

Kurze Mitteilungen

Die Vogelwarte 31, 1981: 111

Calling by nocturnal migrants: A device for improving orientation? GRIFFIN (1969) has suggested that a nocturnal migrant might obtain orientational information by noting the position of consecutive calls made by birds migrating nearby. HAMILTON (1967) has pointed out the statistical advantages of flocking and has suggested that the calls made by nocturnal migrants serve to maintain flock organisation (HAMILTON 1962). In this paper I suggest that birds might react to doppler shifts in such a way as to reduce the dispersion of their headings.

Many nocturnal migrants call repeatedly while on migration, and the rate of calling increases under overcast skies. Such conditions are expected to result in an increased dispersion of the headings of migrants which employ star compass information. An increase in the dispersion of headings is expected to result in an increased variance of doppler shifts due to an increase in the relative velocities of the birds. If there is some residual orientation in the population, an individual migrant should hear calls over a distribution of frequencies, the mean of which should coincide with the normal call frequency of the species only if the bird is flying in the mean direction adopted by the population of conspecifics migrating around it. If on the other hand, an individual's heading differs from the mean direction adopted by the population, the mean frequency of the calls the bird can hear is shifted from the normal call frequency of the species.

If the bird adjusts its heading so as to hear the maximum number of normal calls of its own species, it would in so doing bring its own heading closer to the mean of the population. Such behaviour would compensate for temporary inadequacy of the orientational information available to the bird (such as might occur under overcast skies) by allowing birds to pool the remaining orientational information with birds migrating around them. This behaviour would have the added advantage of reducing the probability of occurrence of mid-air collisions between birds. The above hypothesis requires a high ability to discriminate between similar sound frequencies.

Recent published data on the clumping of nocturnal migrants in the air space suggest that an appreciable fraction of nocturnal migrants fly within earshot of one another (BELLROSE 1971, BALCOMB 1977). Moreover, many of the birds within earshot of one another are flying in similar directions (BALCOMB 1977).

According to the hypothesis presented here, nocturnal migrants which migrate in similar directions at similar speeds and at the same time of year, are expected to show convergence in their calls. Divergence is on the other hand expected between species which migrate in widely different directions. The function of the increased rate of calling under overcast might be to increase the probability that the call will be heard by nearby birds

References: Balcomb, R. (1977): The grouping of nocturnal passerine migrants. *Auk* 94: 479—488 • Bellrose, F. C. (1971): The distribution of nocturnal migrants in the air space. *Auk* 88: 397—424 • Griffin, D. R. (1969): The physiology and geophysics of bird navigation. *Quart. Rev. Biol.* 44: 255—276 • Hamilton, W. J. (1962): Evidence concerning the function of nocturnal call notes of migrating birds. *Condor* 64: 390—401 • Ders. (1967): Social aspects of bird orientation mechanisms. In Storm, R. M. (ed.), *Animal orientation and navigation: 57—72*. Corvallis, Oregon State University press •

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Die Vogelwarte 31, 1981: 111—112

Erstnachweis einer adulten Mittelmeer-Silbermöve (*Larus argentatus michabellis*) an der deutschen Nordsee-Küste — Am 14. 7. 1979 konnte ich auf dem ICI-Gelände Voslapper Watt, Wilhelmshaven eine adulte Silbermöve mit einer gelben Flügelmarke beobachten, welche die Aufschrift „L7“ trug. Die Möve fiel durch keine besonderen Merkmale oder Verhaltensweisen auf. (Die Füße waren durch die Vegetation verdeckt). Die Fluchtdistanz des Vogels betrug etwa 40 m. Im Februar 1980 fand ich in „Die Vogelwarte“ einen Hinweis, daß

Dr. SPITZER vom II. Zoologischen Institut der Universität Wien an der Adria Silbermöwen derartig markiert hat. Auf mein Schreiben teilte er mir die Beringungsdaten mit:

