

## Observations on the development of mobility in young Common Gulls, *Larus canus* L., and Lesser Blackbacked Gulls, *L. fuscus* L.

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In a recent paper PETERS and MÜLLER (1951) have emphasized the fact that gulls represent an intermediate type between nidifugous („Nestflüchter“) and nidicolous („Nesthocker“) birds. These authors describe the juvenile development of the herring gull, *Larus argentatus* L., as a typical example of birds of this group, which they call „Platzhocker“. This type of juvenile development is, according to PETERS and MÜLLER, characterized by the following features:

„Der 'Platzhocker' . . . nimmt typologisch eine Stellung zwischen Nesthocker und Nestflüchter ein. Er ist zwar nicht an das Nest, wohl aber an ein begrenztes Revier gebunden. Die Entwicklung der Flügel erscheint retardiert; erst nachdem er das definitive Körpergewicht erreicht hat, wird der Platzhocker flugbar. Darin ähnelt er dem Nesthocker. An den Nestflüchter erinnert u. a. das von Anfang an hohe Leistungsniveau der Sinnesorgane und die Bewegungsfähigkeit“ (p. 69).

PETERS and MÜLLER present comprehensive data on the morphological development, and to a lesser extent on the development of behaviour, typical of the „Platzhockers“. As the behaviouristic traits in particular, are quite characteristic of these typological groups and without doubt of fundamental importance, the following account of the development of mobility in some typical „Platzhockers“ may be of some interest. The author is indebted to Mr. Eero Routamo for valuable help in the field work.

The field work of the study was done in the Aspskär Bird Preserve situated in the outer archipelago of Loviisa ca. 20 km. off the south coast of Finland, in the summer of 1949. A colony of 32 nests of the common gull and 16 nests of the lesser black-backed gull was mapped. From May 16 onwards the colony was worked over and the nests found inspected at intervals of 2 to 5 days, between May 16 and July 10, in total 17 times. In this way the time of hatching of each chick could usually be determined with an accuracy of 1 to 2 days. After the young had reached the age suitable for banding (4 to 5 days) they were marked. Every

time a chick was found, its age and the distance from the nest were recorded.

The total number of eggs in the nests of *Larus canus* was 91, the average clutch being 2.84 (with a standard error of  $\pm 0.08$ ). For *L. fuscus* the total number of eggs was 49 and the average clutch  $3.06 \pm 0.06$ . Of these 86 (95 per cent) and 46 (94 per cent) were hatched, respectively. Before the banding age 14 young common gulls and 6 lesser blackbacked gulls died. Of those which reached the banding age 46, or 64 per cent (*L. canus*) and 15, or 38 per cent (*L. fuscus*) were banded. No banded young were known to have died during the study.

A total of 204 observations on mobility were recorded (*L. canus* 146, *L. fuscus* 58). Of these 70 and 29 respectively relate to unbanded (quite young) individuals, 76 and 29 respectively to banded birds which were recovered 1 to 5 times each.

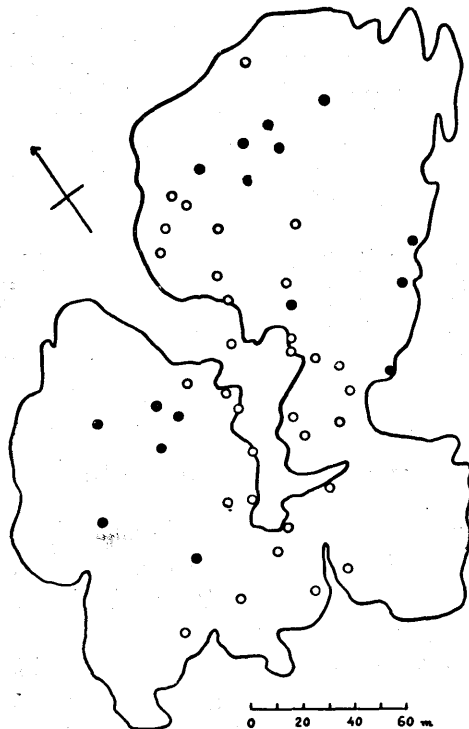


Fig. 1. Location of nests of the common gull (open circles) and the lesser black-backed gull (black circles) in the area studied.

The area studied comprises two more or less separate islands which have a rather narrow land connection (Fig. 1). A long, shallow bay is left between the islands. The shores bordering the bay are low rocky meadow land. The nesting of *L. canus* is almost entirely confined to this lowland, while *L. fuscus* nests on the higher central and outer parts of both these islands, either on the bare rock or under juniper bushes.

