2.2. The Distribution of the Black-Headed Gull (Larus ridibundus L) in Belgium.

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The distribution of the Black-headed gull(Larus ridibundus L.) in Belgium.

by M. LOUETTE

1. Among species responsible for bird-strike in Belgium(BAF-data) the black-headed gull(Larus ridibundus L.) occupies the second place, immediately after the domestic pigeon. Moreover, many dead black-headed gulls are found near the runways (e.g. at Zaventem-Brussels National Airport). This is not surprising because the species is present in large numbers all over the year. It represents more than 90 % of all the Laridae occuring in the inland of Belgium. These gulls are very gregarious and their increasing adaptation to the man-made environment seems to be the reason of a spectacular increase in number during the last decades. It is well-known that gulls are flying slowly and are not afraid of aircraft.
2. This investigation outlines the hazardous kind of this species by describing their distribution and behaviour.
   Although many notes on gull-presence existed in litterature, (a list of consulted papers together with the detailed results will be included into the proceedings) the description of movements and the preparation of maps became much more easy because permanent observations were made by 30 stations (meteo and telecommunication)distributed all over the country. Those observations are made exclusively for bird-strike problems; their organization was discussed in "Progress Report from Belgium" at the 6th Meeting of B.S.C.E. The black-headed gull was the most observed species (26 % of total number -feb. to aug. 1971). Of course, this figure does not give the proportion of gulls in the Belgian avifauna, but gives a good idea of their vagrancy.
3. a In the breeding period (april - june) - see map 1 - actually some 40.000 pairs are present, including the largest colony in Europe with over 20.000 pairs and some colonies just over the Dutch border. But the colonies are distributed only within a 10 %-portion of the country (the outhermost Northern part). The foraging-area occupies some 10 % more of the territory. Feeding-flights occur everywhere in this sector, the density however is increasing near important colonies; often the birds fly rather high but only in little flocks.
   b From june onwards - see map 2 - the young birds leave their colony moving principally in a N. to W.-direction (to the coast of the North-Sea) and in small numbers also to the Rhine basin. The adult birds migrate later on moving towards the North Sea and afterwards mainly to the wintering places at the French and Spanish Atlantic coast. They will gradually be replaced by Northern populations (Baltic area) as to reach a winter number(november) of ± 150.000 birds.

so in Autumn a true migration of black-headed gulls can be observed, but almost exclusively in the coastal & the Lower-Scheldt area.

c A gradual shift in behaviour of the winter population occurs until january. The birds are at first mainly feeding in small to medium-sized groups on wet grassland and garbage dumps (in the Northern third of the country); in mid-winter - see map 3 - they tend to become more gregarious and appear mainly in large towns, following canals and river-systems as guiding-lines. Numbers are maximal now and a stereotype diurnal flight-pattern is adopted. Each large-town population has its own roosting places (lakes) at about 30 kms. (sometimes up to 75 kms.) distance.
They move often in large flocks. Regular routes are used in one direction before noon, and in the other around dark. In some cases, however, it is suspected that the morning and evening routes are not the same, or at least that the pattern of flights (mean number of flocks)differs. This type of movement is only changed in periods of heavy frost, when the gulls leave their roosts at the lakes.
It is thought that, although the gulls do not follow exclusively "water"-routes, highways and especially airport-tarmacs can be favoured, especially in wet conditions and may serve as an "imitation" of lakes or rivers.

d From march onwards - see map 4 - the inverse migration is occuring, bringing back the summer population to the breeding grounds; the Spring arrivals tend to pass quicker than those in Autumn. Prior to the occupation of the colony a dispersion-phase is detected in which birds seem to search for new breeding places. Causes may be : overpopulation of existing colonies or disappearance of old breeding places.
In this period the black-headed gull is observed more numerously in the Central and Southern regions of Belgium than in any other season, and these flights involve moreovera far greater risk for aircraft (relative to numbers) because of the higher altitudes which are used.
After occupation of the breeding grounds by the adults, only the second year birds are wandering around in the coastal and lower-Belgium area.

4. Obviously, a great advantage of our observation network is to point out the presence of gulls at airports (of course the meteo-posts of all major airports are included). Some airports, however situated in a "suspected" area, proved not to contain large quantities of gulls, because of a location just beside the famous winter "routes"; some others did, as was the case for the coastal airports and two major inland ones : Deurne ("Antwerp-population") and especially Zaventem ("Brussels-population") - see map 5.

