

# Migration of Little Gull (*Larus minutus*) in the North Atlantic Region

By

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(Med et dansk resumé: Dværgmågens (*Larus minutus*) træk i det Nordatlantiske område.)

## INTRODUCTION

While on vacation in U.S.A. I observed a Little Gull (*Larus minutus*) in Maryland in 1963. This observation spurred my interest in the frequent occurrence of this species in North America.

The Little Gull is one of the most numerous palaeartic species occurring on the western side of the North Atlantic.

The research done in regard to this phenomenon has led me far afield and has included all other palaeartic species which have occurred in North America. The results of these more involved studies will be published elsewhere.

My investigations of the puzzling occurrence of the Little Gull in North America

led to a complete reevaluation of our knowledge of the distribution and migration of this species in the entire North Atlantic region. The results of this reevaluation is presented here.

In my work I have received much help from O. L. AUSTIN, S. CHRISTOFFERSEN, R. EDBERG, L. FERDINAND, F. GUDMUNDSSON, E. HANSEN, J. V. HANSEN, N. HESSELBJERG-CHRISTENSEN, H. JOHANSEN, J. JØRGENSEN, B. NEATH, N. O. PREUSS, C. S. ROBBINS, N. ROSENBERG and J.-P. VAUDE WEGHE. The U. S. Wildlife Service and the Danish Meteorological Institute have furnished me with information essential for my work. I take the opportunity to thank all for their contribution and patience.

## METHODS.

In my research I have accumulated all the records of Little Gulls from North America, Greenland, Northern Germany, Balticum and the Scandinavian countries up until 1965 as they have occurred in the literature or have been put at my disposal by ornithologists from these countries.

Most of the literature used in accumulating records is not cited as it includes several hundred different references. These records have been supplemented by banding records and breeding records from other parts of Europe.

## BREEDING.

The Little Gull has a rather restricted breeding range in Europe. It stretches from the eastern part of Central Russia to the North Sea and from the Botnic Bay to an isolated population along the northern coast of the Black Sea. It is also found breeding in Central and Eastern Siberia (VAURIE 1962). In the westernmost part of its range it is very scarce, and the main part of the population is found in the Baltic countries and Western Russia.

Only the birds breeding in Western Europe and along the Baltic Sea reach the Atlantic in any numbers in winter. A few wintering in the Mediterranean reach the Atlantic through the Strait of Gibraltar. The number of breeding pairs in this

area is: Holland c:a 20 (ERARD 1960), Denmark c:a 20, Sweden 20–100 (SALOMONSEN 1963), Finland 200 (MERIKALLO 1958), and at the most 5000 along the southern coast of the Baltic Sea (BERZIUS 1947, LEPIKSAAR and ZASTROV 1963, NIETHAMMER et al. 1964, TISHLER 1941).

Considering this very small number (in relation to the numbers of other species of gulls in this region) it becomes even more puzzling that this species should occur on the western side of the North Atlantic as often as it does. This implies the existence of factors favouring Atlantic crossings of this species compared to the other gulls found in this area.

