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On the structure of the bird fauna on some coastal meadows in western Finland

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Natural meadows are few in number in Finland, especially in the inner parts of the country where they, moreover, are small and cultivated for the most part. The largest meadows are found along the coast of the Gulf of Bothnia, where they are created by the flat topography and land-upheaval. A bird fauna typical to the coastal meadows, but uncommon elsewhere in Finland, is to be found there. The only paper dealing with this topic in Finland has been published by FRITZÉN and TENOVUO (1957).

The scope of this paper is to give an account of some general features of the bird fauna on the meadows investigated with some discussions about the changes since 1920's.

1. Study area and methods

This paper is based on investigations made on the coast of Pori, western Finland (61°30'N, 21°40'E). Field work was performed mainly in 1960 in a meadow area of a total size of about two square kilometers. As it was impossible to study carefully enough so large an area, the main study area of a size of 33 hectares (400 by 800 meters) was limited on so called Eteläranta, in the village of Kokemäensaari, within the rural district of Pori. The meadows of the whole study area are shown in Fig. 1.

The vegetation on the meadows investigated is not luxuriant owing to sandy soil. Typical plants in the main study area are *Juncus Gerardi* on the shore-zone washed by water, *Festuca rubra*, *Agrostis stolonifera*, and *Calamagrostis arundinacea* on the drier parts of the meadow. Furthermore, it is characterized by several separate rocks, some of which being of a size of 3 to 4 cubic meters. For many bird species they serve as look-out posts. Most of the coastal meadows have been pastured before 1960, but grazing has nowhere been intensive with the exception of some small fenced areas.

The main study area was divided with sticks of wood into squares of one hectare in size in order to facilitate orientation. The area was investigated throughout the breeding season. The estimate of breeding density is based mainly on the nests found (see Table 1), but partly also on the behaviour of warning birds. In this paper each found nest marks one pair in spite of the possible polygamy of the species in question (e.g. *Philomachus pugnax*).

Because of the limited time the estimation outside the main study area had to be made in the course of 4 to 7 censuses and is based mainly on birds seen. Owing to that very reason the numbers are less exact, especially those concerning the order of *Anseriformes*.

Neither the species breeding in the littoral zone, e.g. in the *Scirpus-* or *Phragmites*-vegetation, nor those breeding in the bush-zone edging some meadows (e.g. *Saxicola rubetra*) are taken into account. It is clear that results got during one breeding season only can not give reliable information about the fluctuating numerical relations between different bird species. For that reason I will compare some results of the estimation in 1960 with observations made by Mr. A. Kaukola and myself in other years, especially in 1962 – 64 together with other studies in the main study area.

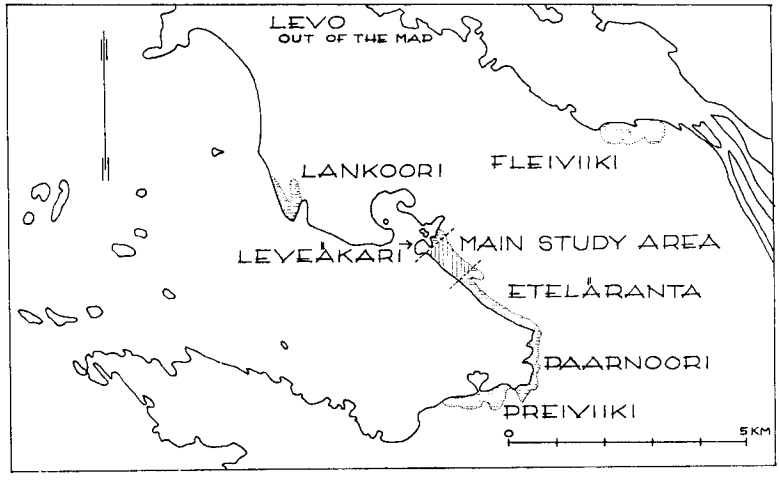

Fig. 1. The meadows investigated on the Pori coast in 1960.

2. Results of the census in 1960

The breeding bird fauna of the main study area in 1960 is shown in Table 1 and that of the other parts of the study area in Table 2.