The last case seems to be by far the most important, for many of the more than 10.000 gulls cross the runways twice (?) a day from november until march. The airport is situated exactly on the 20 km long line reaching from the roosting place to the center of the city - see map 6. This fact was already suspected because of the numbers of dead gulls found (see § 1).

5. It is stated that the black-headed gull suits particularly well for ethological studies as to predict its movements.

Introduction to the communication : "The distribution of the Black-headed gull in Belgium"

by M. Louette.

- After consideration of the list of collided species, it was stated that the country could be divided into a slight number of ornithological zones; so Belgium decided to tackle the bird/strike problem by the following investigations :

Study	Aircraft flight-phase	Principal method used	Species	Aim
1. Migration	"en route"	Radar	All migratory(mainly passerines)	Calculation of biomass versus daily and annual cycle.
2. Daily movements	Both "en route" and "near airport"	Field observations	Those proved dangerous : in decreasing order: -domestic pigeon -b. Head.gull - lapwing -(starling) -(rook)	Investigations on daily flight pattern.
3. "Game birds"	"near airport"	Wildlife management	-Pheasant -(Pardridge)	Removing of birds from runways.

- It should be possible by combining the results of 1 and 2 to calculate "risk-factors" for plane in view of
  A. time of year.
  B. time of day.
  C. geographic position.
  D. height of operations.
  E. meteo.

. It is thought that those results would be of valuable help when preparing aircraft flights.

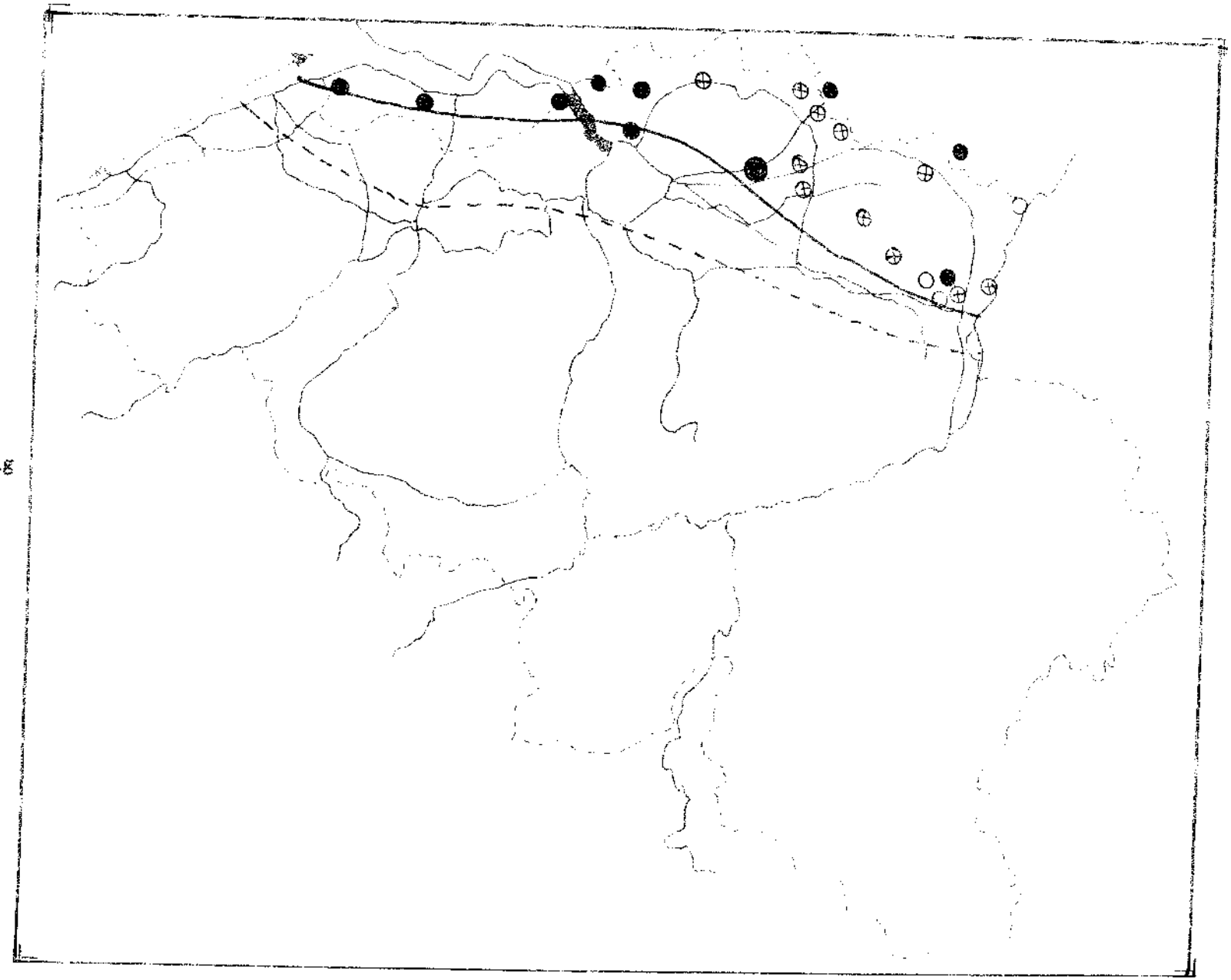
- As the studies on the black-headed gull are well advanced it was decided to discuss this part of the investigation exclusively on this meeting.