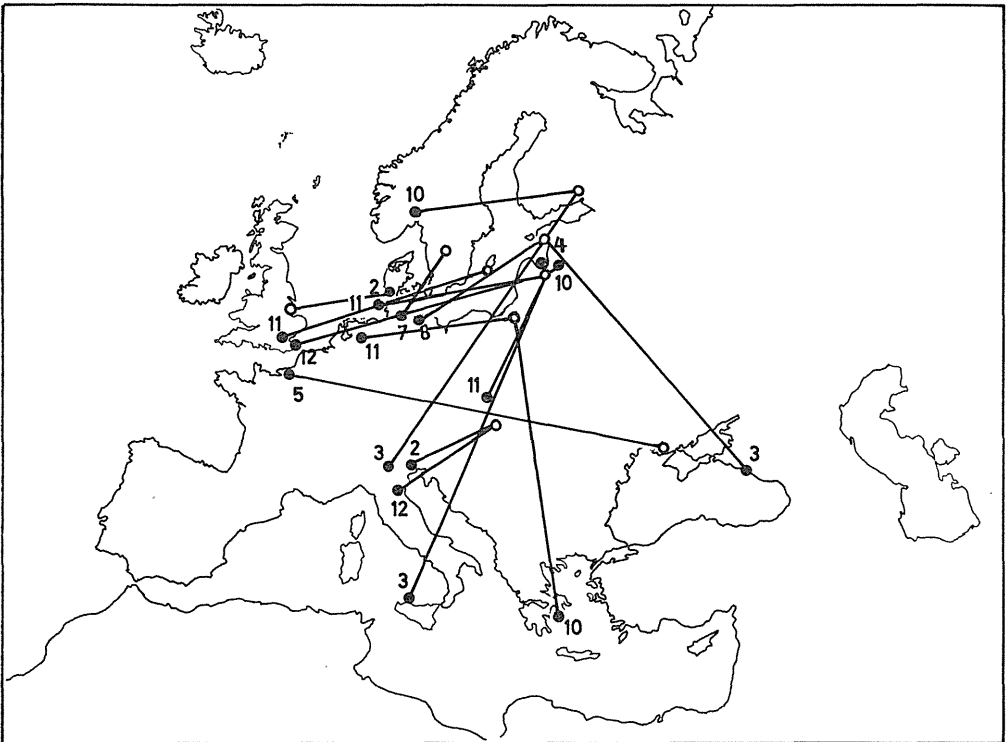


Fig. 1. Recoveries of Little Gulls in western Europe. ●: recovery site, ○: banding site. Numeral at recovery site: month of recovery.

Fig. 1. Gennemeldinger af Dvergmåger fra Vesteuropa. ●: genmeldingssted, ○: ringmærkningssted. Tal ved genmeldingsstedet: genmeldingsmåned.

## BANDING.

From Western Europe I have been able to accumulate a total of 18 recoveries of banded Little Gulls. These are shown on fig. 1. The recoveries indicate a westerly course of migration towards the North Sea, a more southern (probably via the Central European rivers) towards the Mediterranean and a southeastern course towards the Black Sea. This corresponds completely with ERARD's (1960) findings, and does not throw light on the problem of the occurrence in North America.

Of particular interest is the recovery in October of a bird close to the place of banding in Letland. This shows that some birds can remain in the eastern part of

the Baltic Sea rather long after the main exodus from this region (July and August – see below).

Another noteworthy return is that of a Finnish bird from Norway in late October of the same year. Also of interest is the recovery from the Atlantic coast of France of a bird banded on the coast of the Black Sea, showing at least some birds of southeastern origin can reach the Atlantic, probably via the Strait of Gibraltar. It must be pointed out though that banding has not clarified the migratory pattern of this species and further banding is necessary to get a more detailed picture.

## FALL MIGRATION.

The records from North America seem completely incompatible with the migratory pattern of the Little Gull as previously known (ERARD 1960). The areas traversed, the time of migration and the winterquarters of the main bulk of the population show none of the characteristics necessary for a transatlantic crossing on a larger scale (either westerly directed course and/or little adherence to coastlines and/or wintering grounds in the northern North Atlantic) except for indications of a more pelagic winterexistence than is the case of most other gulls (see below). As the fact of the magnitude of this crossing remains it indicates 1) either our knowledge of the conditions for such a crossing is inadequate or 2) our knowledge of the migration of Little Gulls in Western Europe is insufficient.

An investigation of and comparison with other species in regard to transatlantic crossings from east to west reveals nothing

new to elucidate the phenomenon (BRUUN, MS).

A reevaluation of our knowledge of the migratory habits in Western Europe is therefore necessary to elicit the special factors favouring Atlantic crossings of this species.

A possible place of origin is the Atlantic off the Iberian peninsula and North Africa, but the Little Gull is but a rare vagrant to these parts. Although some crossings might take place from here, they cannot possibly account for the large majority of birds recorded from the western side of the North Atlantic.

