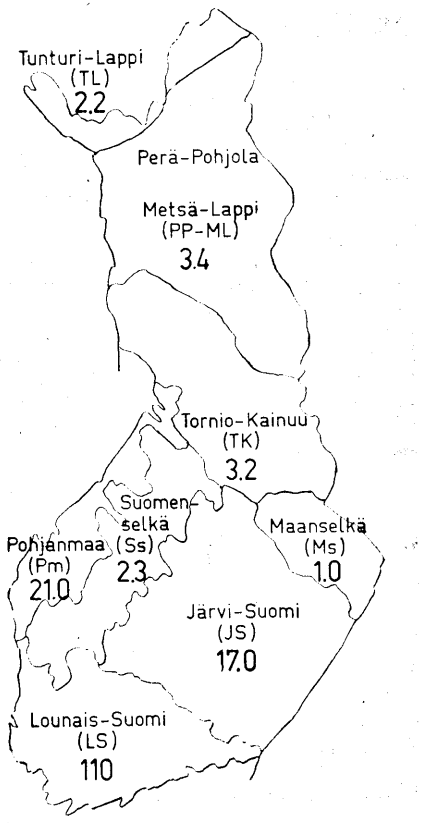

FIG. 5. Coefficients for ornithological activity, based on the number of ringers, in the different regions of Finland. From ERIKSSON 1970.

dates from the nest-cards may have yielded results with a built-in error. I am aware of at least one such source of error. Though small, it may explain the discrepancy with respect to the two sets of averages. If a brood of *x* young was known to have fledged at a certain date, the laying date was calculated by counting backwards — fledging period + incubation period + period of laying *x* eggs. Now, the real clutch-size is likely to have been higher than *x,* as eggs, and even more probably young, may disappear. If absolute correctness had been aimed at, a correction for this disappearance would have been necessary. But complicated corrections would demand the use of an electronic computer and must be postponed until the future.

A comparison of data calculated from nest-cards with monographic breeding studies carried out by scholars not involved in the scheme is, paradoxically as it may sound, likely to give results favouring criticism of the reliability of the cards. It is, indeed, more in the interest of scholars to publish results which aim at correcting data already published than to reinforce them. With this reservation in mind, I wish to refer to a couple of monographs, which have yielded results useful for testing the reliability of the nest-cards.

LEINONEN (1973), in his study on *Motacilla alba,* generally found little discrepancy between his local data on breeding time, clutch-size, and incubation and nestling periods, and the results obtained from the nest-cards (v. HAARTMAN 1969). But with respect to the nest-site LEINONEN (like HYVÖNEN & PUTKONEN 1937) found a significantly higher percentage of nests in man-made sites. It is likely that LEINONEN's data come closer to the truth, as the description of the nest-sites in the nest-cards is usually brief and devoid of details.

TYRVÄINEN (1969) compared incubation and nestling periods of *Turdus iliacus* obtained from the nest-cards (v. HAARTMAN 1969) with those from his own monographic study on the species. He found incubation periods agreeing, bust nestling periods significantly shorter than those calculated from the nest-cards. It is possible that I have overestimated the nestling period, working on a hypothetical duration of this period, based on other *Turdus* species, and discarding any seemingly too short periods as referring to lost broods. An analysis of the vast amount of data I have collected since then may settle the problem.

Finally, I wish to stress the general

danger of incorrect hypotheses as a source of error in statistics on breeding biology. It is well known that predators have a "searching image" (e.g. TINBERGEN et al. 1967) of where to find nests of prey birds. Ornithologists, too, have searching images, which may be distorted by accidental experience or, more often, by mistaken information provided by ornithological publications. An example of errors of this kind may be mentioned. According to LINKOLA (in v. HAARTMAN et al. 1963—72), *Columba palumbus* frequently nests in the crowns of pines in open pineforests. But nobody seems to have searched for them there, and little is known about such nests.

Selostus: **Suomen pesäkorttiaineisto.**

Pesäkorttiaineiston keruu alkoi Suomessa vuonna 1954 osana Suomen Tiedeseuran fenologisia tutkimuksia. Aineistoa on käytetty *Pohjolan linnut värikuvin* -teoksen pesimistä käsittelevän kappaleen kirjoittamiseen. Vuonna 1969 on julkaistu yleiskatsaus varpuslintujen pesimiseen, jossa käytettiin hyväksi pesäkorteilla olevat tiedot vuoteen 1962 asti. Nykyään tallennettujen pesäkorttien määrä on vuoteen 1962 mennessä kertyneeseen aineistoon nähden kolminkertainen (1. huhtikuuta 1973 mennessä 60 078 kpl 211 lintulajista) ja vuosittainen lisäys on n. 6000 korttia (Kuva 1). Kolopesijöitä koskevien korttien määrä kasvaa paljon nopeammin kuin avopesijöiden.

Korttien määrän vaihtelut saattavat heijastaa todellisia kannanvaihteluja (Kuva 2). Talitiaiskorttien pienet määrät vuosina 1956, 1958 ja 1966 ovat osoituksia kovia talvia seuranneista populaatiotiheyden aallonpohjista. Rautiaiskorttien määrän kasvu ja kuovikorttien määrän väheneminen saattavat olla osoituksia populaatiokoon kehityksen suunnasta.