MAP 1 DISTRIBUTION : Larus nilibundus April - June

Legend

Location of breeding colonies

- ● > 20,000 pairs
- ● 1,000-5,000 pairs
- ○ < 1,000 pairs (regular)
- ⊕ irregular
- ——— Southern limit of breeding range
- – – – Southern limit of feeding-flights
- ←→ Movements of non-breeding birds



0 10 20 30 40 km

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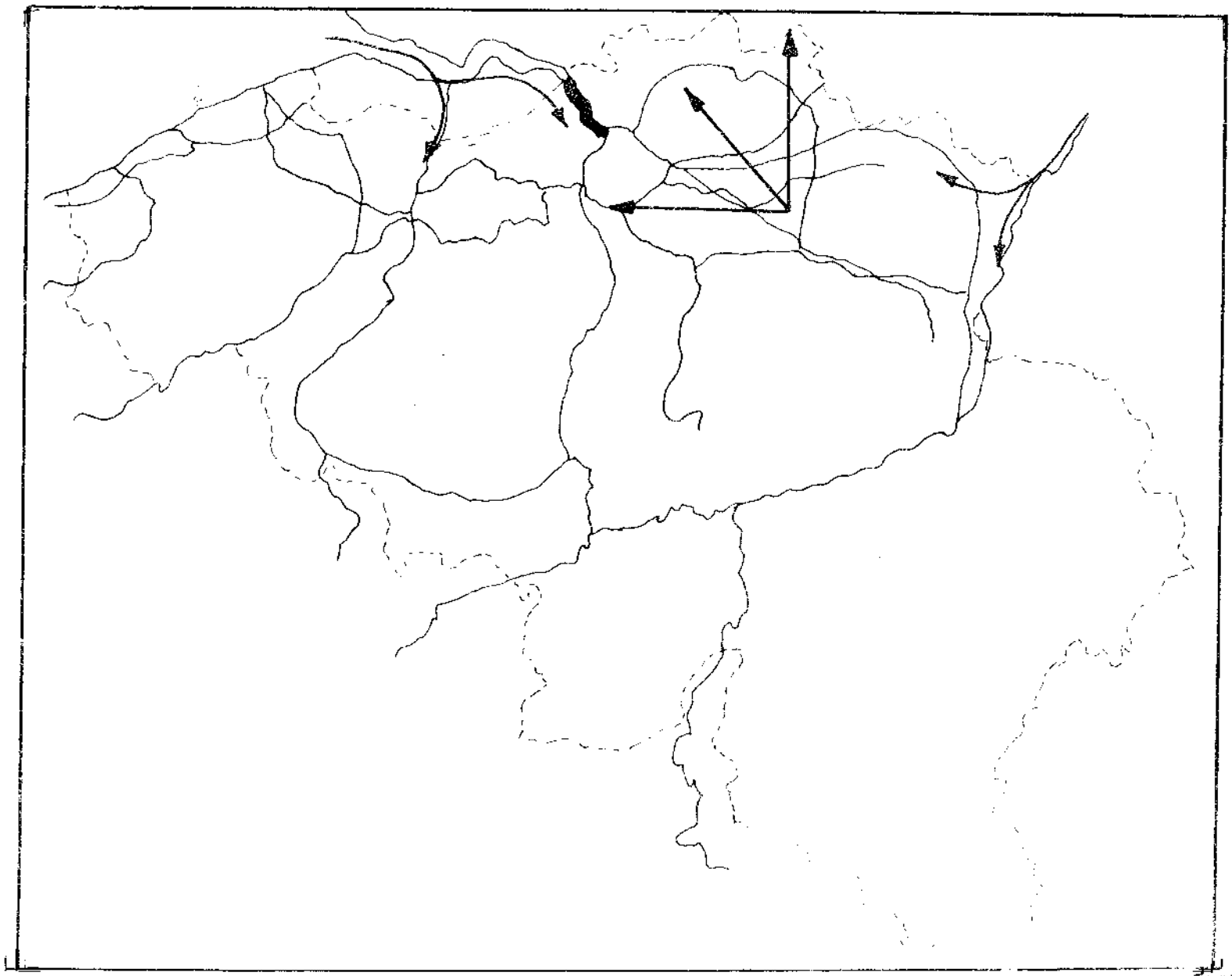
MAP 2 DISTRIBUTION : Larus ridibundus . July - October

