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## Seabird observations in the southern Drake Passage and the Bransfield Strait (BIOMASS-FIBEX program- me) in February—March 1981

**ABSTRACT:** In the region under investigations 30 species of seabirds were observed. In the southern part of Drake Passage *Daption capense*, and *Oceanites oceanicus* predominated quantitatively. *Macronectes giganteus*, *M. halli* and *Pachyptila* spp. were subdominant. The vessel was often accompanied by *Diomedea exulans*. In the Bransfield Strait *Fulmarus glacialisoides*, *D. capense* and *O. oceanicus* were predominant. *M. giganteus* was subdominant. The estimated value of the biomass of seabirds was the highest in the region to the west of Elephant Island, slightly lower in the region of Anvers Island, Smith Island and Livingston Island, and the lowest in the south-eastern part of Bransfield Strait and the middle part of the investigated region of Drake Passage.

Key words: Antarctic, seabirds, distribution, FIBEX

### 1. Introduction

During the Antarctic cruise of the r/v "Profesor Siedlecki", which was a part of the research carried out within the First International Biological Experiment of Biomass Programme — FIBEX, all along with the collection of oceanobiological and oceanographical data (Rakusa-Suszczewski 1982) systematical observations of birds were carried out at sea. The purpose of this study is to present: species composition, distribution, relative abundance, and biomass of seabirds.

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## 2. Methods

The research area investigated by Polish scientists within the FIBEX Programme covered a part of Drake Passage extending south of 60°S to the Palmer Archipelago, the South Shetland Islands and Bransfield Strait between 56°W and 66°W. The route of the vessel during the investigations, i.e. from February 14<sup>th</sup> to March 28<sup>th</sup>, 1981, led from the north-west corner of that area athwart regular transections from north to south, traversing 1° from west to east in Drake Passage and from east to west in Bransfield Strait (Rakusa-Suszczewski 1982).

Observations were made according to the Seabird Mapping Scheme — instructions prepared by the International Survey of Antarctic Seabirds (ISAS) — using the SCAR standard 10-minute cards. Counts were made at nearly half an hour intervals during the day from the bridge or the upper deck (about 15–17 m above sea level). These observations were supplemented by irregular counts made at the stern. The 8×30 and 7×45 field glasses were used. For field identification of the avian species Field Guides prepared by Watson (1975) and Harper, Kinsky (1978) were generally used and by Judin (1964) in some cases. According to the ISAS recommendation the following records were made regularly: the ship's position taken from the satellite navigation system, the type of the ship activity, meteorological conditions, associations with other phenomena (especially the occurrence of krill swarms recorded by echogrammes) before, during and after each 10-min count, etc. Distance of birds from the vessel (0–300 m, 300–1000 m, and over 1000 m), type of their activity and their age if possible were also recorded.

In the research area altogether 520 observations were made. After rejecting the counts during which visibility was lower than 1 nM, for further analysis the following observations were used: 342 made during ship's steaming, 36 made during commercial trawls and bongo hauls, 69 taken from full oceanography stations and 44 from short hydrological stations (Fig. 1). The methods used in the observations may be a cause of a slight underestimation of the number of the rarely seen species and the birds not showing any interest in the vessel. Yet, these methods are very convenient for evaluation of the relative abundance and experimental estimation and comparison of the total biomass of birds observed at sea.

The analysis of the relative abundance of the most frequently seen species was based only on the observations made during ship's steaming. At that time the vessel moved at a regular speed of 8–9 knots and the hydro-acoustic survey was made continuously. In the calculations of the distribution of the rarely seen birds the observations made during all ship's activities were taken into consideration. For the comparison of the total biomass of birds recorded in different parts of the research area 10-min observations made daily at noon oceanography stations were used. In these stations lasting 2 hours, on the average, four 10-min observations were made. The highest number of birds of a given species observed at one time was taken for the calculation of the biomass. The mean body weights and the

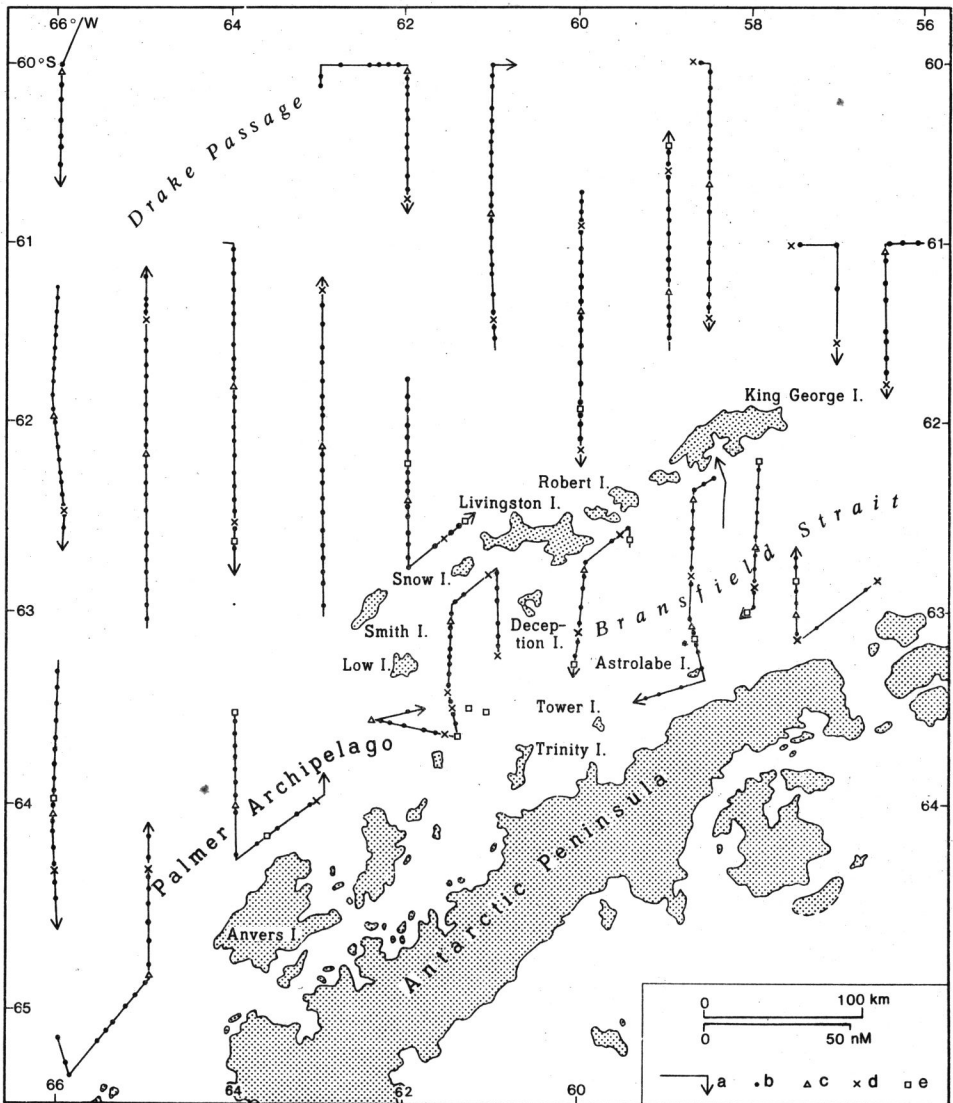


Fig. 1. Distribution of seabirds (10-minute observations)

a — ship's route, b — counts made during ship's steaming, c — observations made during full oceanographic stations, d — observations made during short oceanographic stations, e — observations made during commercial and Bongo hauls.

data on the belonging to different trophic guilds: planktivores, cephalopod feeders, piscivores and omnivores were adopted from unpublished data of the BIOMASS Working Party on Bird Ecology\*).

\*) Post-FIBEX Data Interpretation Workshop, Hamburg, FRG, 21. Sept. — 9 Oct. 1981 — Report of the BIOMASS Working Party on Bird Ecology — Circular to chief scientists of FIBEX cruises.