A cape-like meadow area, so called Leveäkari, which is situated north-west to the main study area (see Fig. 1), was left outside this investigation, because the habitat of this area, being very stony and bush- and treegrown by little junipers and young pines, differs from that of the other meadows. According to Mr. A. Kaukola, the following species have bred at Leveäkari, in an area of a size of 6 to 7 hectares in 1957–64 (the mean number of pairs is shown in parenthesis): *Anas platyrhynchos* 0 to 1 (0) pair, *A. crecca* 0 to 1 (0), *A. querquedula* 0 to 2 (0), *A. acuta* 1 to 6 (2), *A. clypeata* 0 to 8 (4), *Aythya marila* 1 to 4 (2) in the *Scirpus*-zone, *A. fuligula* 0–2 in the *Scirpus*-zone, *Haematopus ostralegus* 0 to 1 (1), *Vanellus vanellus* 4 to 7, *Charadrius hiaticula* 5 to 7, *Arenaria interpres* 0 to 1 (0), *Tringa totanus* 6 to 9, *Calidris alpina* 1 to 5 (3), *Philomachus pugnax* 2 to 5 (3), *Alauda arvensis* 4 to 8 (a rough estimate), *Anthus pratensis* 1 to 3, *Motacilla flava* 2 to 4, *M. alba* 1 to 3, and *Oenanthe oenanthe* 0 to 1.

Table 1. The breeding bird fauna in the main study area (33 hectares) on the coast of Pori in 1960.

	pairs	nests found	density, pairs/km²
Vanellus vanellus	20–21	19	60–63
Alauda arvensis	20–30	7	60–90
Philomachus pugnax	16–18	12	48–56
Tringa totanus	9–12	7	27–36
Calidris alpina	8– 9	6	24–27
Charadrius hiaticula	5– 7	5	15–21
Anas clypeata	2	2	6
Anthus pratensis	2	–	6
Anas acuta	1	1	3
Motacilla flava	1	–	3
Total	84–103	59	252–309

Note. In addition, at least the following species have been nesting in this area in some earlier years since 1950: *Anas platyrhynchos* in 1956, *A. querquedula* frequently, *Larus canus* frequently, *Numenius arquata* frequently, *Charadrius dubius* in 1958, and *Haematopus ostralegus* in 1952.

Table 2. The breeding bird fauna on the meadows (totaling 166 hectares) outside the main study area on the coast of Pori in 1960.

	pairs	density. pairs/km²
Vanellus venellus	89–118	54–71
Tringa totanus	51–86	31–52
Philomachus pugnax	45–76	27–46
Alauda arvensis	43–65	26–39
Calidris alpina	20–26	12–16
Motacilla flava	15–20	9–12
Numenius arquata	13–15	8–9
Anas clypeata	9–15	5–9
A. querquedula	4–7	2–4
Capella gallinago	4–5	2–3
Charadrius hiaticula	3	2
Anas acuta	1	1
Charadrius dubius	1	1
Tringa glareola	1	1
Total	299–439	180–264

Note. In addition, at least the following species have been nesting on these meadows in some other years since 1950: *Anas platyrhynchos* at Fleiviiki in 1964, and *Phalaropus lobatus* at Levo in 1956–57 (see KAUKOLA et al. 1960).

As we see in Table 1 and 2, there are five bird species markedly dominating in the investigated meadow fauna, viz. *Vanellus vanellus, Tringa totanus, Calidris alpina, Philomachus pugnax,* and *Alauda arvensis.* It is surprising that *Calidris alpina* and *Philomachus pugnax* are in the group of the most numerous species. The first nest of *Calidris a. schinzii,* to which race the birds here belong, was found in Finland during this century not before 1945, and, in addition, the number of pairs in the tables above may be much too small as compared to later investigations. The main distribution area of *Philomachus pugnax* is located in the very north in Finland; in the southern part of the country it breeds only scarcely. For further details see the list of the breeding species below.

3. The species breeding in the study area

Anas platyrhynchos. The Mallard breeds very seldom on the open sea-shore meadow without any shelter. Only two nests have been found: in the main study area in 1956 and at Fleiviiki in 1964. However, exposed nests are commonly found inland on the

vast shore meadows of grassy lakes and in the outhermost archipelago, e.g. at Valassaaret, the Gulf of Bothnia, where, according to HILDÉN (1964), 18 per cent of the nests found were exposed.