It seems more likely a crossing could be made at the northern part of the North Atlantic as is the case of most other European species regularly encountered in North America. In the following an attempt is made to clarify the migration in this more northern area.

### FALL MIGRATION ALONG THE SOUTHERN COAST OF THE BALTIC SEA.

The figures from Kurischer Nehrung clearly show the main exodus from the breeding grounds in the Baltic countries taking place in July and August (fig. 2). Only very small numbers pass in September and October. The figures from Schleswig-Holstein show a clear maximum in September indicating a continuation of the migration along the southern coast of the Baltic Sea (fig. 2). It must be noted that a much smaller number of birds are involved in this western continuation. Most of the birds passing Kurischer Nehrung disappear before they reach the coast

of Schleswig-Holstein and it is known from several observations they turn south to continue through Central Europe at the Oder and other rivers which they follow southward (ERARD 1960). There are no records of Little Gulls from Rügen indicating the southward turn is made before this islands is reached. A small proportion does continue along the coast though. The direction is westward and the birds pass Schleswig-Holstein to reach the North Sea, where their continued course can be followed to England and the coast of France.

### FALL MIGRATION ALONG THE NORTHERN COAST OF THE BALTIC SEA.

An analysis of the Swedish records show a picture quite different from that found along the southern coast of the Baltic Sea. The fall migration culminates two month later (October), but a much smaller number of birds are involved (fig. 3).

The origin of these birds is obscure. The return of a Finnish bird from Norway in October implies birds from the northernmost part of the Baltic breeding grounds. The three returns of birds banded in Sweden indicate that this population

is not involved. Whatever the origin, it is evident that some birds do not follow the regular pattern, but migrate at a later time and on a more northern latitude. The fall records from Norway are too few to be significant, but the maximum is 5 records from September. There are two records from October and one from November. This indicates that these northern migrants do not to any extend pass Norway, but probably pursue their westerly course just south of this country.

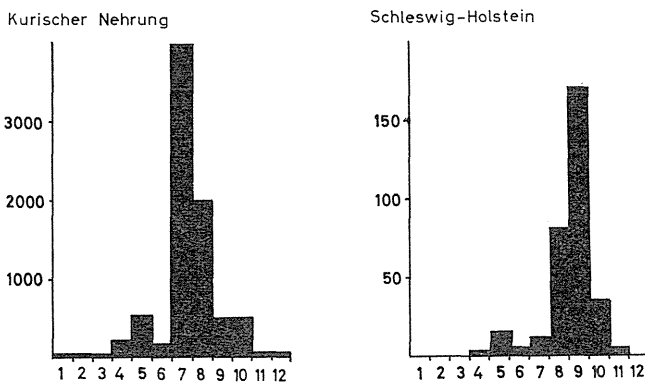


Fig. 2. All published records of Little Gull at Kurischer Nehrung and Schleswig-Holstein by months. Note number of birds compared to other diagrams.

Fig. 2. Alle publicerede rekorder af Dvergmåge fra Kurischer Nehrung og Schleswig-Holstein månedsvis opdelt. Bemærk skalaen i forhold til andre figurer.

### THE FALL MIGRATION IN DENMARK.

The Danish records peak in August and September reflecting the migration along the southern coast of the Baltic Sea also passing Schleswig-Holstein (fig. 3). Of great importance though is the increase in records in November reflecting the migration at that time along the northern coast of the Baltic Sea (Sweden). This diphasic pattern is significant although a rather small number of birds are involved. The lack of Norwegian records of the late migration is at least partially explained

by these birds passing over Denmark, which country thus enjoys part of both migratory routes in the Baltic Sea. The Schleswig-Holstein records do not show any rise in November indicating the area traversed by the late migrants is narrow. The birds probably pass rather fast compared to the more leisurely pace of the early migrants. The late migration is probably spurred by cold weather in the eastern part of the Baltic Sea.