### 3. Results and discussion

Altogether 30 species were identified in the research area; 26 in Drake Passage and 19 in Bransfield Strait (Table I).

Table I  
Seabirds recorded in southern Drake Passage (February 1981) and Bransfield Strait (March 1981) from the board of r/v "Profesor Siedlecki")

	No. of records Average No. seen per 10 min.**)				
	Total*)	Ship's steaming counts	Total	Drake Passage	Bransfield Strait
<i>Pygoscelis</i> spp.	10	8	0.25	0.32	—
<i>Pygoscelis adeliae</i>	2	1	0.01	0.02	—
<i>Pygoscelis antarctica</i>	4	2	0.02	0.03	0.00
<i>Pygoscelis papua</i>	1	0	0.00	—	0.00
Great albatross spp.	10	10	0.06	0.08	0.01
<i>Diomedea exulans</i>		142	0.87	1.12	0.00
<i>Diomedea epomophora</i>		36	0.12	0.15	—
Mollymawk spp.	6	6	0.02	0.03	—
<i>Diomedea melanophris</i>		54	0.25	0.32	—
<i>Diomedea chrysostoma</i>		30	0.16	0.21	—
<i>Phoebastria palpebrata</i>	6	4	0.01	0.02	—
<i>Macronectes giganteus</i>		179	1.41	1.35	1.58
<i>Macronectes halli</i>		142	1.01	1.27	0.10
<i>Fulmarus glacialis</i>		48	1.87	0.15	7.57
<i>Thalassoica antarctica</i>	3	2	0.01	0.00	0.05
<i>Pagodroma nivea</i>	6	6	0.02	0.00	0.09
<i>Daption capense</i>		220	19.59	23.29	6.87
Prion spp.		42	0.30	0.38	—
<i>Pachyptila belcheri</i>	3	3	0.01	0.02	—
<i>Pachyptila desolata</i>	1	0	0.00	0.00	—
<i>Pachyptila turtur</i>	21	19	0.27	0.35	—
Shearwater spp.	2	2	0.02	0.03	—
<i>Pterodroma brevirostris</i>	1	0	0.00	0.00	—
<i>Pterodroma mollis</i>	15	15	0.10	0.12	—
<i>Procellaria aequinoctialis</i>	8	7	0.04	0.05	—
Storm petrel spp.	25	25	0.99	1.28	—
<i>Oceanites oceanicus</i>		274	8.13	8.75	6.87
<i>Fregetta tropica</i>	32	27	0.14	0.18	0.00
<i>Garrodia nereis</i>	1	1	0.01	0.01	—
<i>Phalacrocorax atriceps</i>	5	4	0.06	—	0.28
Skua spp.	5	5	0.03	0.04	0.01
<i>Catharacta maccormicki</i>	7	6	0.03	0.02	0.05
<i>Catharacta lonnbergi</i>	10	5	0.05	0.06	0.01
<i>Larus dominicanus</i>	14	10	0.08	0.00	0.35
<i>Sterna vittata</i>	21	14	0.08	0.06	0.17
<i>Sterna paradisaea</i>	2	0	0.00	—	0.00
<i>Chionis alba</i>	3	1	0.00	—	0.01

\*) — showed only for rarely seen species

\*\*) — ship's steaming counts only

The species composition of the birds recorded in the observations made during ship's steaming was similar to that from the observations made during trawling activities and in oceanography and hydrological stations. The number of the observed birds, especially of the species accompanying the vessel regularly (mainly *Oceanites oceanicus*, *Daption capense*, *Macronectes* spp. and sometimes albatrosses), increased usually in the subsequent counts made during trawling and station activities.

The largest aggregations of seabirds were observed:

- near Elephant Island, 4<sup>th</sup> Feb. 1981 — consisting almost entirely of *D. capense*, about 900 individuals; during several hours (six successive 10-min counts) they accompanied the vessel coming from the region where about 40 trawlers carried out commercial catches in a superswarm of krill (Fig. 2. — upper right corner of the map);
- to SE of Low Island, 12<sup>th</sup> March 1981 — flock of about 215 *D. capense* and 20 *Fulmarus glacioides* (Fig. 2); the birds were floating on the sea or flying around in groups of 50–70 individuals; before, during, and after the observation, large and dense swarms of krill were recorded from the echogrammes at the depth of 11–20 m (Kalinowski — personal communication);
- in the same region, 12<sup>th</sup> March 1981, about 10 nM to WNW from the former flock — another dense flock of about 500 *F. glacioides*, 10 *D. capense* and 3 *Pagodroma nivea* floated on the water in a compact group (Fig. 2).

During the observations the echosounding recorded small swarms of krill. The site of the flock assemblage was located on the slope of the shelf. In the course of a several-hundred-meters-long route of the vessel the depth of the sea increased from 284 m to about 600 m.

### Penguins

Infrequent observations of penguins (Fig. 3), despite the existence of large breeding colonies on the South Shetland Islands, may be explained by the difficulties in detecting penguins in the water while feeding (they could be noticed no nearer than at a distance of 300–400 m).

#### Snow petrel (*Pagodroma nivea*)

Was seen rarely, mainly single, in the southern part of the research area (Fig. 3).

### Prions

This group is presented in Fig. 3 conjointly, since in general we were not able to identify the different species for certain. *Pachyptila turtur* was identified 19 times (for the most part at 64°W), *P. belcheri* — 3 times in the area between 61°S–62°S, and 65°W–66°W, *P. desolata* — only once at the spot 61°50'S, 66°03'W, and *Halobaena caerulea* — not even once, yet, this species was seen several times in the region between 50°S–55°S (Drake Passage) during the cruise to and from the research area.

#### Cape pigeon (*Daption capense*)

This species occurred for the most part in groups of several individuals accompanying the vessel, mainly astern, during several minutes up to several hours. It occurred much less frequently in the north-west part of Drake

