

Aspects of the nesting habits of the Feral Pigeon *Columba livia domestica*

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The article presents data on the nesting of the Feral Pigeon in the loft of Lohja Church (60°14'N, 24°03'E) in the years 1968 and 1972—73. In 1973 there was a population of 26 pairs there, 53 % of them breeding in a bird room, 6.2 × 5.8 m. The room was originally built for Jackdaws, but was occupied by Feral Pigeons. About 72 % of the nests in the room lay on the floor in spite of there being shelves available for nesting. In the bird room the nests were mere depressions in the layer of faeces. In two cases Feral Pigeons were breeding in nests used by Jackdaws earlier the same season. About 78 % of the nests contained two eggs; only two clutches of three eggs were found.

The mean size of the eggs was 39.03 × 28.46 mm, maximum 45.1 × 30.1 mm and minimum 36.2 × 26.4 mm (N = 44). The mean volume of the first clutch was smaller than that of the second clutch but the difference was not statistically significant. Clutches at different stages of the breeding cycle were found simultaneously.

Introduction

The medieval church of Lohja (60°14'N, 24°03'E) is known among ornithologists primarily as a breeding site of Jackdaws. During the restoration of the church in 1967, the holes where the Jackdaws had nested earlier, were boarded up, but a room 6.2 × 5.8 m was built for them in the western gable of the loft. The room was furnished with three shelves, 2.5 — 4 m in length, to serve as a nesting place (cf. ZIMMERMANN 1951, p. 74). The room has a gable window of more than a metre in height, which makes it comparatively light.

Jackdaws, however, never nested in the room. Instead, it was occupied by Feral Pigeons. Before the restoration there were only a few pairs of Pigeons in the church, but after the bird room was built, the number of pairs rose to 26 in the year 1973. As there are few

data on the nesting of the Feral Pigeon in Finland according to v. HAARTMAN et al. (1967, p. 532—533), it may be worth publishing this material.

Material and methods

The following data for the number of nesting pairs, nest sites and clutch size are from the years 1968 and 1972—73. The eggs were measured and the incubation stage was checked only in 1973. The first and second clutch were distinguished from each other by marking the nest sites and eggs. Egg weight was measured using a spring scale. The incubation stage was checked by immersion in water according to the method described by VÄISÄNEN (1969, p. 7) and VÄISÄNEN et al. (1972, p. 27).

Nest sites

According to v. HAARTMAN et al. (1967, p. 531) the Feral Pigeon nests in lofts, cornices and various niches of buildings (see HÄKKINEN et al. 1973, p. 85). The sites of the nests found in the

TABLE 1. Nest sites in the church of Lohja in 1968, 1972—73.

	Nests	%
Bird room	39	53.4
Under eaves in the loft	19	26.0
Pigeonholes in the gable	8	11.0
Ornamental niches in the wall	7	9.6
Total	73	100.0

church of Lohja fall into four different categories (Table 1). Especially the bird room seems to offer excellent breeding facilities for the Feral Pigeon. This accounts for the large size of the population (cf. HÄKKINEN et al. 1973). Usually, only a few pairs of Feral Pigeons seem to breed in each church (own observations; cf. also TENOVUO 1963, ALAPULLI 1964). Most nests (71.8 %) in the room lay on the floor, though there were shelves available. This was apparently because the Pigeons preferred the shady space below the pigeon hole to the shelves at the same level, which were reached by daylight. HÄKKINEN et al. (1973, p. 85) observed that in winter breeding occurred in dark lofts. The nests in the bird room contained hardly any nest material, but were mere depressions made in the faeces on the floor. A few twigs and some straw were found in the nests outside the bird room. SOIKKELI (1971, p. 135) mentions that nests in winter contained very little material (cf. v. HAARTMAN et al. 1967). Between the gable wall and the roof are holes which were used by both Feral Pigeons and Jackdaws. In two cases Feral Pigeons had made their nests (second ones?) in the cups used by Jackdaws earlier the same season.

Clutches and broods

Table 2 shows the size of clutches and broods on the days of observation. No account was taken of empty nests. No nest with both eggs and young was

found; nor nests with an egg and a chick. The young of the Feral Pigeon are known to hatch fairly synchronously (VAN TYNE & BERGER 1959). As the nests were not checked every day, the mean size of clutches cannot be given with certainty. In clutches with one egg the other may have disappeared or the clutch been incomplete. In all clutches of three one egg was infertile. Clutches of two (78.9 %) and broods of two (75.0 %) formed a distinct majority. The number of eggs among Pigeons is generally regarded as being constant at two (VAN TYNE & BERGER 1959).

Egg dimensions

The eggs were measured in clutches which could easily be reached. Only fresh eggs were weighed. The measurements are given in Table 3. KIVIRIKKO (1948) gives as egg dimensions 35—41 × 27—30 mm. In the church population at Lohja this maximum length was exceeded by 4.1 mm and the minimum breadth was 0.6 mm smaller than that given by KIVIRIKKO. This indicates considerable variation within the colony. The mean volume of eggs was calculated according to the formula given by SZIELASKO and GROSSFELD (ROMANOFF & ROMANOFF 1959):

$$V = 0.519 L \times B^2$$

where L stands for the length and B for the breadth of the egg. The result is approximate because no species-specific

TABLE 2. Number of nests with eggs and young in 1968 and 1972—73.