### THE FALL MIGRATION OF THE BRITISH ISLES.

Numbers slowly build up through August and September, culminate in October and taper off in November in England and Wales (fig. 4). In recent years there have been an increasing number observed in Scotland late in the season (NEATH in litt.), numbers which are not large enough though to be reflected in the collected material (fig. 4). The pattern seems to reflect the early migration (in which a larger number of birds participate), and only in the records from the Orkney and Shetland Isles can the late migration be

detected (fig. 4). The northern latitude of these islands is significant.

The Irish records are very few indeed, but most are from December (fig. 5). It is not possible to determine if these birds are true migrants or wintering birds (see below).

ERARD (1960) finds evidence of an area of concentration found in the Bay of Biscay which is frequented by many other pelagic birds during the winter. The concentration here starts building up already in July. That a crossing to North America can

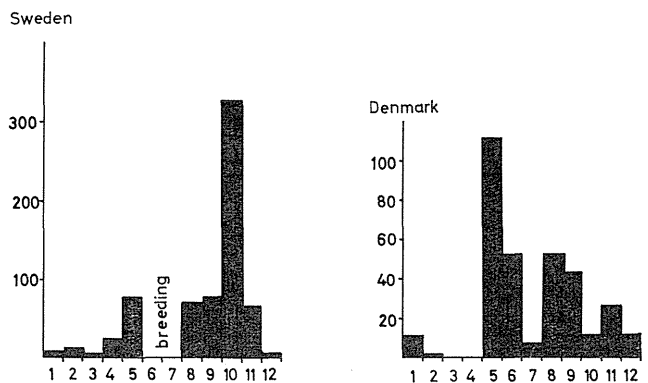


Fig. 3. All published records of Little Gulls observed in Sweden and Denmark by months. Note number of birds compared to other diagrams.

Fig. 3. Alle publicerede rekorder af Dvärgmåge fra Sverige og Danmark månedsvis opdelt. Bemærk skalaen i forhold til andre figurer.

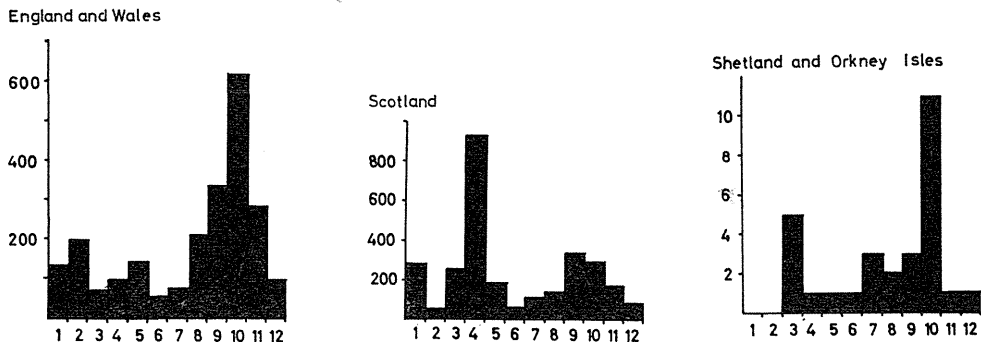


Fig. 4. All published records of Little Gull from England and Wales, Scotland, and Shetland and Orkney by months. Note number of birds compared to other diagrams.

Fig. 4. Alle publicerede rekorder af Dvergmåge fra England og Wales, Skotland og Shetland-Orkney månedsvi opdelt. Bemærk skalaen i forhold til andre figurer.

take place from this area is likely. An indication of this is the recovery in southernmost North America of a Black-headed Gull (*Larus ridibundus*) and two Gull-billed Terns (*Gelochelidon nilotica*), all three banded in northwestern Europe (Denmark and Germany). These birds are

known to traverse the area in question and have probably started their crossing at this point. Crossings starting from this region are quite rare though in comparison with the large number of birds of different species crossing further north (BRUUN, MS).

### FALL RECORDS FROM ICELAND AND THE FAROE ISLES.

Records are very few, but the largest number is from November reflecting the late northern migration evident from Sweden, Denmark and the Orkney and

Shetland Isles (fig. 5). Although comparatively few birds are involved in this late migration, the western direction is significant in respect to Atlantic crossings.