Korttien maantieteellinen jakautuma ei ole edustava, sillä 64°N leveyspiirin pohjoispuolelta on hyvin vähän aineistoa, eikä vuosien varrella ole tapahtunut kehitystä parempaan suuntaan (Kuvat 3, 4 ja 5).

Korttikohtaisen informaation määrä on lisääntynyt, mikä näkyy pesälläkäyntien määrän keskiarvon kasvuna (s. 54).

Korttien käyttöön pesimäbiologisen tarkastelun aineistona liittyy virhetekijöitä, joiden vaikutusta kirjoituksessa tarkastellaan.

References

CAMPBELL, B., 1960. The research methods of the British Trust for Ornithology. — Proc. XII Internat. Orn. Congr. Helsinki: 144—152.

ERIKSSON, K. 1970. Lintuharrastuksen kehitys ja havaintojen määrä Suomessa. — Ornis Fenn. 47:24—29.

GINN, H. B. 1969. The use of annual ringing and nest record card totals as indicators of bird population levels. — Bird Study 16:210—248.

v. HAARTMAN, L. 1963. The nesting times of Finnish birds. — Proc. XIII Internat. Orn. Congr., Ithaca: 611—619.

— 1969. The nesting habits of Finnish birds. — Commentationes Biologicae 32:1—187.

— 1973. Fecundity, mortality, and avian demography. Discussion. — Breeding biology of birds (edited by D. S. FARNER): 435—437.

v. HAARTMAN, L., HILDÉN, O. LINKOLA, P., SUOMALAINEN, P. & TENOVUO, R. 1963—1972. Pohjolan linnut värikuvin. — Helsinki. Otava, 1092+192 pp.

HILDÉN, O. 1967. Lapin pesimälinnusto tutkimuskohteena. — Luonnon Tutkija 71: 152—162.

HYTÖNEN, O. & PUTKONEN, T. A. 1937. Västäräkin, Motacilla a. alba L., pesäpaikoista ja pesimisajasta. — Ornis Fenn. 14: 26—35.

LEINONEN, M. 1973. On the breeding biology of the White Wagtail Motacilla alba in Central Finland. Ornis Fenn. 50: 53—82.

MAYER-GROSS, H. 1970 a. The Nest Record Scheme. — The British Trust for Ornithology, field guide 12, 36 pp.

— 1970 b. The Nest Record Scheme, 1967. Bird Study 17:54—57.

MERIKALLIO, E. 1958. Finnish birds. — Fauna Fennica 5:1—181.

TINBERGEN, N., IMPEKOVEN, M. & FRANCK, D. 1967. An experiment on spacing-out as a defence against predators. — Behaviour 28:307—321.

TYRVÄINEN, H. 1969. The breeding biology of the Redwing (Turdus iliacus L.). Ann. Zool. Fenn. 6:1—46.

Reseived January 27, 1974.

APPENDIX. Numbers of nest-cards per species received by the Finnish Society of Sciences up to April 1, 1973.

Gavia arctica	132	*Haematopus ostralegus*	104
„ *stellata*	31	*Vanellus vanellus*	1284
Podiceps cristatus	539	*Charadrius hiaticula*	156
„ *griseigena*	29	„ *dubius*	178
„ *auritus*	105	„ *apricarius*	34
„ *nigricollis*	2	„ *morinellus*	19
Botaurus stellaris	6	*Arenaria interpres*	97
Anas platyrhynchos	769	*Capella gallinago*	139
„ *crecca*	128	*Lymnocryptes minimus*	3
„ *querquedula*	16	*Scolopax rusticola*	113
„ *strepera*	1	*Numenius arquata*	608
„ *penelope*	121	„ *phaeopus*	26
„ *acuta*	55	*Limosa limosa*	2
„ *clypeata*	171	„ *lapponica*	5
Aythya marila	29	*Tringa ochropus*	25
„ *fuligula*	609	„ *glareola*	39
„ *ferina*	117	„ *hypoleucos*	325
Bucephala clangula	596	„ *totanus*	265
Clangula hyemalis	2	„ *erythropus*	2
Melanitta fusca	89	„ *nebularia*	3
„ *nigra*	1	*Calidris temminckii*	83
Somateria mollissima	210	„ *alpina*	82
Mergus serrator	95	*Limicola falcinellus*	5
„ *merganser*	109	*Philomachus pugnax*	155
Anser anser	36	*Phalaropus lobatus*	52
„ *fabalis*	2	*Stercorarius parasiticus*	21
Branta canadensis	3	„ *longicaudus*	13
Cygnus olor	6	*Larus marinus*	55
„ *cygnus*	8	„ *argentatus*	171
Aquila chrysaetos	46	„ *fuscus*	462
Buteo buteo	208	„ *canus*	1266
„ *lagopus*	97	„ *ridibundus*	930
Accipiter nisus	103	„ *minutus*	83
„ *gentilis*	302	*Hydroprogne caspia*	61
Milvus migrans	10	*Sterna niger*	3
Haliaeetus albicilla	10	„ *hirundo*	1251
Pernis apivorus	102	„ *paradisea*	654
Circus aeruginosus	58	„ *albifrons*	23
„ *cyaneus*	20	*Alca torda*	6
Pandion haliaetus	244	*Cepphus grylle*	38
Falco subbuteo	41	*Columba oenas*	87
„ *peregrinus*	37	„ *palumbus*	560
„ *rusticolus*	3	„ *livia*	97
„ *columbarius*	59	*Streptopelia decaocto*	1
„ *tinnunculus*	348	*Cuculus canorus*	33
Lagopus lagopus	37	*Bubo bubo*	71
„ *mutus*	2	*Surnia ulula*	4
Lyrurus terix	156	*Glaucidium passerinum*	16
Tetrao urogallus	158	*Strix aluco*	415
Tetrastes bonasia	88	*Strix nebulosa*	4
Perdix perdix	17	„ *uralensis*	130
Phasianus colchicus	17	*Asio otus*	164
Grus grus	43	„ *flammeus*	75
Rallus aquaticus	1	*Aegolius funereus*	371
Porzana porzana	1	*Caprimulgus europaeus*	26
Gallinula chloropus	5	*Apus apus*	249
Fulica atra	183	*Picus canus*	38