Legend

- first post-breeding movements
- Arrival of Winter-birds
- Migration



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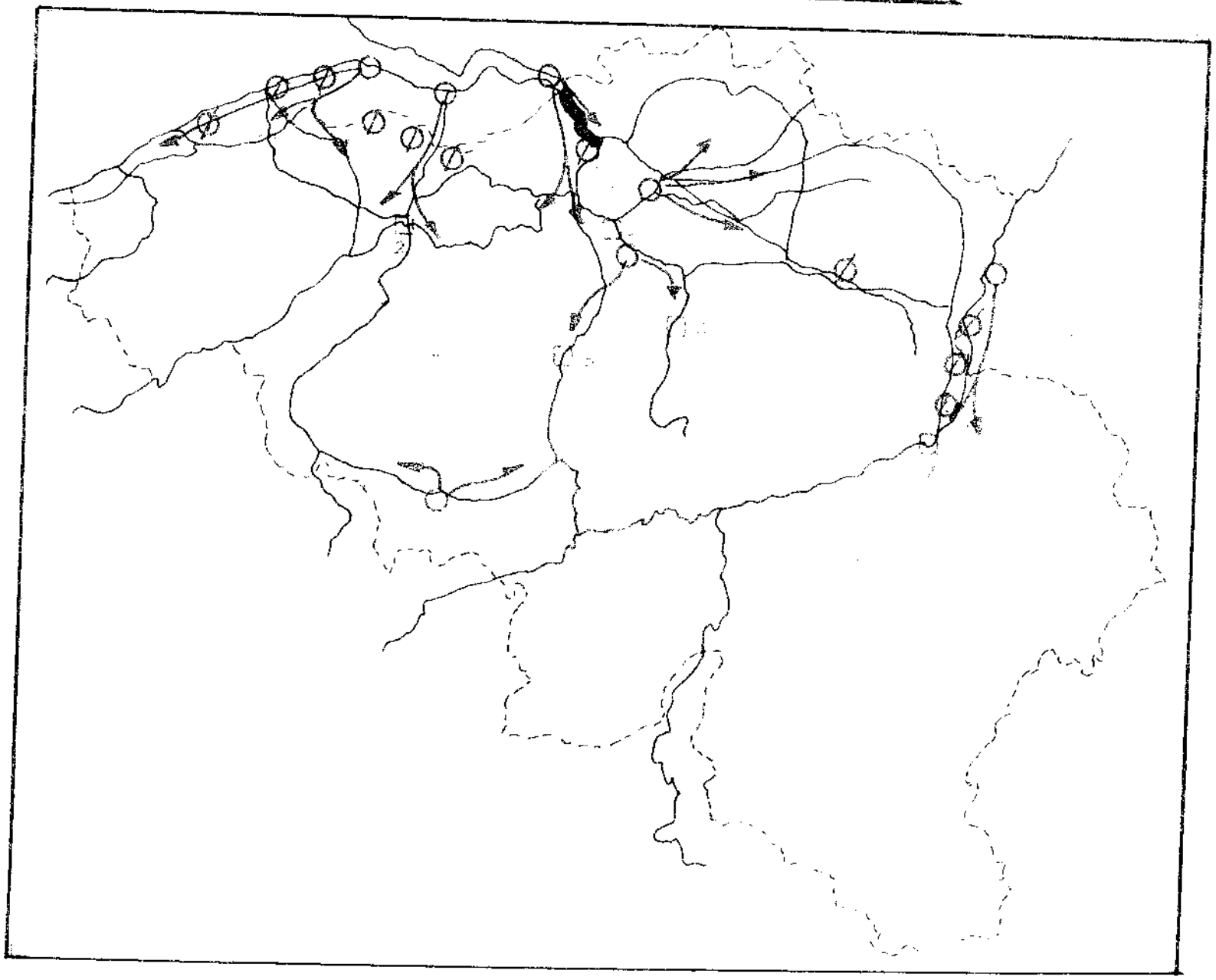
MAP 3 DISTRIBUTION : Larus ridibundus November-February