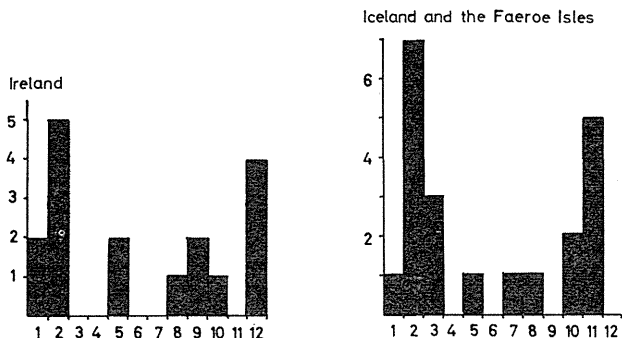


Fig. 5. All published records of Little Gull from Ireland and Iceland-Faroes by months. Note the number of birds compared to other diagrams.

Fig. 5. Alle publicerede rekorder af Dvergmåge fra Irland og Island-Færøerne månedsvi opdelt. Bemærk skalaen i forhold til andre figurer.

### FALL RECORDS FROM NORTH AMERICA.

The Little Gull is one of the most regular visitors from Europe to the western side of the North Atlantic, superceded in numbers only by Teal (*Anas crecca*), Wigeon (*Anas penelope*), Curlew Sandpiper (*Calidris ferruginea*), Ruff (*Philomachus pugnax*) and Black-headed Gull.

One of the big events in American ornithology in this century was the discovery of three pairs of Little Gulls nesting in a swamp in Ontario in 1962 (SCOTT 1963). This discovery is indicative of the extent of the transatlantic crossings performed by this species. I find it highly inconceivable that the records of Little Gulls from North America stem from a small local population. First of all we have no indication that such a breeding population exists but infrequently, and secondly it would be most unlikely that such a small population could account for the many records.

Some numbers arrive already in July, August and September, but the majority are observed in November and December (fig. 6).

Several of the records are from the Great Lakes Region. Apparently these birds have reached these very large lakes via the St. Lawrence. The early records probably stem from the small westbound branch of the route along the southern coast of the Baltic Sea, whereas the later and much larger part is derived from the later and more northern route along the northern coast of the Baltic Sea. This latter route is also more directly western

in its direction. Further facilitating the crossings of these late birds is the increased frequency of eastern storms in the eastern part of the northern North Atlantic at this time (from 5% in October to 11% in November, Danish Meteorological Institute). Studies (BRUUN MS, ERSKINE 1963) have shown many other European

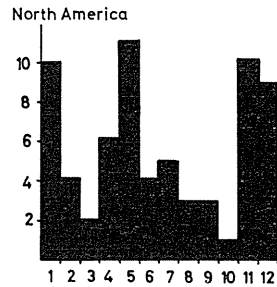


Fig. 6. All published records of Little Gull from North America by months. Note the number of birds compared with other diagrams.

Fig. 6. Alle publicerede rekorder af Dvergmåge fra Nordamerika månedsvist opdelt. Bemærk skalaen i forhold til andre diagrammer.

visitors to North America originate in the area between Iceland and the British Isles i.e. Black-headed Gull, Barnacle Goose (*Branta leucopsis*), Wigeon and Teal. It is also of interest to note the well-documented invasion of Greenland by the Fieldfare (*Turdus pilaris*) originated in the same area and at the same late season of the year (SALOMONSEN 1950).

### SUMMARY OF FALL MIGRATION.

The greatest part of the westernmost Little Gull population leave the breeding grounds in the Baltic in July and August, travelling west along the southern shore

of the Baltic Sea. Here most turn south to follow the great European rivers to the Mediterranean, while some continue on a westerly course, pass over Denmark and

northern Germany to reach the North Sea, the Channel and the Bay of Biscay. They arrive here from July to September. A few of these birds continue their western course and reach North America, but these are few and rather insignificant in numbers. A part of the breeding population stays in the eastern part of the Baltic Sea until October when they migrate west along the northern coast of the Baltic Sea, continue their western course past Denmark and reach the northernmost part of the North Sea and the open sea beyond that

in November. From here they, aided by rather frequent easterly gales, reach the North American coast in November and December in considerable numbers.