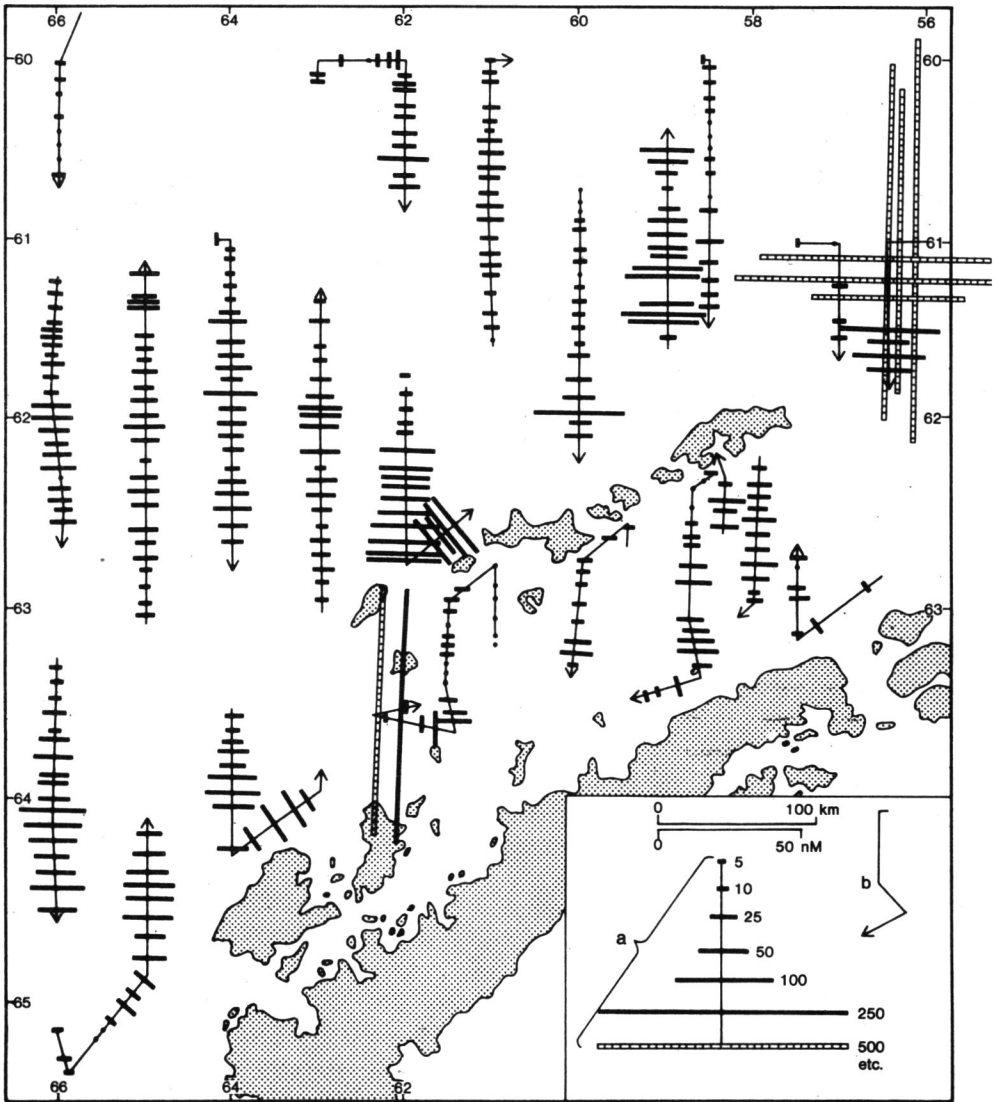


Fig. 2. Abundance of seabirds in counts made during ship's steaming  
 a — number of birds seen per 10 minutes, b — ship's route. Other explanations as in Fig. 1.

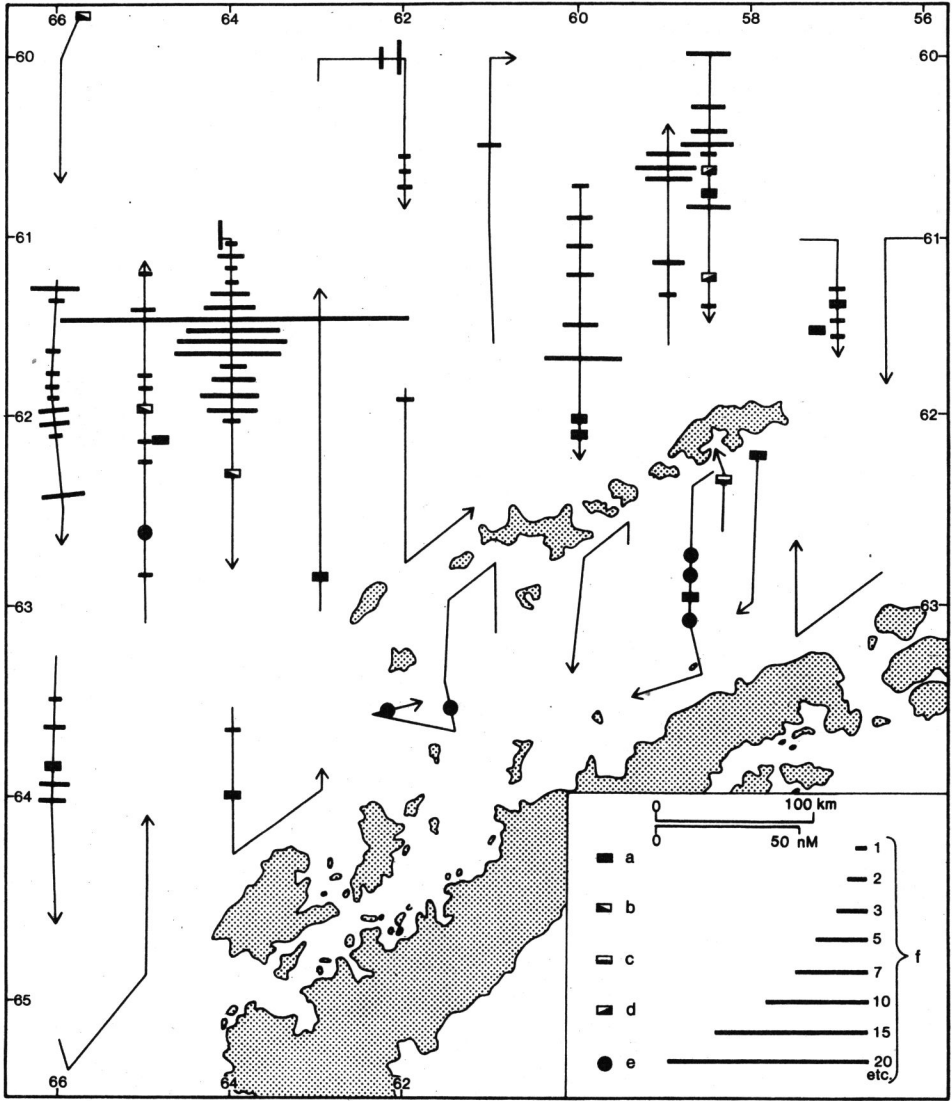


Fig. 3. Distribution of pygoscelid penguins, and snow petrels and abundance of prions a — *Pygoscelis* spp., b — *P. antarctica*, c — *P. papua*, d — *P. adeliae*, e — *Pagodroma nivea*, f — number of prions seen per 10 minutes. Presentation as in Fig. 2.

Passage and east part of Bransfield Strait than in the other parts of the research (Fig. 4). The largest, earlier described, groups of this species were observed near Elephant Island.

Southern fulmar (*Fulmarus glacialisoides*)

This species was seen mostly in small groups, rarely accompanying the vessel for a longer time than several minutes. In the region of Drake Passage it was seen infrequently and never farther from the shores than 80 nM.