Anas querquedula. The number of Garganeys varies annually very much. In 1960 no pair bred in the main study area, but two nests were found in 1962. The number of pairs is annually not more than ten.

Anas acuta. Neither HORTLING (1927; 1928) nor SUOMALAINEN (1927) mentions the Pintail among the breeding species on the sea-shore of Pori. After having reached a low level the Pintail population has been increasing in number on the coasts of the Baltic during the last decades (see e.g. MERIKALLIO 1958; KUMARI 1962). In the study area the Pintail is after the Shoveler the second duck in number, its breeding population being annually 5 to 15 pairs.

Anas clypeata. The Shoveler is the most numerous duck in the study area; in total 25 to 50 pairs are breeding annually.

Vanellus vanellus. In 1960 the Lapwing population was greater than on an average. Especially in the main study area its density was very high due to the fact that the meadow had been pastured the previous years. About the significance of grazing, see e.g. KLOMP (1953) and KALELA (1954). In 1960 the density was 50 to 70 pairs/km^2 on an average, but in the two fenced areas which were powerfully pastured I have found still higher densities: 12 nests per 3 hectares in 1959 and 9 nests per 3.3 hectares in 1960, that is 400 and 270 pairs/km^2, respectively.

Charadrius hiaticula. The Ringed Plover breeds only in the main study area and at Paarnoori, where in both places there are found little areas without vegetation. The whole population including Leveäkari numbers annually 12 to 16 pairs.

Charadrius dubius. The little Ringed Plover was found nesting only once on the meadows, namely in the main study area in 1958. The Sands of Yyteri, so called Teeriniemi, where the Ringed Plover does not breed, is inhabited annually by 2 to 4 pairs.

Capella gallinago. The number of the Snipe in the census of 1960 may be much too small. Perhaps 15 to 20 pairs breed on the meadows outside the main study area, especially where there is moist meadow with high grass, as at Eteläranta and Fleiviiki.

Numenius arquata. The Curlew is not so numerous as expected. As an example, on the delta of the Kokemäki River it is more abundant. In the main study area the Curlew has bred several times, but did not in 1960.

Tringa glareola. The Wood Sandpiper is a very rare, but apparently a regular breeder in the study area. It has bred in the main study area or in its neighborhood at least in 1958, 1962, 1963 and 1964, at Fleiviiki in 1960 and at Lankoori in 1964. The population within the whole district of Pori may be more than ten pairs annually.

Tringa totanus. The Redshank is a regular and fairly common breeder on all the investigated meadows with the exception of Lankoori where it is breeding only scarcely. In 1960 the population was perhaps smaller than on an average. For example, in 1964 there were 12 to 15 pairs breeding in the main study area as compared with 9 to 12 pairs in 1960.

Calidris alpina. The breeding population belongs to the race *schinzii.* As a later special study in 1962–64 revealed, the amount of the work in 1960 was not sufficient to show the real number of the population. In 1962–64 the population in the main study area alone has been 15 to 20 pairs and in the whole area 60 to 70 pairs. (See SOIKKELI 1964).

Philomachus pugnax. The Ruff is with the Lapwing and Dunlin one of the most abundant waders in the study area. According to Mr. A. Kaukola this species has been increasing in number in 1950's. The number of the breeding Reeves in 1960 was about up to the average, but e.g. in 1964 there were over 20 Reeves breeding in the main study area. Another meadow, where Reeves breed abundantly is Fleiviiki. The whole population on the Pori coast, including the delta of the Kokemäki River, can be estimated to be more than 100 nesting Reeves nowadays.

Phalaropus lobatus. The Red-necked Phalarope bred at Levo in 1956 and 1957. These foundings are the southernmost in Finland. (See KAUKOLA et al. 1960).

Larus canus. The Common Gull has bred on the rocks of the main study area and in its neighborhood for several years. Some birds use to eat eggs and young of Dunlins, Redshanks and Ringed Plovers, perhaps of other waders too.