The reason for the preference for this more northern route by the late migrants is obscure. The rivers of central and eastern Europe are not yet frozen at this time (Danish Meteorological Institute) although the weather certainly is colder here than along the seashores of Northwestern Europe.

#### WINTER EXISTENCE.

During the nineteenfifties there were increasing evidence the Little Gull led a far more pelagic winterexistence than was previously known (i.e. sightings from lightships (HANSEN 1962), sightings of Little Gulls in the company of true pelagic species (BOURNE 1957)). This was pointed out by VOUS (1960) who compared the Little Gull with Sabines Gull (*Xema sabini*) and by ERARD (1960). Analysis of earlier records show that this is not a new phenomenon though. Thus the observation of c:a 100 Little Gulls near Larkallen, Norway in late January 1930 probably are of birds blown ashore from their usual wintering grounds further out to sea (LØVENSKIOLD 1947). The records from the North Atlantic (fig. 3-5) show the species present in small numbers only in the North Sea where it is usually observed after storms. There are proportionally many records from Ireland, Iceland and the Faeroe Isles and North America. From these observations it can be concluded

that the birds which reach the North Atlantic, either as the small western branch of the early route or as the later and more northern migration, lead a more pelagic life than is the case of most other gulls breeding in the same area.

Some of the Little Gulls wintering in the Mediterranean do stray into the North Atlantic (see page 127) and there is evidence (BOURNE 1957) from North Africa, that the Little Gulls wintering in the Mediterranean often stay far from shore. Some of the winter records from the southern part of North America and Bermuda could be interpreted as representing birds of this origin.

The birds of the open sea are more subjected to the plays of the elements, and some Little Gulls probably make landfall on the western side of the Atlantic during the winter months although they do not compare in numbers to the late fall migrants reaching this far.

#### SPRING MIGRATION.

The pattern of migration in spring is simpler than that of the fall (fig. 2-5). The main migration in Scotland is in April, whereas England, Denmark and

Sweden are passed during the month of May, late in which month the birds arrive at their breeding grounds.

In Iceland there is an increase in num-



bers already in March, whereas most of the North American spring records are from May with a fair number seen in April. This latter pattern is probably caused by the fact that the birds are more vulnerable to displacement at the time of migration as it is known from many other species (DORST 1960). The American birds move northward along the coast even reaching as far north as Greenland (SALOMONSEN 1950). The number involved is so great that the species has even been able

to breed on the North American continent, at least on one occasion.

The Little Gulls observed in spring in North America are recruited from a) early fall migrants (few), b) late fall migrants (many) and c) wintering birds starting spring migration over the open sea (few). With our present knowledge of the American breeding population there is no reason to believe many of the records are of pure American origin.

#### DISCUSSION AND SUMMARY.

From the above some new facts about the migratory habits of the Little Gull have emerged. Our previous knowledge still

holds true for the vast majority of birds but a small proportion displays a completely different, and for the occurrence of