Legend

Winter movements

- Roosting place
- Irregular roosting place
- Towns visited
  - 1 Brugge
  - 2 Gent
  - 3 Antwerpen
  - 4 Mechelen
  - 5 Brussel
  - 6 Leuven
  - 7 Liège
- Routes



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MAP 4 DISTRIBUTION : Larus ridibundus March

Legend

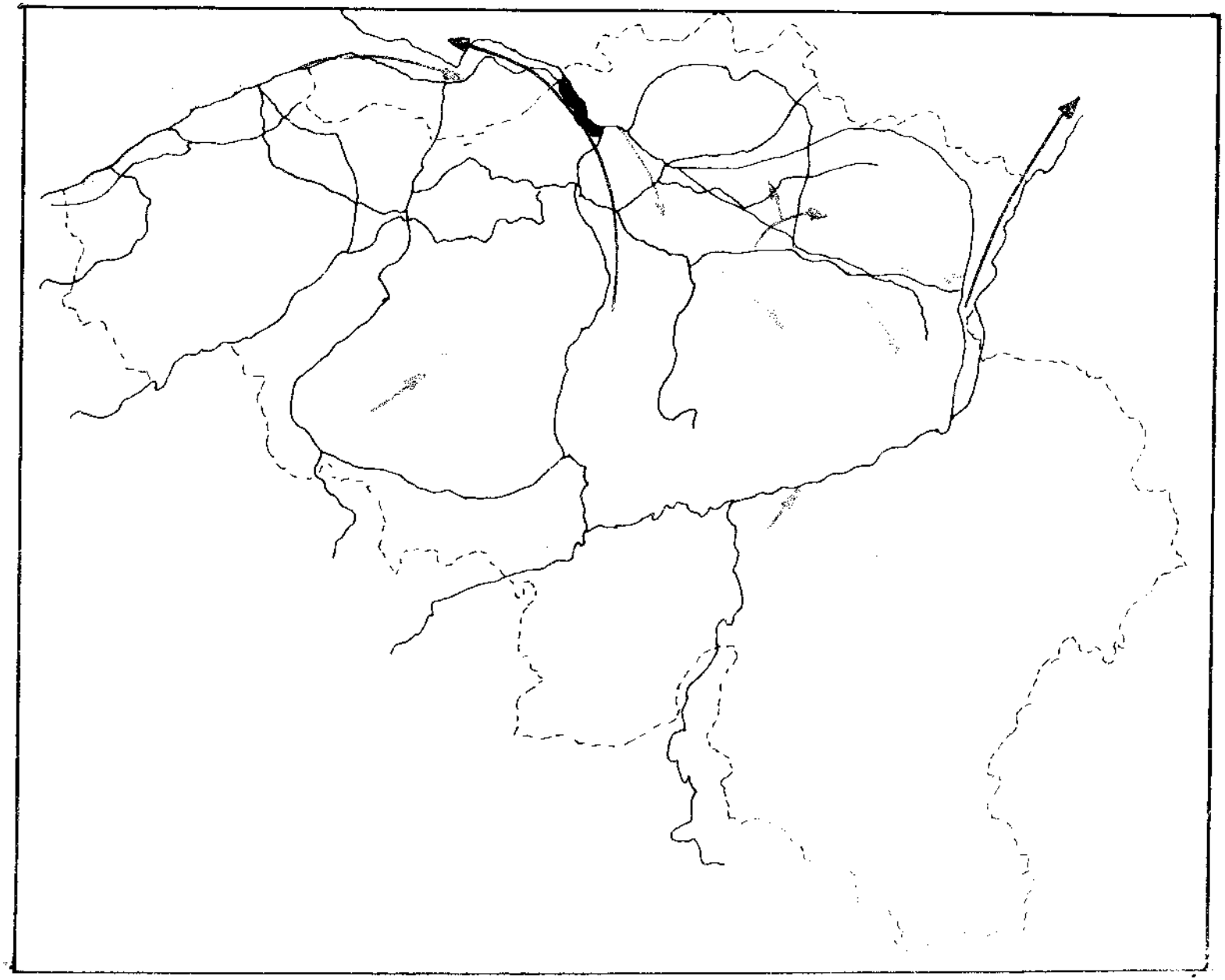
Prenuptial movements

Migration

Depart of winter birds

Arrival of breeding birds

Dispersion flights



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MAP 5 DISTRIBUTION : Larus ridibundus