Alauda arvensis. The only natural habitats in Finland for the Sky Lark are the coastal meadows and, to a less degree, the raised bogs. The number of the breeding pairs is very difficult to estimate, but as to the number of singing males, it is the most numerous bird at Lankoori, which is very largely covered by a thin, expansing *Phragmites*-growth.

Anthus pratensis. In 1960 the population of the Meadow Pipit was very scarce. On an average the breeding population includes some tens of pairs. As an example, in 1964 there were five nests found in the main study area.

Motacilla flava. In 1960 the amount of the breeding Yellow Wagtails was smaller than in other years. The number of breeding pairs averages 4 to 6 in the main study area and several tens in the whole study area.

4. Discussion

Specific composition. Coastal meadows form narrow transition zones between two major ecological community: dry land and water. This ecotonal zone is inhabited by bird species belonging originally to both of these communities, viz. species of the orders of *Passeriformes* and *Anseriformes*, but also by a group of species adapted to circumstances predominating just in this transition zone, namely members of the order of *Charadriiformes*. Numerical relations of the species and pairs between these three orders in the study area, compared with those of Liminka on the coast of the Bothnian Bay, the Gulf of Bothnia (see FRITZÉN and TENOVUO 1957), are as follows:

Within the limits of methods used, the good correspondence between the numbers of these two areas is surprising, especially when we know that these investigated areas are located at a distance of 400 kilometres in north-south direction from each other.

When comparing closer the species composition of the study area

Table 3. Specific composition of the bird fauna in two different meadow areas on the coast of the Gulf of Bothnia: Pori area totaling 2 km², studied in 1960; Liminka area of 3.1 km², studied in 1953. The number of the breeding species and pairs of each order are shown in parentheses.

	Species		Pairs	
	Pori	Liminka	Pori	Liminka
Anseriformes	20 % (3)	21.5 % (3)	5 % (22)	15 % (18)
Gruiformes	–	7 % (1)	–	2 % (2)
Charadriiformes	60 % (9)	50 % (7)	74 % (342)	73 % (87)
Passeriformes	20 % (3)	21.5 % (3)	22 % (100)	11 % (16)

Note. The data of the study area have been obtained from the mean of estimated numbers (Table 1 and 2). Those of Liminka concerning only the so called *Carex-* and *Juncus-Calamagrostis*-zone have been calculated by the author. *Saxicola rubetra* and *Motacilla alba* are not taken into consideration either at Liminka or on the coast of Pori. According to FRITZÉN and TENOVUO (1957) the following species bred at Liminka in an area of 308 hectares in 1953: *Numenius arquata* 30 pairs, *Philomachus pugnax* 18, *Vanellus vanellus*, 16, *Anas acuta* 16, *Phalaropus lobatus* 13, *Capella gallinago* 8, *Anthus pratensis* 7, *Alauda arvensis* 4, *Motacilla flava* 2, *Porzana porzana* 2, and *Anas platyrhynchos*, *Anas clypeata*, *Tringa glareola* and *Lymnocryptes minimus* 1 pair.

with that of Liminka (see the footnote of Table 3), we see that there are only two species, viz. *Vanellus vanellus* and *Philomachus pugnax*, included in the group of the five most numerous species both on the coast of Pori and at Liminka. Two other species, *Tringa totanus* and *Calidris alpina*, which also belong to the most abundant in the study area, do not breed at all at Liminka. *Alauda arvensis* is breeding very commonly on the coast of Pori, but occurs only rarely at Liminka. *Anas acuta* and *Phalaropus lobatus* are breeding very abundantly at Liminka, but in the study area the former is quite scarce and the latter has been breeding only twice. Both of these species, as well as *Philomachus pugnax*, belong to the northern fauna element in Finland and differences in their abundances are caused largely by the more northern position of Liminka. It is surprising that *Numenius arquata*, although belonging to the southern fauna element in Finland, is the most abundant species at Liminka, but on the coast of Pori it is only fairly common. However, its density is similar in both of these areas, viz. about 10 pairs/km².