- o ad. Brutv. 20. 04. 1977 Sorellen b. Rovinj, YU 45.05 N / 013.40 E
k 14. 07. 1979 Voslapper Watt, Wilhelmshaven, D 53.38 N/008.05 E

Damit war der erste sichere Nachweis einer adulten Mittelmeer-Silbermöwe an der Nordseeküste erbracht. Vorausgegangen waren zwei Funde immaturer Exemplare. Der erste bezieht sich auf eine Möwe, welche sich im Winter 1952 in Cuxhaven-Döse im Tiergarten aufhielt, dort gefangen gehalten und später dem Institut für Vogelforschung übersandt wurde. Dr. GOETHE bestimmte sie als Mittelmeer-Silbermöwe, obwohl später Zweifel auftraten: „Nach jahrzehntelangen Erfahrungen mit einem aufgezogenen und gehaltenen ♂ der gelbfüßigen Form *L. a. omissus* vom Groß-Saimaa-See in Zentralfinnland bin ich nicht mehr so ganz sicher und halte es nicht für ausgeschlossen, daß der Vogel von Cuxhaven doch auch zur „Weißmeer“-Unterart gehört“ (GOETHE in litt.). Beim zweiten Fund handelt es sich um einen am 30. 5. 1965 bei Marseille beringten Vogel, welcher am 12. 6. 1966 S Hoek van Holland gefunden wurde.

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Die Vogelwarte 31, 1981: 112

Danish Black-headed Gull (*Larus ridibundus*) in Tjumen, USSR — Danish Black-headed Gulls have been recovered in Western Europe with a few found as easterly as Poland (SALOMONSEN 1967). A recovery of a Danish bird far outside this range may be worthwhile mentioning:

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- o pull. 20. 06. 1964 Fruensholm (57.05 N, 09.47 E), Limfjord, Denmark
x 21. 06. 1970 Ostrov Belyi (73.11 N, 70.30 E), Tjumen, USSR.

The bird was recorded during the breeding season far outside the normal range of the species. Although the Black-headed Gull has extended its breeding range during the present century (ISENMANN 1976—1977), the northern limit seems to follow a line from Moscow to Ivanovo, Ijevsk, Tjumen, Novosibirsk and Jenisei (DEMENTIEV & GLADKOV 1967, JOHANSEN 1960, FLINT 1975). Even in USSR, the recovery is from an extremely northern latitude.

KARPOWICH (1958) has outlined the migrational pattern of the Soviet Black-headed Gulls. Birds from Ladoga winter in the North Sea and the Mediterranean, birds from Latvia and Estonia in the Baltic, the North Sea, the Bay of Biscay and the Mediterranean, birds from the Moscow region in the Black Sea and the Mediterranean and birds from Kasakhstan, Kirgisja and Sibirja in the Caspian Sea, Persian Gulf and the Indian Ocean. From this account it can be assumed, that the Danish bird may have followed birds from the Baltic states to their breeding grounds. The route of vagrancy within the Soviet Union remains unknown.

Zusammenfassung: Eine Dänische Lachmöwe (*Larus ridibundus*) wurde in einem Alter von 6 Jahren aus Ostrov Belyi, Tjumen, UdSSR, zurückgemeldet.

Literatur: Dementiev, G. & N. Gladkov (1967): The Birds of the Soviet Union. Bd. 3. Jerusalem • Flint, V. (1975): Kolonialnie gnesdovja okolovodnich ptich i ich ochrana. Moskwa • Isenmann, P. (1976—1977): L'essor demographique et spatial de la Mouette rieuse (*Larus ridibundus*) en Europe. L'Oiseau et R.F.O. 46: 337—366, 47: 25—40 • Johansen, H. (1960): Die Vogelfauna Westsibiriens. III. Teil. J. Orn. 101: 316—339 • Karpowich, W. N. (1958): Opyt rajonirovanija populazij nehotorych widow ptich po priskanak napravlenija proljta. Trudy Oksskogo zapov. 2: 116—128 • Salomonsen, F. (1967): Fugletraekket og dets gæder. Kopenhagen •

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