Fig. 2 illustrates the development of mobility in young common gulls and young lesser blackbacked gulls in the area studied. The graphs are based on means of all observations. Table 1 also shows the total number of observations for each age

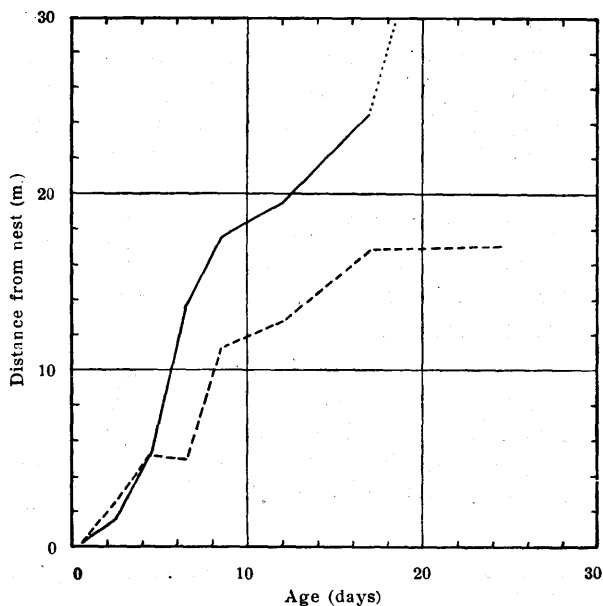


Fig. 2. Development of mobility (average distance from nest) in young common gulls (broken line) and lesser blackbacked gulls (solid line) at different ages.

class, the differences of the means of the two species and the corresponding standars errors.

The present data give the following idea of the development of

Table 1. Comparison of the development of mobility (average distance from nest) in young common gulls and lesser blackbacked gulls less than 20 days of age.

Age class (days)	Larus canus		Larus fuscus		Difference	
	Number of cases	Distance from nest (m.)	Number of cases	Distance from nest (m.)	Degrees of freedom	Diff. of means (m.)
0-1	17	0.2 ± 0.04	9	0.2 ± 0.08	24	0.0 ± 0.09
2-3	23	2.7 ± 0.68	15	1.6 ± 0.52	36	1.1 ± 0.85
4-5	19	5.4 ± 0.80	5	5.4 ± 1.29	22	0.0 ± 1.52
6-7	18	4.9 ± 0.82	5	13.6 ± 4.30	21	8.7 ± 4.37
8-9	13	11.2 ± 3.49	5	17.5 ± 4.35	16	6.3 ± 5.58
10-14	24	12.7 ± 2.63	13	19.5 ± 4.15	35	6.8 ± 4.90
15-19	12	16.8 ± 4.46	3	24.4 ± 12.9	13	7.6 ± 13.7

mobility in *L. canus* during the first few days. On the day of hatching no young were recorded outside the nest bowl. Of the young one day old (14 cases) half were still in the nest bowl and all within a radius of 1.1 m. from the nest. Out of 13 young common gulls two days old not more than 2 (15 per cent) were in the nest bowl, the maximum still being, with the exception of one case (5 m.) 2 meters. On the other hand, no young were observed in the nest after this age. The maximum distance at an age of 3 days had risen to 10 m.; in the 5 days class it was 15 m. The greatest distances from the nest observed in common gulls less than 3 weeks of age were 60 m. (9 days of age) and 55 m. (17 days).

Of the young common gulls found in the nest bowl 25 per cent had hatched the same day, 83 per cent were less than one day old, and all less than two days old. Of young observed within a radius of one meter from the nest, 9 per cent had hatched the same day, 48 per cent were less than one day old and 72 per cent less than 2 days old.

As to the lesser blackbacked gull the data are less convincing. However, in regard to the first days of life in the main the same features are exhibited as in the case of the common gull. Thus 30 per cent of the young less than one day old were in the nest bowl and all within one meter from it. In the 2 days class 14 per cent were observed in the nest, the maximum distance at this age being 2.5 m. Young lesser blackbacked gulls 3 and 4 days old were found at distances of ca. 6 m. from the nest. At 5 days the maximum distance was 10 m., at 10 days 30 m., and at 15 days 50 m.

During the first 4 to 5 days the young gulls stay within an average distance of less than 5 meters. The free mobility during this period is slight and nearly equal in both the species studied. It seems that the capacity for movement is still inadequately developed. In young over one week of age mobility increases rapidly and at the same time the differences between the two species become apparent. The differences from the age of 6 to 7 days onwards, even though not statistically significant, are quite obvious. These differences may in part be endogenous (specific morphological and functional characteristics) but at least in this case they seem for the main part to be due to one or several of the

following reasons: (1) differences in the structure of the surrounding terrain, (2) differences in the nesting density and size of territories (Fig. 1), and (3) differences in the distance of the nest from the water line (Fig. 1).

The nests of the common gull are surrounded by vegetation hindering free mobility. Hiding there is also possible almost anywhere and does not require long walks. The lesser blackbacked gulls, on the other hand, nest on more or less open rock, where movement is easier and where scarcity of good hiding places often necessitates considerable mobility. When free mobility has been reached after the first few days of life, the differences in the possibility (and necessity) of movement between the two species become apparent.

The nesting density and the size of territories may also cause the difference in mobility to appear as soon as *L. canus*, which nests more densely, has reached the stage when the young start crossing into other territories and in this way become limited in their mobility. *L. fuscus* can move further without being limited by the nearness of other territories.

As the young gulls, in part actively, in part passively (on account of the sloping terrain) have a tendency to move gradually towards the water line it is obvious that the location of the nest in relation to the water line is an important factor limiting particularly the apparent maximal distances. As a result, the common gulls, nesting on the average much nearer to the water line than the lesser blackbacked gulls, show a lower mobility.

The necessarily frequent observation rounds on the area may have caused the mobility of the young to be somewhat greater than under conditions entirely free of human interference.

**Literature cited:** PETERS, H. M. and R. MÜLLER, 1951, Die junge Silbermöwe (*Larus argentatus*) als „Platzhocker“. Vogelwarte 16: 62—69.

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