Density. In 1960 the density of the breeding bird fauna in the main study area was 252 to 309, and on the other meadows 180 to 264 pairs/

km². (See Table 1 and 2). The difference in density is due to the fact that the former area is one of the largest meadows on the coast of Pori and meets better the habitat requirements of meadow birds than some lesser meadows do elsewhere on the coast. In addition, the main study area has been investigated most carefully. The density values obtained resemble that of the bird fauna in the Finnish forests of the so called *Oxalis-Myrtillus*-type (MERIKALLIO 1946). In forest habitats the density of the bird fauna depends on the quantity and quality of the vertical stratification of the vegetation (see e.g. MILDENBERGER 1950). In meadow habitats the nests are located all at the same level, but in spite of this the density is fairly high. The high density value is due to to the extensiveness of the *Lebensraum* of its inhabitants. This means that most of the species feed outside the meadow habitat, mainly along the shore line or in the littoral zone, and the meadow proper serves only as a nest site. This is the case as far as the species of the orders of *Anseriformes* and *Charadriiformes* are concerned. Also some species of the order of *Passeriformes* do not find enough food on the meadow. I have seen e.g. *Alauda arvensis* and *Anthus pratensis* gathering food for their young in a young stand of pines edging the meadow.

Now, because so large a proportion of species are feeding outside the meadow, it is clear that the density value of the breeding population is determined by the amount and quality of surrounding waters and the length of the shore line. For instance, *Tringa totanus* occupies soon after its arrival in the spring a feeding territory on an edge of some pond or bight near to which the nest will be built later (GROSSKOPF 1959). For *Calidris alpina* also the shore line serves as a central scene of the territorial behaviour, according to my own observations. After the young have been hatched most shore-bird species lead them to the dampest places on the meadow.

High bird densities are found especially where the shore-line is long as compared to the total meadow area or where the meadow habitat is variable otherwise. As an example, the high density in the main study area is caused surely by a wet dell containing two shallow ponds situating in the centre of the meadow so that nesting sites between these ponds and sea-shore are surrounded by water from two directions. At Levo (see Table 2) the density was one of the highest in the study year mainly because the meadow in question was surrounded by water from many sides. The relatively low density at Liminka, 70 pairs/km² (FRITZÉN and TENOVUO 1957), is probably due to the short shore-line per meadow area and to the height of the vegetation.

Changes in the fauna from 1920's through 1960's. In 1928 HORTLING (1928) studied the shore bird fauna in the same area where I worked. He did not mention the location of the meadows he investigated, but apparently my main study area was included in his area, as he lived near to that meadow. According to HORTLING, the following species bred in three different shore areas in 1928 (birds breeding obviously not in the meadow habitat are shown in parentheses): *Numenius arquata* 7 pairs, (*Sterna hirundo* 7 pairs), *Vanellus vanellus* 5 pairs, *Tringa totanus* 5 pairs, *Alauda arvensis* 5 pairs, (*Haematopus ostralegus* 3 pairs, *Anas platyrhynchos* 1 pair), *Anas clypeata* 1 pair, (*Aythya fuligula* 1 pair), and *Philomachus pugnax* 1 pair. SUOMALAINEN (1927), who hardly did know of the shore bird fauna as well as HORTLING, mentions six species breeding on the coastal meadows outside Pori (scale of abundance: 1 = »very scarce», . . . 5 = »very abundant»): *Alauda arvensis* 3, *Vanellus* 2, *Numenius arquata* 2, *Capella gallinago* 1, *Tringa glareola* 1, and *Motacilla flava* 1. In my opinion this list is not quite reliable.

The meadow area and the vegetation have surely undergone changes since 1920's due to continuous ecological succession caused by the land-upheaval. The most conspicuous feature in the bird fauna of 1920's is the absence of *Calidris alpina* and the small number of *Philomachus pugnax*, both of which are the most numerous species at present. These species and *Vanellus vanellus* are clearly increased in number in the last decades (see KALELA 1954; SOIKKELI 1964). The absence of *Anas acuta* in the check lists of 1920's may be caused by imperfect investigations; on the other hand, *Anas acuta* has been on the increase on the Baltic shores for the last decades. The absence of *Anthus pratensis* in 1920's cannot easily be explained. Outside this topic I would like to remark that HORTLING (op.c.) saw no single *Aythya marila* in his study area, but nowdays 5 to 10 pairs breed annually on the same bay.