Legend

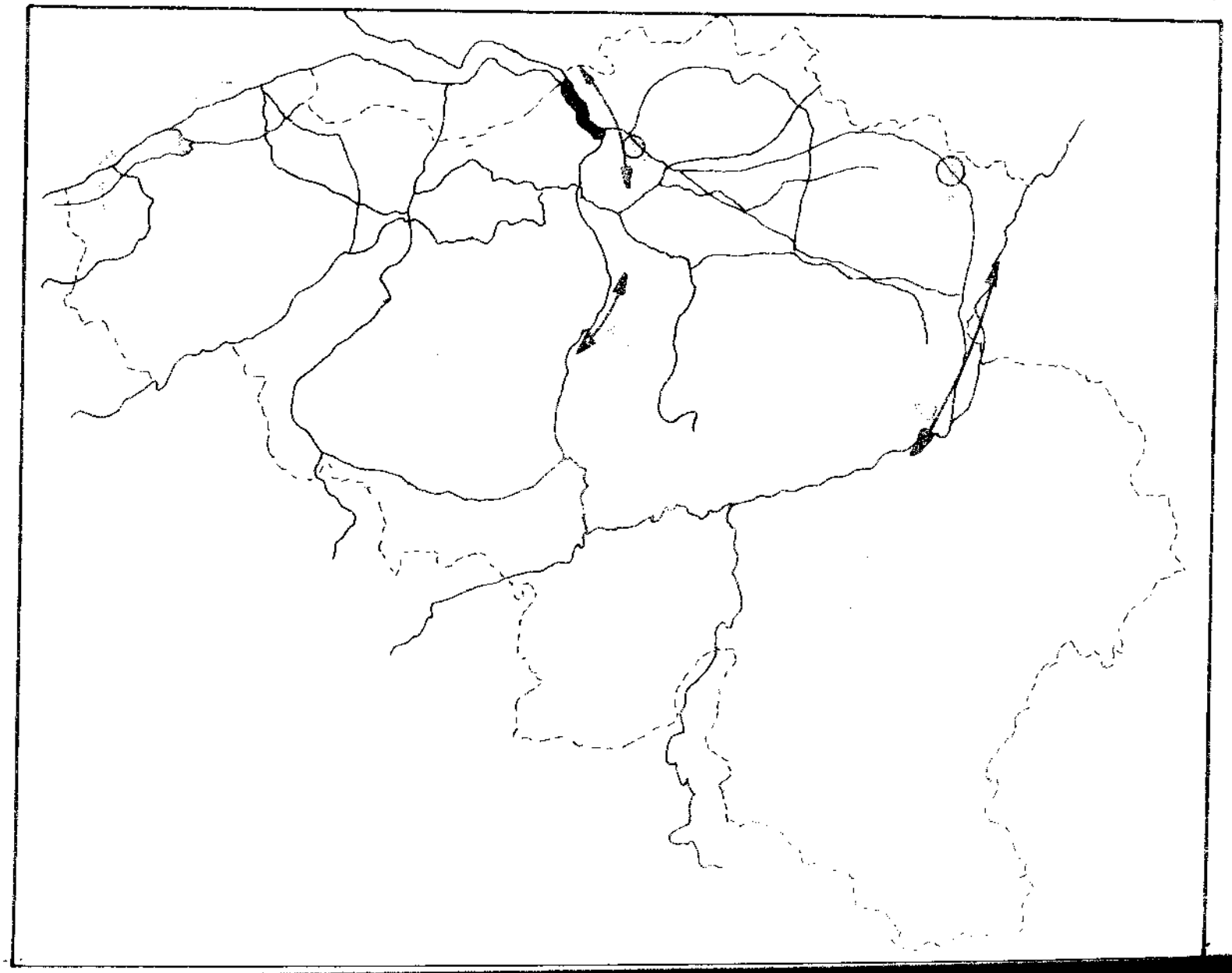
Airports

1 Koksijde
2 Oostende
3 Zaventem
4 Deurne
5 Bierset
6 Kleine-Brogel

Winter movements (see Map 3)

Summer occurence (see Map 1)

Movements all year round



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MAP 6

DISTRIBUTION: Larus ridibundus

Winter movements near National Airport.