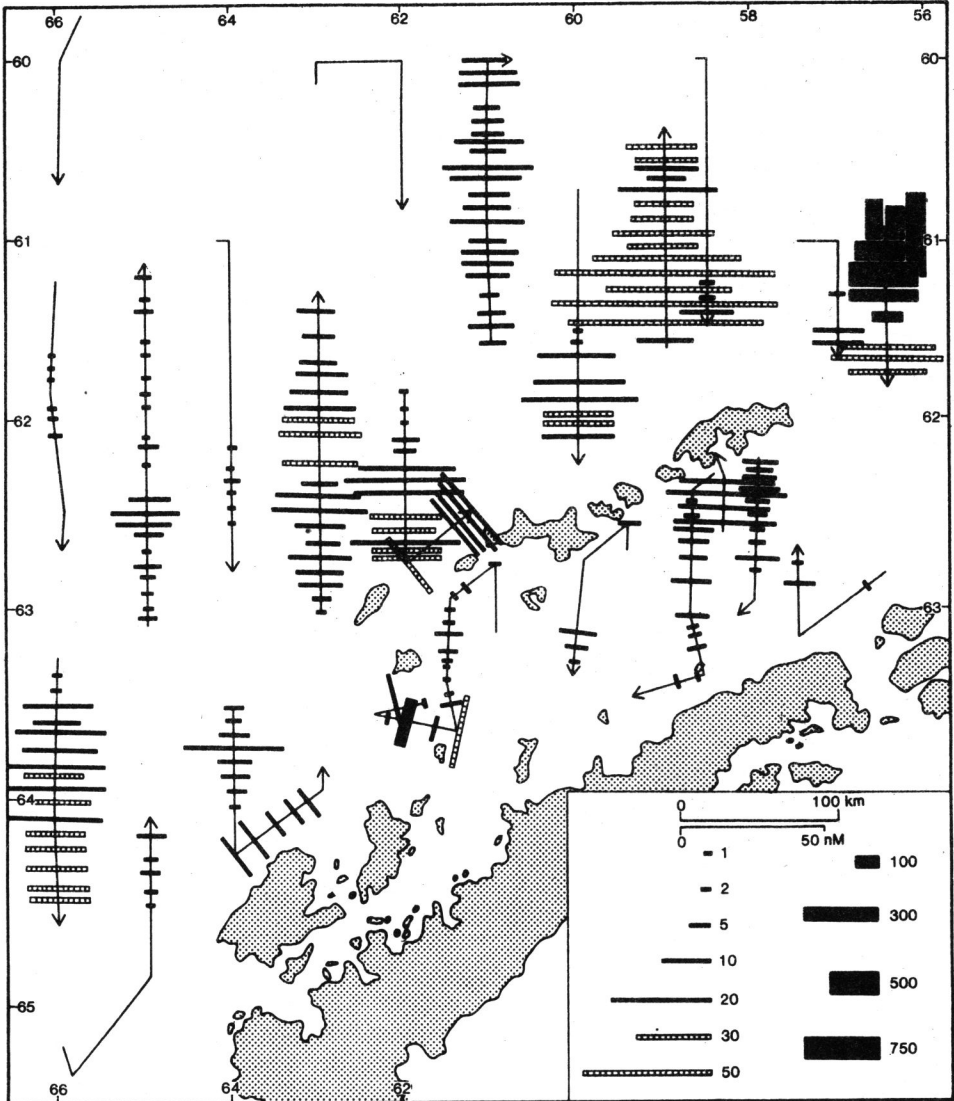


Fig. 4. Abundance of *Daption capense*  
Presentation as in Figs. 2 and 3.



(Fig. 5). The largest aggregation of this species was observed in the earlier described region of Bransfield Strait. It looked rather like an autumnal grouping of the birds preparing for migration than an ordinary flock feeding intensively.

Storm petrels

In this group *Oceanites oceanicus* was decidedly predominant, but in the flock of this species individuals of *Fregetta tropica* and *Garrodia nereis* were also observed. In 25 of the total number of 299 records of storm

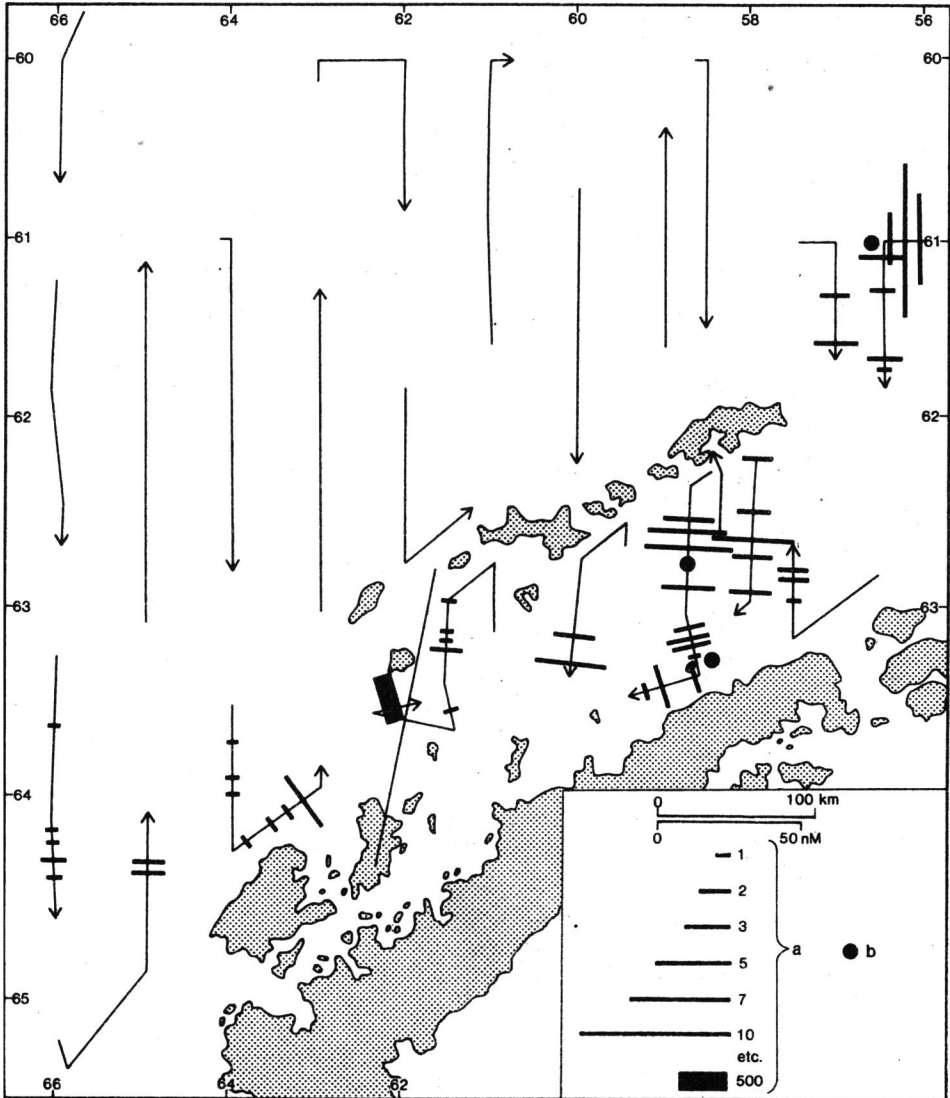


Fig. 5. Abundance of *Fulmarus glacialisoides* (a) and distribution of records of *Thalassoica antarctica* (b)

Presentation as in Figs. 2 and 3.

petrels we were not able to identify for sure to which species all the observed individuals belong (in most cases due to unfavourable weather conditions and impossibility to inspect closely a bird in a large flock). *F. tropica* was observed mainly in the region of Drake Passage at a distance of several score up to several hundred nM away from the shores and was seen only once in Bransfield Strait. (Fig. 6).