General changes also concern the increase in number of the four following species: *Anas acuta*, *Vanellus vanellus*, *Calidris alpina*, and *Philomachus pugnax*. Any comparable decrease in number of other species cannot be shown.

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References: FRITZÉN, N. & TENOVUO, R., 1957, Kvantitativa fågelstudier vid Limingoviken. Orn. Fenn. 34: 17–33. – GROSSKOPF, G., 1959, Zur Biologie des Rotschenkels (Tringa t. totanus). II. Journ. f. Ornithol. 100: 210–236. – HILDÉN, O.,

1964, Ecology of duck populations in the island group of Valassaaret, Gulf of Bothnia. Ann. Zool. Fenn. 1: 153–279. — HORTLING, I., 1927, Das Vogelleben bei Ytterö im Sommer und Herbst 1926. Orn. Fenn., Sonderheft, 1–237. — HORTLING, I., 1928, Ett bidrag till kråkans meritlista. Finlands Jakt- och fisketidskr. 23: 266–269. — KALELA, O., 1954, Die neuzeitliche Ausbreitung des Kiebitzes, Vanellus vanellus (L.), in Finnland. Ann. Zool. Soc. 'Vanamo' 16: 11, 1–80. — KAUKOLA, A., LILJA, I., SOIKKELI, M. & TUOMINEN, A., 1960, Tietoja Porin seudulla 1949–59 tavatuista harvinaisista lintulajeista. Orn. Fenn. 37: 90–92. — KLOMP, H., 1953, De terreinkeus van de Kievit, Vanellus vanellus (L.). Ardea 41: 1–139. — KUMARI, E., 1962, The wildfowl in the Matsalu National Park. Wildfowl Trust 13th Annual Rep., 109–116. — MERIKALLIO, E., 1946, Über regionale Verbreitung und Anzahl der Landvögel in Süd- und Mittelfinnland, besonders in deren östlichen Teilen, im Lichte von quantitativen Untersuchungen. I. Ann. Zool. Soc 'Vanamo' 12:1, 1–140. — MERIKALLIO, E., 1958, Finnish birds, their distribution and numbers. Fauna Fenn. 5:1–181. — MILDENBERGER, H., 1950, Untersuchungen über die Siedlungsdichte der Vögel in der ackerbaulich genutzten Kulturlandschaft. Bonner Zool. Beitr. 1:221–238. — SOIKKELI, M., 1964, The distribution of the Southern Dunlin (Calidris alpina schinzii) in Finland. Orn. Fenn. 41: 13–21. — SUOMALAINEN, E. W., 1927, Kokemäenjoen laakson ja läheisen merenrannikon linnusto. Satakunnan Kirjallisen Kerhon Julk. 2, 1–396.

Selostus: **Linnuston rakenteesta eräillä Länsi-Suomen rannikkoniityillä.**

Kirjoitus käsittelee merenrantaniittyjen linnuston rakennetta Porin rannikolla pääasiassa vuonna 1960 suoritetun laskennan valossa. Tutkimusalueen kokonaispinta-ala oli noin 200 ha, josta tarkimmin tutkittiin 33 hehtaarin suuruinen ns. päätutkimusalue. Eri niittyjen sijainti rannikolla on esitettynä kuvassa 1.

Taulukosta 1 nähdään päätutkimusalueen pesimälinnusto v. 1960 (sarakkeet: pareja, löydettyjä pesiä ja tiheys). Taulukon alaviitteessä mainitaan lajit, jotka ovat pesineet kyseisellä alueella joinakin muina vuosina. Taulukossa 2 ovat samalla tavoin esitettyinä tulokset muilta niityiltä päätutkimusalueen ulkopuolella. Laskentametodista johtuen varsinkin sorsalintujen määrät ovat todellista pienemmät. Sama koskee myös mm. suosirriä, jonka lukumäärä on vain työläästi arvioitavissa.