Legend

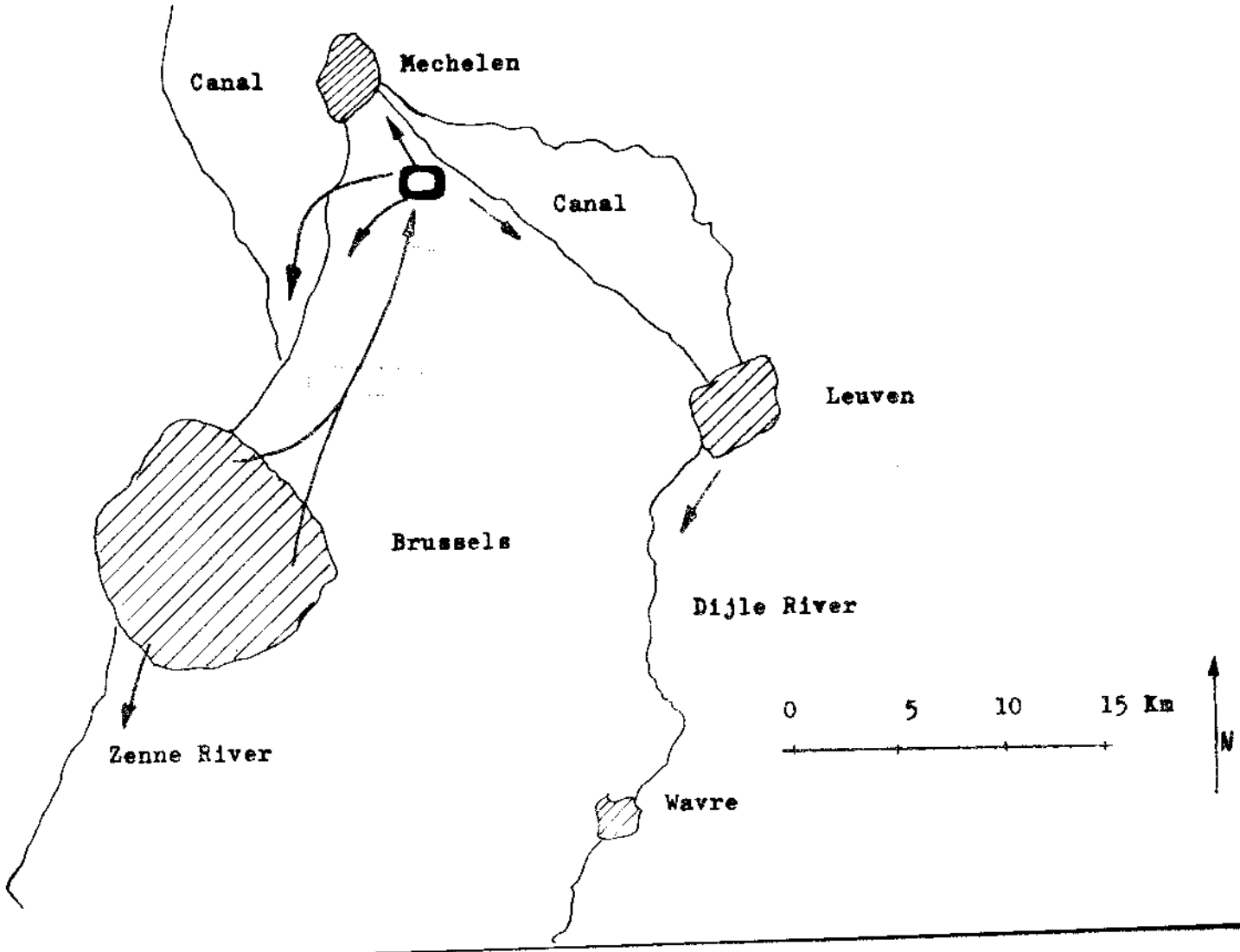
Roosting Place

Morning Flight

Agglomeration (feeding) zone

Evening flight

Brussel National Airport



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Short notes in :

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