Great albatrosses

In 5% of the observations we were not able to distinguish *Diomedea*

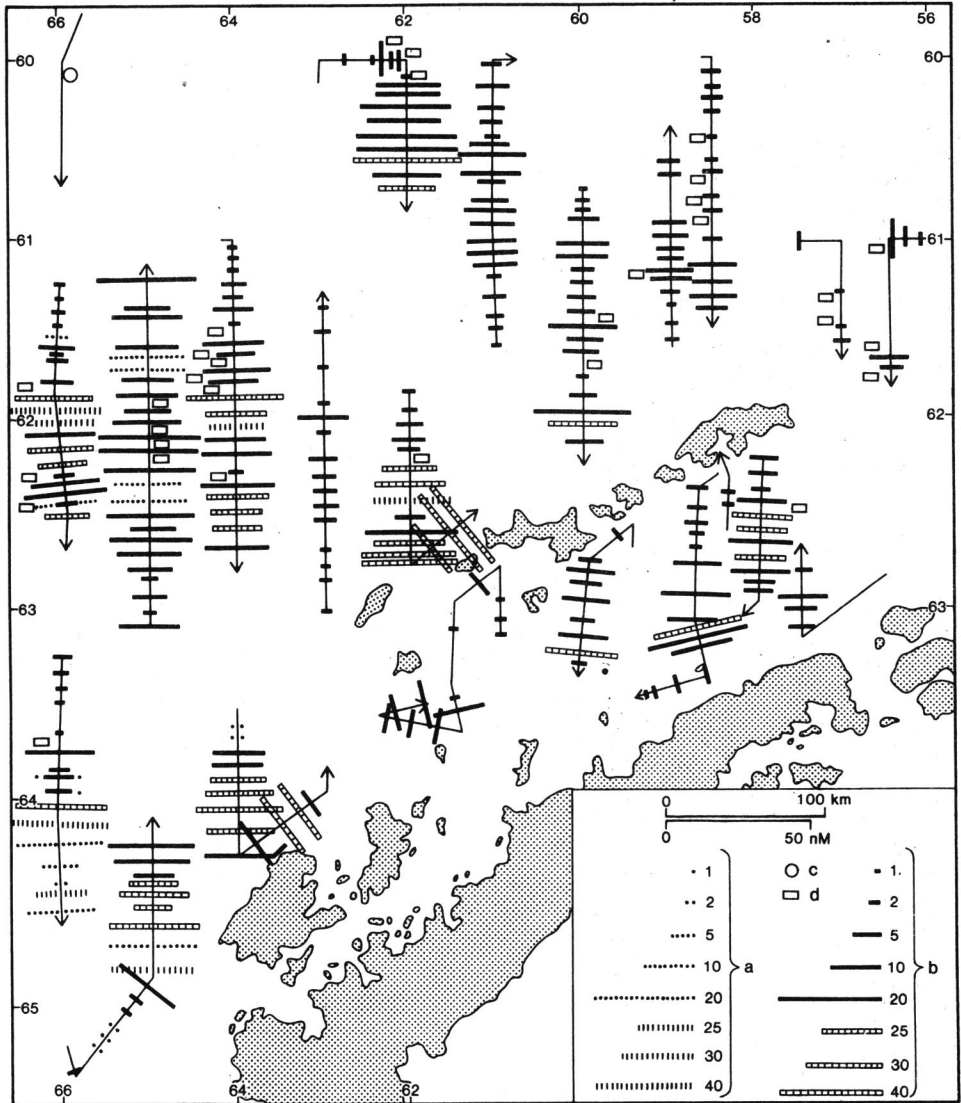


Fig. 6. Distribution and abundance of storm petrels  
 a — *Oceanitidae* gen. sp., b — *Oceanites oceanicus*, c — *Garrodia nereis*, d — *Fregetta tropica*.  
 Presentation as in Figs 2 and 3.

*exulans* from *D. epomophora* (especially as regards adult individuals). Both species accompanied the vessel frequently in Drake Passage, however, *D. epomophora* occurred much less often and in general was represented by a single individuals, whereas *D. exulans* by groups consisting 2–4 individuals. In total *D. exulans* was about sevenfold more numerous than *D. epomophora* (Fig. 7). Among *D. exulans*, the age of which was distinguished ( $n = 121$ ), 16.5% of individuals were subadult and 83.5% — adult.

#### Light mantled sooty albatross (*Phoebetria palpebrata*)

This species was seen rarely, most single, at a distance of at least 40 nM north of the shores of the South Shetland Islands (Fig. 7).

#### Mollymawks

They were less frequently seen than *D. exulans* and accompanied the vessel usually for a shorter time. In about 7% of the total number of records it was not possible to identify all the species, for certain. *D. melanophris* and *D. chrysostoma* were observed almost exclusively in Drake Passage (Fig. 8).

#### Soft plumaged petrel (*Pterodroma mollis*)

This species was seen infrequently, only in the north part of the research area, between 60°S and 61°S (Fig. 8).

#### White-chinned petrel (*Procellaria aequinoctialis*)

A rare species, seen in the same regions as *P. mollis* (Fig. 8).

#### Giant petrels

Birds of genus *Macronectes* often accompanied the vessel a long time even for several hours. Very seldom more than 10 individuals were noticed during any of the 10-min observations, usually 2–5 individuals were present near the vessel at the same time. In Drake Passage *M. halli* were slightly more numerous, while in Bransfield Strait *M. giganteus* was predominant, almost exclusively (Fig. 9). Individuals with white plumage averaged 1.3% of the observed population of *M. giganteus*.

#### Skuas

We had some difficulties in distinguishing *Catharacta maccormicki* from *C. lonnbergi* at sea, since these species were not interested in the vessel and flew by at a great distance from her. Most of them were seen near Anvers Island (Fig. 9).

#### American sheathbill (*Chionis alba*).

Single individuals were observed only in Bransfield Strait (Fig. 1).

#### Terns

*Sterna vittata* and *S. paradisaea* were seen mostly in groups of 2–4 individuals. They accompanied the vessel usually not longer than several minutes (Fig. 10).

#### Black-backed gull (*Larus dominicanus*)

Among the birds recorded at the southern shores of the South Shetland Islands ( $n = 23$ ) 35% of individuals were adult, 39% subadult and 26% juvenile (Fig. 10).

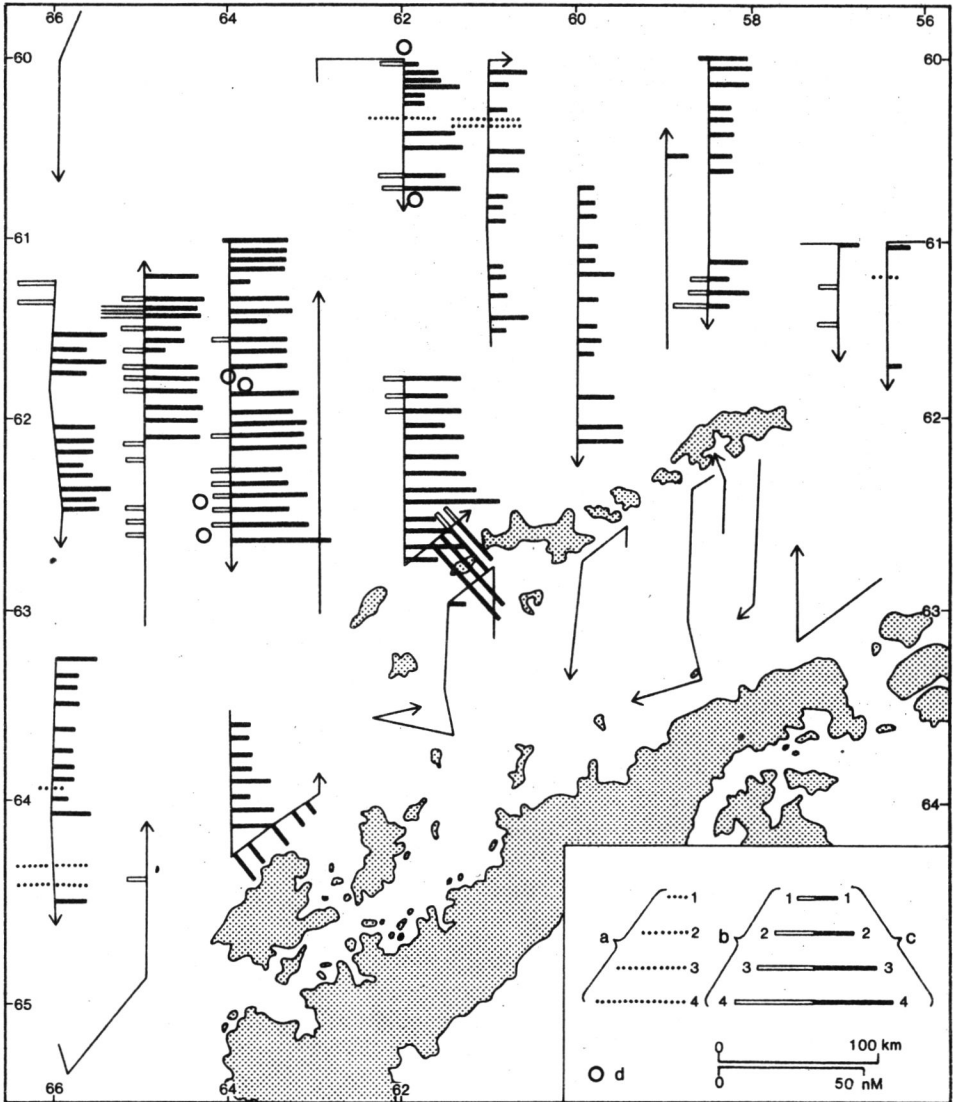


Fig. 7. Abundance of great albatrosses and distribution of records of light-mantled sooty albatross (*Phoebastria palpebrata*)

NOTE: Differing from Figs. 2–6 the abundance of two species is marked on the map, therefore bars denoting abundance begin at the point of observation and do not run across it as it is in the precedent figures. a — Great albatross spp., b — *Diomedea epomophora*, c — *D. exulans*, and *P. palpebrata*.