Date	Eggs			Young	
	1	2	3	1	2
May 2, 1968	1	3	—	—	1
June 6, 1972	3	11	—	1	3
May 10, 1973	3	9	—	1	5
June 11, 1973	1	14	2	3	6
Total	8	37	2	5	15

TABLE 3. Egg dimensions.

	Length (mm)	Breadth (mm)	Weight (g)	Volume (cm ³)
\bar{X}	39.0	28.5	17.3	16.50
Range	36.2—45.1	26.4—30.1	16.5—19.0	12.55—19.59
N	44	44	9	44

coefficient is available (see VÄISÄNEN et al. 1972, p. 27). Nevertheless, the result offers a reliable basis for comparing egg volumes in first and second broods (Table 4). There is generally no seasonal fluctuation in the clutch size of Pigeons (LACK 1966), but variation in egg dimensions may exist, as in the clutches of Temminck's Stint (*Calidris temminckii*), during the season (VÄISÄNEN et al. 1972). Table 4 indicates that egg length and breadth as well as mean volume of the second clutch of the Feral Pigeon are larger than average. The result is, however, not statistically significant ($t = 1.385$; $f = 40$, $P < 0.20$). Whether this is due to the small size of the sample is impossible to judge.

Incubation stage

Eggs of first and second clutches were immersed in water on May 10, 1973 and June 11, 1973 respectively (cf. Table 5). This investigation indicated that both categories of clutches were more than halfway through incubation. In addition, there were already some young, whose mean weight, on May 10, was 62.5 g (total range 27.0—150.0 g, $N = 13$) and, on June 11, 58.9 g (total range 19.2—270.0 g, $N = 11$). Thus, the clutches were obviously laid at widely varying dates. According to KIVIRIKKO (1948) the full weight of an adult Feral Pigeon is 370 g.

Selostus: Piirteitä kesykyyhkyn pesimätavoista Lohjan kirkkopopulaatioissa.

Lohjan kirkon ullakolle rakennettiin vuonna 1967 kirkon restauroinnin yhteydessä lähinnä naakkoja varten lintuhuone, jonka pohjapinta-ala on n. 6.2×5.8 m. Naakat eivät ole tässä huoneessa pesineet, vaan kesykyyhkyt valtasivat sen. Kirjoituksessa esitetty aineisto onkin pääosaltaan saatu ko. lintuhuoneesta vuosilta 1968 ja 1972—73.

Noin 53 % pesistä tavattiin lintuhuoneesta (taulukko 1), mihin näyttää kohdistuvan voimakas kilpailu pesäpaikoista. Yli 70 % lintuhuoneen pesistä löytyi lattialta, vaikka pesimähyllyjä on rakennettu ainakin 12 juoksumetriä. Muina pesäpaikkoina olivat mm. päätykiveyksen ja katon väliin jäävät lokerot ja ullakon räystästätila kulkuaukkojen läheisyydessä. Kahdessa tapauksessa kesykyyhky oli pesinyt naakan aikaisemmin samana keväänä käyttämään pesäcuppiin. Lintuhuoneessa pesät sijaitsevat lattialle kertyneen lannan päällä ilman sanottavampaa pesämateriaalia. Noin 78 % pesistä käsitti havaintopäivinä 2 munaa (taulukko 2).

Munamittauksissa todettiin 45,1 mm:n munanpituus, joka on 4,1 mm suurempi kuin KIVIRIKON (1948) ilmoittama maksimi. Munien keskikooksi saatiin $39,03 \times 28,46$ mm ($n = 44$, taulukko 3). Ensimmäisen pesyeen munien keskitilavuus oli v. 1973 keskimäärin $0,632$ cm³ pienempi kuin toisen pesyeen (taulukko 4). Ero ei ole kuitenkaan tilastollisesti merkitsevä. Munien haudonta-aste vaihteli suuresti (taulukko 5) ja sekä muna- että poikasvaiheessa olevia pesiä todettiin samanaikaisesti.

TABLE 4. The mean dimension of first and second clutches in the spring of 1973.

	Length \bar{X} (mm)	Breadth \bar{X} (mm)	Volume $\bar{X} \pm S_x$ (cm ³)	N
First clutch	38.8	28.3	16.20 ± 1.517	25
Second clutch	39.3	28.6	16.83 ± 1.514	19

TABLE 5. The stage of incubation of the Feral Pigeon eggs determined by immersion in water in 1973 (see VÄISÄNEN 1969, p. 7).

	Eggs at the bottom					Eggs just below the surface	Eggs partly above the water mm			
	15°	30°	45°	60°	75°		over 10	15	20	25
May 10	1		2			1	4	3	3	3
June 11	1	1	1	1	1	1	4	3	5	2

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