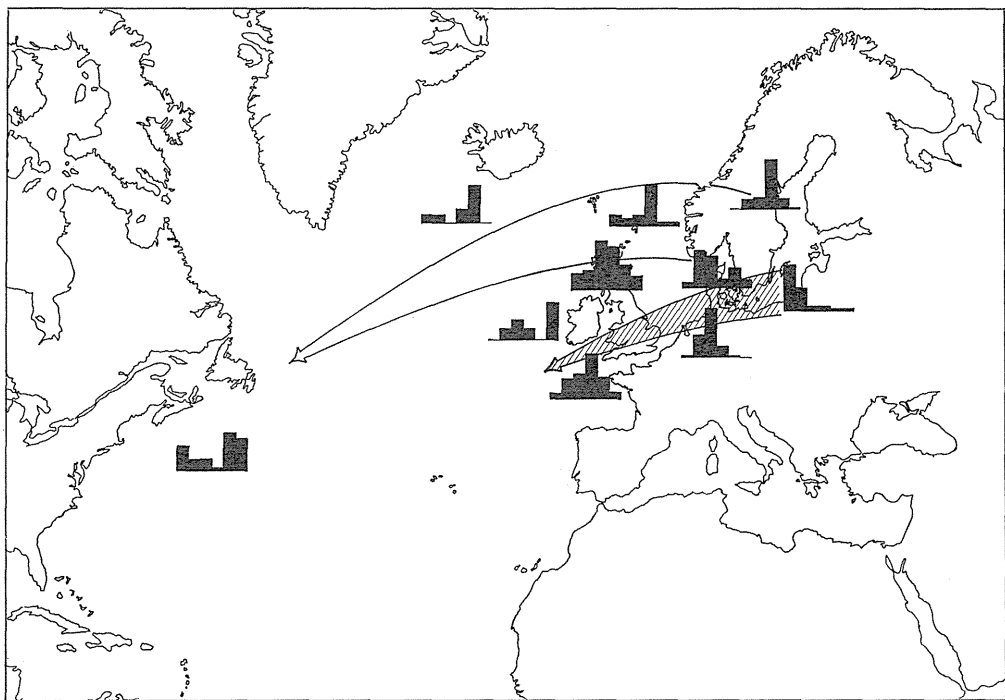


Fig. 7. Summary of fall migration of Little Gull. The latter half of fig. 2 to 6 superimposed on map of the North Atlantic. The scale of each diagram corresponds to that of fig. 2 to 6. Open arrow: direction of the late, northern migration. Shaded arrow: direction of the early, southern migration.

Fig. 7. Dvergmågens efterårstræk. Sidste halvdel af figurerne 2 til 6 overført på kort over Nordatlanten. Bemærk at skalaerne svarer til de ved fig. 2 til 6 benyttede. Åben pil: det sene, nordlige træks retning. Skraveret pil: det tidlige, sydlige træks retning.

the species in the North Atlantic, highly significant pattern (see fig. 7):

When the main group leaves in early fall the largest number follows inland routes to southern Europe to spend the winter there. A smaller number goes west to reach the British Isles and the Bay of Biscay where at least a part of them pursue a pelagic type of life throughout the winter months. A small proportion of the birds of the Baltic region stays in the Baltic Sea until October-November, when they depart on a directly western course bringing them into the northern North Atlantic. Here they stay well off shore probably mixing with Kittiwakes (*Rissa tridactyla*) and other truly pelagic species. They are subjected to strong and rather frequent easterly storms aiding them in reaching the western shores of the North Atlantic. The pattern outlined above corresponds well with the time and place of the arrival

of the majority of Little Gulls in North America and is supported by the occurrence of the species in the Northwestern European countries. Earlier arrivals in America are probably recruited from the population wintering further south in the Bay of Biscay and off the English coast, but these birds are few in numbers.

During the winter and spring several birds from both these areas reach the western North Atlantic during easterly storms. Some Mediterranean birds, passing through the Strait of Gibraltar, likewise may reach this far west although their numbers are insignificant. It is now known that a very small breeding population exists in North America, at least in some years. This population is too small though (3 nests found) to be responsible for all the records, and most of the birds seen in U.S.A. and Canada have crossed the Atlantic.

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## DANSK RESUMÉ

*Dværgmågens (Larus minutus) træk i det Nordatlantiske område.*

Dværgmågen er en af de palæarktiske fugle, som hyppigst er observeret i Nordamerika. Årsagen til denne optræden er uklar, specielt når artens forholdsvis sjældenhed i Vesteuropa tages i betragtning. Med vor traditionelle viden om artens udbredelse, træk og trækvaner lader forholdet sig ikke forklare.