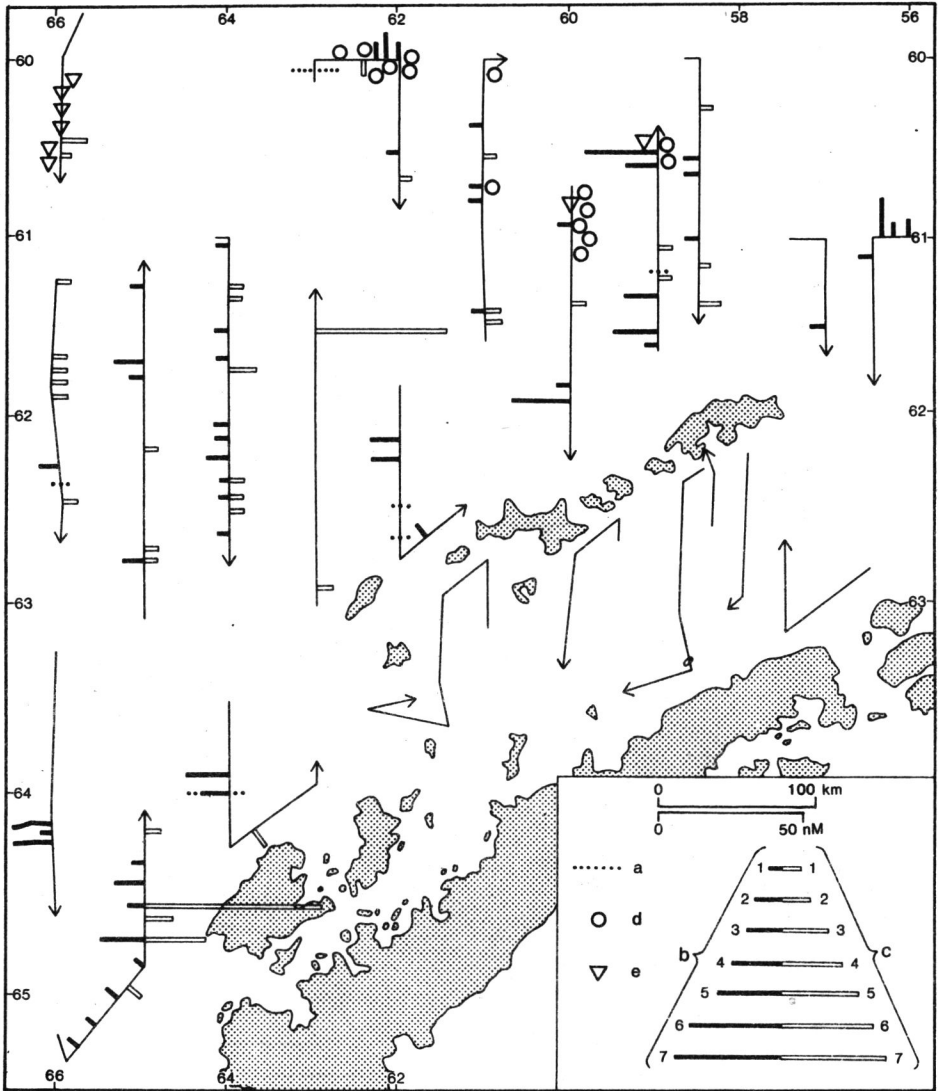


Fig. 8. Abundance of mollymawks and distribution of records of soft-plumaged petrel (*Pterodroma mollis*) and white-chinned petrel (*Procellaria aequinoctialis*)  
 a — mollymawk spp., b — *Diomedea melanophris*, c — *D. chrysostoma*, d — *Pterodroma mollis*,  
 e — *Procellaria aequinoctialis*. Presentation as in Fig. 7.

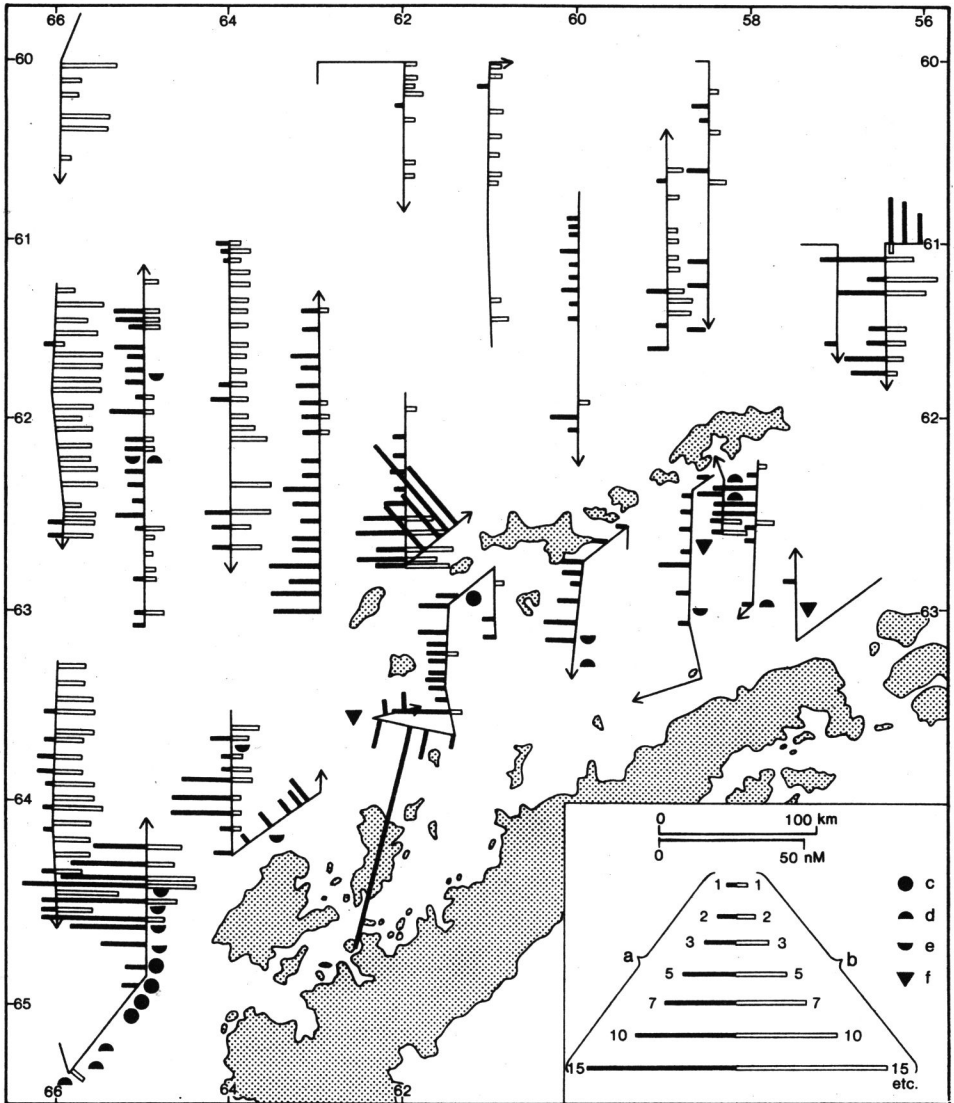


Fig. 9. Abundance of *Macronectes giganteus* (a) and *M. halli* (b) and distribution of records of *Catharacta* spp. (c), *C. maccormicki* (d), *C. lonnbergi* (e) and *Chionis alba* (f) Presentation as in Fig. 7.