Taulukossa 3 on verrattu tutkimusalueen ja Limingan niityllä v. 1953 tutkitun 3 km²:n koealan pesimälinnustoja lintulahkoittain; vasemmalla laji- ja oikealla parimäärät. Lajikohtaisessa vertailussa havaitaan, että ainoastaan töyhtöhyyppä ja suokukko ovat molemmilla alueilla viiden yleisimmän lajin joukossa. Punajalkaviklo ja suosirri, jotka niinikään kuuluvat Porin rannikolla tähän ryhmään, puuttuvat täysin Limingan koealalta ja myöskin kiuru on harvalukuinen. Limingan dominoivista lajeista jouhisorsaa pesii Porin rannikolla vain niukasti ja vesipääsky on todettu pesivänä kahdesti.

Pesimälinnuston tiheys on tutkimusalueella jokseenkin samansuuruinen kuin *Oxalis-Myrtillus*-tyypin metsissämme eli 200–300 paria neliökilometrillä. Tiheysarvojen korkeus selittyy siten, että varsinkin sorsalinnuilla ja kahlaajilla niitty toimii vain pesäpaikkana. Ravintonsa näiden ryhmien lajit etsivät joko vesirajasta tai niittyä ympäröivistä vesistä eivätkä siksi kuulu konsumentteina niittybiotooppiin. Mainitusta seikasta johtuu, että pesimätiheys on yleensä sitä suurempi, mitä pitempi niityn rantaviiva on pinta-alaan nähden.

Lopuksi vertaillaan tutkimusalueen linnustoa 1920-luvulla tehtyihin havaintolhin. Tällöin todetaan, että nykyisin runsaslukuisista lajeista suosirriä ei ole nähty mainitulla kymmenluvulla pesivänä ja että suokukko- ja töyhtöhyyppäkannat ovat kasvaneet. Sama pätee todennäköisesti myös jouhisorsan kohdalla, jota myöskään ei mainita 1920-luvun lähteissä.

Finnische Wiederfunde im Ausland beringter Vögel

IV

G. Nordström und G. Lindström

Zoologisches Museum der Universität, Helsinki/Helsingfors

Vorstehendes Verzeichnis enthält die seit dem Erscheinen der vorhergehenden Übersicht (Ornis Fenn. 41, 1964, S. 93—106) der Beringungszentrale des Zoologischen Museums der Universität Helsinki oder der Staatlichen Anstalt für Wildforschung eingemeldeten 170 Funde, unter Ausschluss der Entenvögel, die später in einer besonderen Arbeit besprochen werden.

Sowohl die Beringungs- als Funddaten werden hier wie früher in konzentrierter Form wiedergegeben. Genauere Angaben über die angeführten Wiederfunde sind bei Bedarf von der Beringungszentrale zu erhalten.

Wie in vielen Jahren zuvor sind recht zahlreiche (im ganzen 34) Funde von Buchfinken (*Fringilla coelebs*) einrapportiert worden. Die meisten dieser Vögel sind beim Herbstzug auf der russischen Vogelwarte Rybatschij (vorm. Rossitten) beringt worden. Von bemerkenswerteren Funden kann eine im Oktober in Polen beringte und reichlich ein Jahr später in Ostfinnland kontrollierte Kohlmeise (*Parus major*) genannt werden. Ein in Norddeutschland beringtes Rotkehlchen (*Erithacus rubecula*) wurde 13 Tage später auf einer südwestfinnischen Vogelwarte eingefangen. Eine als Junges im Schwedischen Lappland beringte Wasseramsel (*Cinclus cinclus*) verfing sich in einem Fangnetz in Mittelfinnland. Ein während des Winters in Ungarn angetroffener Seidenschwanz (*Bombycilla garrulus*) wurde anderthalb Jahre später in Nordfinnland tot aufgefunden.

Accipiter nisus.

Moskwa M 106698. *UdSSR*, Kaliningrad, Rybatschij, 24. IV. 1962. — *Ylikiiminki*, Suthovi, 3. V. 1964, tot gefunden (Juhani Joki).

Moskwa M 116905. *UdSSR*, Kaliningrad, Rybatschij, 6. X. 1963. — *Muhos*, Kylmälä, 19. IV. 1965, tot gefunden (Lauri Tillman).

Helgoland 5105060. *Deutschland*, Schleswig-Holstein, St. Peter-Kiefern, 22. X. 1961. — *Sund*, 0. V. 1962, erlegt (Risto Rikala).