I et forsøg på at finde til de faktorer, som er afgørende for de hyppige atlantiske krydsninger, har jeg dels sammenlignet Dværgmågen med andre i Nordamerika hyppigt optrædende arter (Hættemåge (*Larus ridibundus*), Sildemåge (*Larus fuscus*), Bramgås (*Branta leucopsis*), Krumnæbbet Ryle (*Calidris ferruginea*), Brushane (*Philomachus pugnax*) Pibeand (*Anas penelope*), Krikand (*Anas crecca*), etc.), dels foretaget en nøjere analyse af artens optræden og trækveje og -vaner i Vesteuropa. Den førstnævnte undersøgelses resultater vil blive offentliggjort andetsteds. Undersøgelsen gav ikke nogen direkte oplysninger om Dværgmågen, omend nok antydninger om hvori disse faktorer måtte ligge. Således er det klart, at hovedparten af de i Amerika iagttagne europæiske fugle stammer fra atlantehavsområdet mellem Island, de Britiske øer og Norge.

*Efterårstrækket*

Dværgmågens hovedudbredelsesområde er at finde i Østeuropa, og den vestlige population er kun af ringe størrelse, næppe overstigende 6000 par. Af disse trækker en meget stor del via de europæiske floder til middelhavsområdet, hvor de overvintrer. Nogle af disse fugle kan nå Atlanterhavet gennem Gibraltarstrædet.

En del trækker imidlertid gennem Østersøen langs dennes sydkyst til deres overvintringsområder langs Atlanterhavets kyster, specielt de Britiske øer og Biscayabugten.

En nøjere undersøgelse af dette vestgående træk (fig. 2-6) viser, at det foregår i to etaper. Første etape involverer det største antal fugle og foregår allerede i juli, august og begyndelsen af september. Fuglene trækker i sydvestlig retning og når vinterkvartererne allerede i disse måneder. Anden etape

består af fugle som er forblevet i Østersøen i længere tid, og først i oktober og november starter deres træk. I modsætning til de tidligere fugle trækker disse sidste langs Østersøens nordkyst i en direkte vestlig retning, og når ud i Atlanten i området mellem Island, de Britiske øer og Norge. Her er de på denne årstid udsat for ret hyppige østlige storme, som fører dem over Atlanten til Nordamerikas østkyst. Det er netop fra denne årstid, de fleste observationer af Dværgmåger i U.S.A. og Canada stammer. Det er desuden fastslået at Dværgmågen i vinterhalvåret fører en meget pelagisk tilværelse i selskab med arter som Sabinemåge (*Xema sabini*) og Sule (*Morus bassanus*).

De amerikanske iagttagelser anses derfor hovedsageligt at stamme fra dette sene, vestligt rettede træk, mens kun få stammer fra det tidligere og mere sydvestligt rettede træk og fugle overvintrende til havs.

*Forårstrækket*

Forårstrækket i Europa begynder allerede i marts, men finder hovedsageligt sted i april og maj. Dette træk er til dels reflekteret i det amerikanske materiale, idet de til havs overvintrende fugle i perioden med øget trækaktivitet er mere udsat for afdrift. Dog er den største part sikkert fugle, som allerede tidligere har krydset Atlanterhavet, og som ved deres træk langs kysten udsætter sig mere for iagttagende ornithologer.

*Slutning*

Et af århundredets store ornithologiske begivenheder i Amerika var opdagelsen af tre par Dværgmåger ynglende i Ontario 1962. Jeg tror ikke, denne enkelte yngleiagttagelse er udtryk for andet end det store antal fugle, som regelmæssigt krydser Atlanterhavet, og der er ikke med vor nuværende viden grund til at tro, at flertallet af de i Amerika optrædende Dværgmåger skulle være klækket dér.

Ringmærkninger (fig. 1) støtter den ovenstående udredning af trækket, men giver i sig selv ikke noget væsentligt bidrag til vor forståelse af detaillerne; dertil er materialet for lille.

Manuscript received 2nd oct. 1967.

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