Dendrocopos major	91
„ *leucotos*	6
„ *minor*	46
Picoides tridactylus	28
Dryocopus martius	57
Iynx torquilla	467
Lullula arborea	8
Alauda arvensis	320
Eremophila alpestris	3
Hirundo rustica	548
Delichon urbica	212
Riparia riparia	284
Oriolus oriolus	9
Corvus corax	82
„ *corone*	670
„ *frugilegus*	114
„ *monedula*	220
Pica pica	859
Nucifraga caryocatactes	1
Garrulus glandarius	199
Perisoreus infaustus	3
Parus major	3750
„ *caeruleus*	266
„ *ater*	206
„ *cinctus*	6
„ *enstatus*	274
„ *montanus*	559
Aegithalos caudatus	27
Certhia familiaris	164
Cinclus cinclus	10
Troglodytes troglodytes	41
Turdus viscivorus	107
„ *pilaris*	3198
„ *philomelos*	2055
„ *iliacus*	3951
„ *merula*	722
„ *torquatus*	3
Oenanthe oenanthe	425
Saxicola rubetra	663
Phoenicurus phoenicurus	677
Erithacus luscinia	52
„ *svecica*	60
„ *rubecula*	228
Locustella naevia	3
Acrocephalus scirpaceus	29
„ *palustris*	4
„ *dumetorum*	3
„ *schoenobaenus*	132
Hippolais icterina	76
Sylvia atricapilla	162
„ *nisoria*	14
„ *borin*	644
„ *communis*	308
„ *curruca*	370
Phylloscopus trochilus	1403
„ *trochiloides*	1
„ *collybita*	92
„ *sibilatrix*	125
„ *borealis*	4
Regulus regulus	21
Muscicapa striata	1930
Ficedula hypoleuca	4724
„ *parva*	5
Prunella modularis	265
Anthus pratensis	362
„ *trivialis*	364
„ *cervinus*	7
„ *spinoletta*	8
Motacilla alba	1681
„ *flava*	349
Bombycilla garrulus	3
Lanius excubitor	19
„ *collurio*	482
Sturnus vulgaris	2427
Coccothraustes coccothraustes	1
Carduelis chloris	170
„ *carduelis*	9
„ *spinus*	43
„ *cannabina*	228
„ *flammea*	166
Pyrrhula pyrrhula	103
Carpodacus erythrinus	466
Pinicola enucleator	8
Loxia curvirostra	37
„ *pytyopsittacus*	6
Fringilla coelebs	2203
„ *montifringilla*	250
Emberiza citrinella	378
„ *aureola*	18
„ *hortulana*	136
„ *rustica*	32
„ *pusilla*	1
„ *schoeniclus*	312
Calcarius lapponicus	18
Plectrophenax nivalis	16
Passer domesticus	180
„ *montanus*	2
Species unknown	12

Suomen Lintutieteellinen yhdistys — Ornitologiska Föreningen i Finland r.y.

Toimintakertomus 1. 1.—31. 12. 1973

Yhdistyksen kuukausikokouksia pidettiin kertomusvuoden aikana kahdeksan. Kokouksissa kuultiin seuraavat esitelmät: 25.1. LuK Seppo Karhu "Liejukanan poikas- ja aikuisvaiheiden kehityksestä pesintäkauden lopulla" sekä LuK Pentti Vikberg "Piirteitä törmäpääskyn pesimäbiologiasta", 15.2. maisterit P. Saurola ja I. Stén "Puolan lintuasemiin ja lintututkimukseen tutustumassa", 15.3. maisteri Urpo Häyrinen "Ympäristösuojelun neuvottelukunnan kansal-