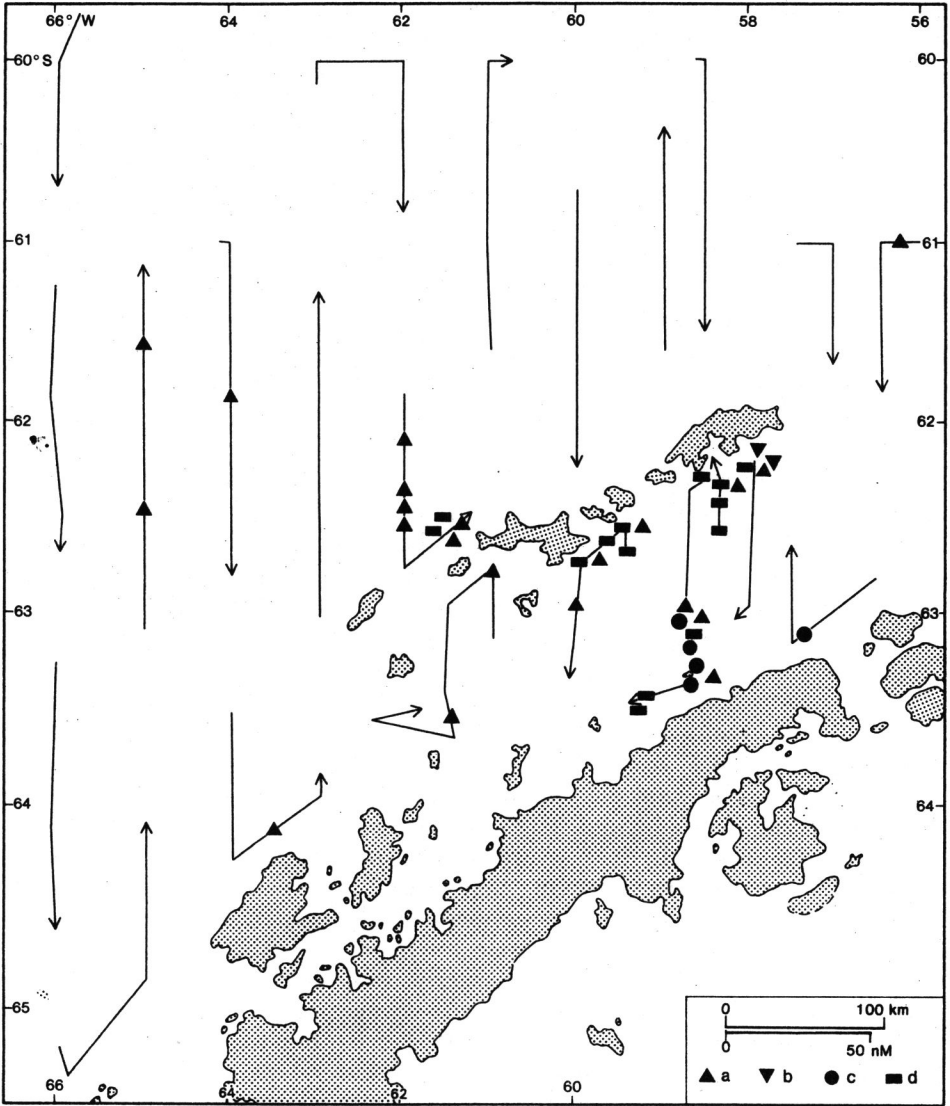


Fig. 10. Distribution of records of piscivores  
 a — Antarctic tern (*Sterna vittata*), b — Arctic tern (*S. paradisaea*), c — southern black-backed gull (*Larus dominicanus*), d — blue eyed shag (*Phalacrocorax atriceps*)

### Blue-eyed shag (*Phalacrocorax atriceps*)

Individuals observed near the shores of Antarctic Peninsula were mostly juvenile birds (86% of all the birds recorded).

The observed species composition of the avifauna in the investigated area confirms the hitherto published data from shipboard observations collected by other authors (Brown et al. 1975, Tickell 1976, Torres 1982). In this study there are no records of *Halobaena caerulea*, *Pterodroma incerta*, *P. brevirostris*, and *Puffinus griseus* in the research area, but there are some new records of the seabirds in that region: *Garrodia nereis*, *Pterodroma mollis* and *Procellaria aequinoctialis*. According to Brown et al. (1975) *H. caerulea* is scarce south of the Antarctic Convergence, *P. incerta* was seen only once at the point 60°29'S, 63°44'W, and *P. griseus* was only occasionally found south of 57°S. Lathbury (1972a) saw *P. brevirostris* "in southern Drake Passage". Tickell and Woods (1972) described the most southerly sighting of *H. caerulea* at the point 59°32'S and 58°03'W. North of the Antarctic Convergence this species occurred sometimes in company of *Pachyptila* spp., but was markedly less numerous. *G. nereis* was seen only once at the point 48°01'S, 57°06'W (5<sup>th</sup> April 1972 — Brown et al. 1975). Tickell and Woods (1972) saw penguins only within 50 nM off the breeding grounds, whereas we have seen them within 100 nM off the land and at the farthest 220 nM from the South Shetland Islands.

There are also some differences in the estimated abundance of some of the seabird species. Lathbury (1972b) found both *Pagodroma nivea* and *Thalassoica antarctica* rather commoner in early 1970, whereas we have observed birds belonging to these species only a few times and mostly single. According to Brown et al. (1975) *Fregetta tropica* was the most southerly storm petrel and fairly common in Drake Passage. In our observations the most common and most southerly was *O. oceanicus*, about 10 times more frequent than *F. tropica*, but we may have misidentified the two species so we have to be cautious about these data. *Diomedea epomophora* is throughout the world about half as numerous as *D. exulans* (Tickell 1968), in our research area it was much more scarce and was present mostly in the western part of that area. Tickell (1976) referred to Kinnear's observations of large numbers of *D. melanophris* and *D. chrysostoma* near Anvers Island and Kinnear's hypothesis about the relationship of this occurrence with strong northeasterly winds, blowing in Drake Passage at that time. The weather during our voyage in the southwest part of Drake Passage was rather calm (wind SW 4–5 B), but we have also observed frequently a few *D. melanophoris* and up to several *D. chrysostoma* during most of the 10-min observations near Anvers Island. *D. chrysostoma* observed in this region, contrary to the individuals of this species seen in the northern part of Drake Passage, occurred mostly in dense flocks and took no interest in the vessel. We have not seen any mollymawks in Bransfield Strait. Just as Brown et al. (1975) we have observed terns near the shores but we have recorded some *S. vittata* about 100 nM away from the land. In our observations terns always occurred in small groups, yet, Torres (1982) saw on 21<sup>st</sup> Feb. 1981 a group of 35 individuals of *Sterna* spp. about 20 nM north of Livingston Island.



Only one ringed bird was recorded during our research. It was a subadult *D. exulans* with orange stain on its breast and a light-green ring No. 904 on its right leg (perhaps from South Georgia). This bird accompanied the ship from 19 Feb., 2200 G.M.T. (62°35'S, 63°53'W) until 20 Feb., 1800 G.M.T. (64°14'S, 64°02'W).

The authors assumed that the vessel had the same effect on the birds during analogous, as regards duration and performed activities, noon

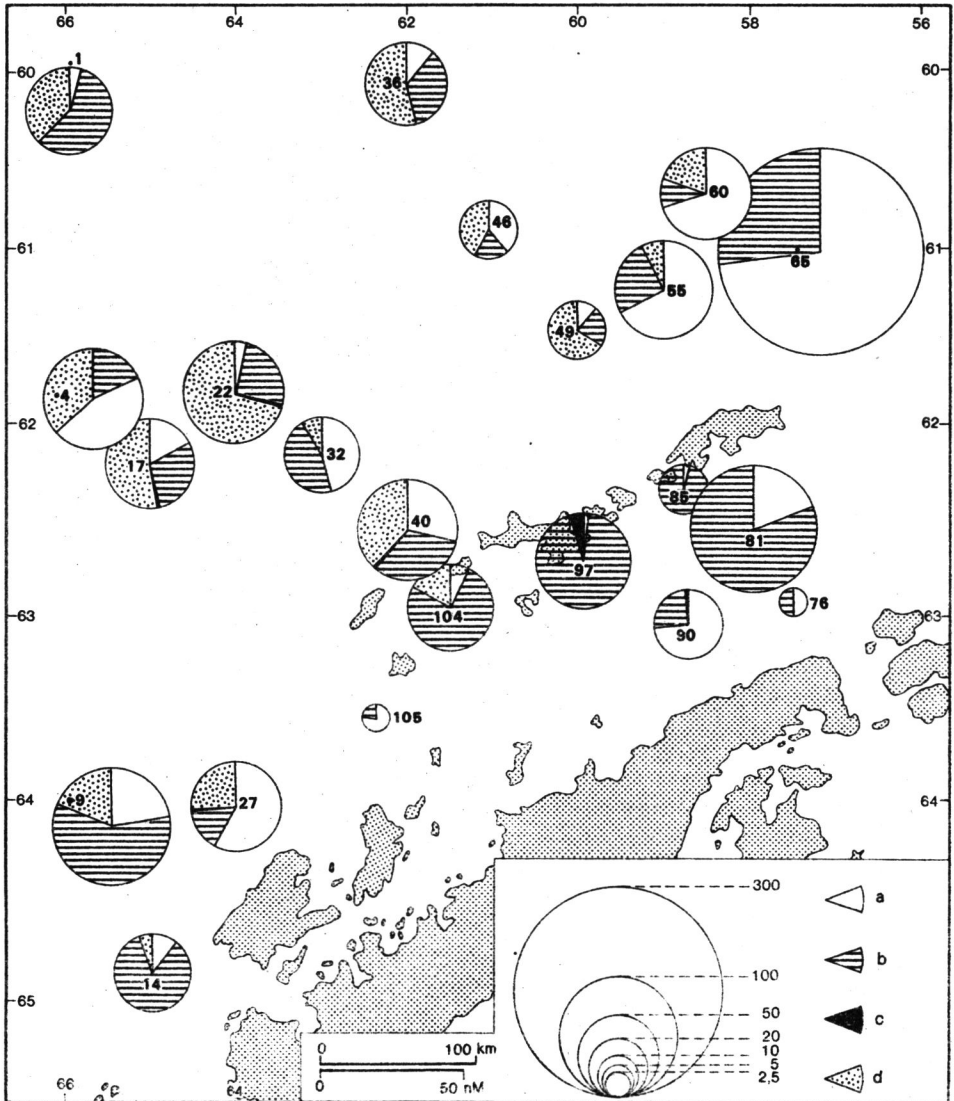


Fig. 11. The calculated biomass of birds from each of four trophic guilds observed at full oceanography stations  
 Numbers denote biomass (kg), a — plankton/krill feeders, b — omnivores, c — piscivores, d — cephalopod feeders.

oceanography stations. Although this assumption did not give the possibility to evaluate the actual biomass of the birds occurring in the investigated area, but it allowed to undertake the task of making a comparison of different parts of this area, in a relative scale (Fig. 11). To estimate the actual biomass of the birds at sea the differences in the behaviour of particular species towards the vessel at a standstill must be included in the form of corrections in the presented map. Albatrosses belonging to the trophic guild "cephalopod feeders" and *Macronectes* spp. belonging to omnivores accompanied the vessel much more frequently than other species, therefore their share in the total biomass of the birds feeding at sea, shown on the map, is slightly overestimated in relation to the reality. After taking these corrections into consideration it is possible to make a supposition that in the summer 1981 the biomass of seabirds in the investigated region was the highest in the area west of Elephant Island, slightly lower in the area of Anvers Island, Smith Island and Livingston Island, and the lowest in the south-east part of Bransfield Strait and the middle part of the investigated region of Drake Passage. As regards the biomass of the birds in the research area: in the north-west part — cephalopod feeders and omnivores were predominant, in the north-east part — plankton/krill feeders, in the south-west part — omnivores and plankton/krill feeders, in the northern part of Bransfield Strait — omnivores and in the south part of Bransfield Strait — plankton/krill feeders.

#### 4. Резюме

Во время антарктического рейса на НИС "Профессор Седлецки" в районе исследований, выделенном Польше согласно международной программе БИОМАСС-ФИБЭКС, было проведено 520 стандартных десятиминутных наблюдений морских птиц. Наблюдения-подсчеты птиц проводились днем с получасовыми интервалами. Было определено 30 видов птиц на юг от 60°С; 26 — в проливе Дрейка и 19 в проливе Брансфилда (таблица 1). Самые высокие скопления птиц были обнаружены в районе острова Элефант, где заметные группировки, насчитывающие несколько сот, главным образом *Daption capense*, сопровождали сорок травлеров, проводивших промысловые ловы криля (рис. 2 и 4). Значительное количество птиц наблюдалось тоже в юго-восточной части пролива Брансфилда, где стаи нескольких сот особей *Fulmarus glacialisoides* и *D. capense* создавали вероятно скопления предшествующие осенним миграциям (рис. 2, 4 и 5). Пингвины встречались редко, что связано с характером десятиминутных наблюдений с палубы судна. В общем, в проливе Дрейка *D. capense* и *Oceanites oceanicus* (рис. 6) оказались доминантами с точки зрения численности, а *Macronectes giganteus*, *M. halli* и *Pachyptila* spp. — субдоминантами. *Diomedea exulans* очень часто (рис. 7), а *D. melanophris* реже (рис. 8) сопутствовали судну. В проливе Брансфилда численными доминантами оказались: *F. glacialisoides*, *D. capense* и *O. oceanicus*, а субдоминантом — *M. giganteus* (рис. 9). Общее число птиц в проливе Брансфилда было ниже, чем в проливе Дрейка. Оцененная общая самая большая биомасса морских птиц была в районе к западу от острова Элефант, несколько меньше — вблизи островов Анверс, Шмидт и Ливингстон, а самая низкая в юго-восточной части пролива Брансфилда и в середине исследованного района пролива Дрейка (рис. 11).

## 5. Streszczenie

W czasie antarktycznego rejsu na r/v "Profesor Siedlecki" na przydzielonym Polsce w ramach międzynarodowego programu BIOMASS-FIBEX poligonie badawczym wykonano 520 standardowych 10-minutowych obserwacji ptaków na morzu (rys. 1). Liczenia robiono przeciętnie co pół godziny w porze dziennej. Na południe od 60°S stwierdzono występowanie 30 gatunków ptaków; 26 w Cieśninie Drake'a i 19 w Cieśninie Bransfielda (tabela I). Największe ilości ptaków spotkano w pobliżu wyspy Elephant, gdzie towarzyszyły one około 40 trawlerom łowiącym przemysłowo kryla (kilkaset osobników, głównie *Daption capense* — rys. 2 i 4). Znaczne ilości ptaków obserwowano również w południowo-wschodniej części Cieśniny Bransfielda (kilkusetosobnikowe stada *Fulmarus glacialisoides* i *D. capense* — przypuszczalnie zgrupowania poprzedzające jesienne migracje — rys. 2, 4 i 5). Pingwiny obserwowano rzadko, co wiąże się ze specyfiką 10-minutowych obserwacji ze statku (rys. 3). Ogółem w obserwacjach z Cieśniny Drake'a dominowały: *D. capense* i *Oceanites oceanicus* (rys. 6), a subdominantami były: *Macronectes giganteus*, *M. halli* i *Pachyptila* spp. Statkowi towarzyszyły często *Diomedea exulans* (rys. 7), a rzadziej *D. melanophris* (rys. 8). W Cieśninie Bransfielda ilościowo dominowały *F. glacialisoides* i *D. capense* i *O. oceanicus*, a subdominantem był *M. giganteus* (rys. 9). Ogólna liczba obserwowanych ptaków w Cieśninie Bransfielda była mniejsza niż w Cieśninie Drake'a. Oszacowana biomasa ptaków morskich była największa w rejonie na zachód od Wyspy Elephant, nieco mniejsza w rejonie wysp Anvers, Smith i Livingston, a najmniejsza w południowo-wschodniej części Cieśniny Bransfielda oraz w środkowej części badanego obszaru Cieśniny Drake'a (rys. 11).

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