

Cumaceans from the Bellingshausen Sea and neighbouring waters

Corbera, J.¹ & Ramos, A.²

¹ Gran 90, Argentona, ES, corbera@sct.ictnet.es

² Instituto Español de Oceanografía, Málaga, ES, bentart@ma.ieo.es

Introduction

Peracarids (amphipods, isopods, mysids, cumaceans and tanaids) are together with copepods and euphausiids the most successful group of crustaceans in Antarctic waters. Although cumaceans do not show the diversity observed in amphipods and isopods, they have a high level of endemism (up to 91%). Antarctic cumaceans have been studied since the earlier expeditions, however the fauna of some areas (including East Antarctica and Bellingshausen Sea) is still poorly known.

Results

During BENTART-03 cruise, 19 stations ranging from 87 to 2086 m depth were sampled using a modified version of the Macer-GIROQ sled. This gear was equipped with an opening-closing system and with three superposed nets 0.5 mm mesh size that sampled in three water layers: 10-50 cm, 55-95 cm and 100-140 cm above the sea floor. The stations were located in Bellingshausen Sea and neighbouring waters (Thurston Island, Peter I Island and W Antarctic Peninsula). Additional data were obtained from box-corer samples.

A total of 106 specimens belonging to 16 species of five families were collected in 13 of 19 stations sampled with the suprabenthic sledge and in six box-corer samples (Table 1). *Cumella australis*, *Vaunthompsonia laevifrons/inermis* and *Eudorella gracilior* showed the highest abundances (22, 19 and 13 specimens respectively) and *Vaunthompsonia laevifrons/inermis* was the most frequently collected species (in four sledge and two box-corer samples). Cumaceans showed a clear vertical distribution gradient with a decrease in abundance from 10-50 cm (75%) to the 100-140 cm water layers (6%), and 8 species were only collected in the nearest bottom water layer (10-50 cm).

Three species, *Cumella australis*, *Vaunthompsonia laevifrons* and *Campylaspis* sp. A, were only collected at stations shallower than 400 m, and the rest of species were only collected on deeper bottoms.

Discussion

The sampling with the suprabenthic sledge provided a low number of cumaceans. However, the number of species (16) was comparatively high. Cumaceans found during the BENTART-03 cruise show different biogeographic patterns (Figure 1). Two species are widely distributed: *Hemilamprops pellucidus* has been recorded from South Africa, Australia and New Zealand, and *Campylaspis quadriplicata* from High Antarctic and Subantarctic waters including the Magellan region. *Cyclaspis gigas*, *Cumella australis*, *Leucon antarcticus* and *Eudorella gracilior* are circumpolar species also recorded from Subantarctic Islands of the Scotia Arc. Other three species, *Diastylis anderssoni*, *Diastylis mawsoni*, *Leptostylis crassicauda* and *Vaunthompsonia laevifrons/inermis* show a similar distribution but have not been recorded from the Ross Sea. *Procampylaspis compressa* and *Campylaspis breviramis* show at the moment a more restricted distribution (Weddell Sea, Antarctic Peninsula and Bellingshausen Sea). Finally, three apparently undescribed species belonging to the genera *Cumella*, *Campylaspis* and *Paralamprops* are recorded for first time in this study.

Most of this species show a wide range of geographical distribution and have been recorded from nearly all High Antarctic waters. The absence of some species from the Ross Sea may be better explained by a low research effort in this area than by true differences in the cumacean assemblages. The affinity between the Antarctic and Magellan cumacean fauna is very low, this was also supported by this study, where only one species distributed through both regions, *Campylaspis quadriplicata*, was collected. Such a low affinity may be explained by both environmental and behavioural reasons. Circumantarctic current affect faunal interchange

between both areas. Moreover, cumaceans are moving only occasionally into the water column, and its early life stages are sheltered in a marsupium, therefore, there is little opportunity to disperse.

Table 1. Bathymetric, regional and near-bottom distribution of cumaceans collected during the BENTART-03 cruise in the Bellingshausen Sea and SW Antarctic Peninsula waters. TI, Thurston Island; PI, Peter I Island; BS, Bellingshausen Sea; AP, W Antarctic Peninsula; N₁, abundance in the 10-50 cm near-bottom layer; N₂, abundance in the 55-90 cm near-bottom layer; N₃, abundance in the 100-140 cm near-bottom layer; T, total suprabenthic sledge abundance; B, additional data from box-corer samples; (*), damaged specimens.

	Depth range [m]	Regional distr.				Near-bottom distr.				B
		TI	PI	BS	AP	N ₁	N ₂	N ₃	T	
<i>Cyclaspis gigas</i>	492-608			•		2	-	-	2	1
<i>Vaunthompsonia laevifrons</i>	87-390	•	•		•	16	1	2	19	2
<i>Cumella australis</i>	87-363		•		•	21	-	1	22	-
<i>Cumella</i> sp. A	657				•	1	-	-	1	-
<i>Campylaspis breviramis</i>	492			•		1	-	-	1	-
<i>Campylaspis quadriplicata</i>	492			•		1	-	-	1	-
<i>Campylaspis</i> sp. A	363		•			3	-	-	3	-
<i>Procampylaspis compressa</i>	743	•				1	-	-	1	-
<i>Procampylaspis</i> spp.	492-743	•		•		6	1	-	7	-
<i>Leucon antarcticus</i>	1052				•	-	2	-	2	-
<i>Eudorella gracilior</i>	1052				•	3	8	2	13	-
<i>Diastylis mawsoni</i>	608-1480	•		•		1	-	-	1	1
<i>Diastylis andersoni</i>	107				•	-	-	-	-	1
<i>Leptostylis crassicauda</i>	540-1052			•		-	2	-	2	-
<i>Leptostylis</i> cf. <i>antipa</i>	498-743	•		•		6	-	-	6	-
<i>Diastylis</i> sp. (*)	540-1052			•	•	1	1	-	2	-
<i>Hemilamprops pellucidus</i>	492-608	•		•		2	1	-	3	-
<i>Paralamprops</i> sp. A	534-608	•		•		9	-	-	9	1
Cumacea indeter. (*)						4	-	1	5	-

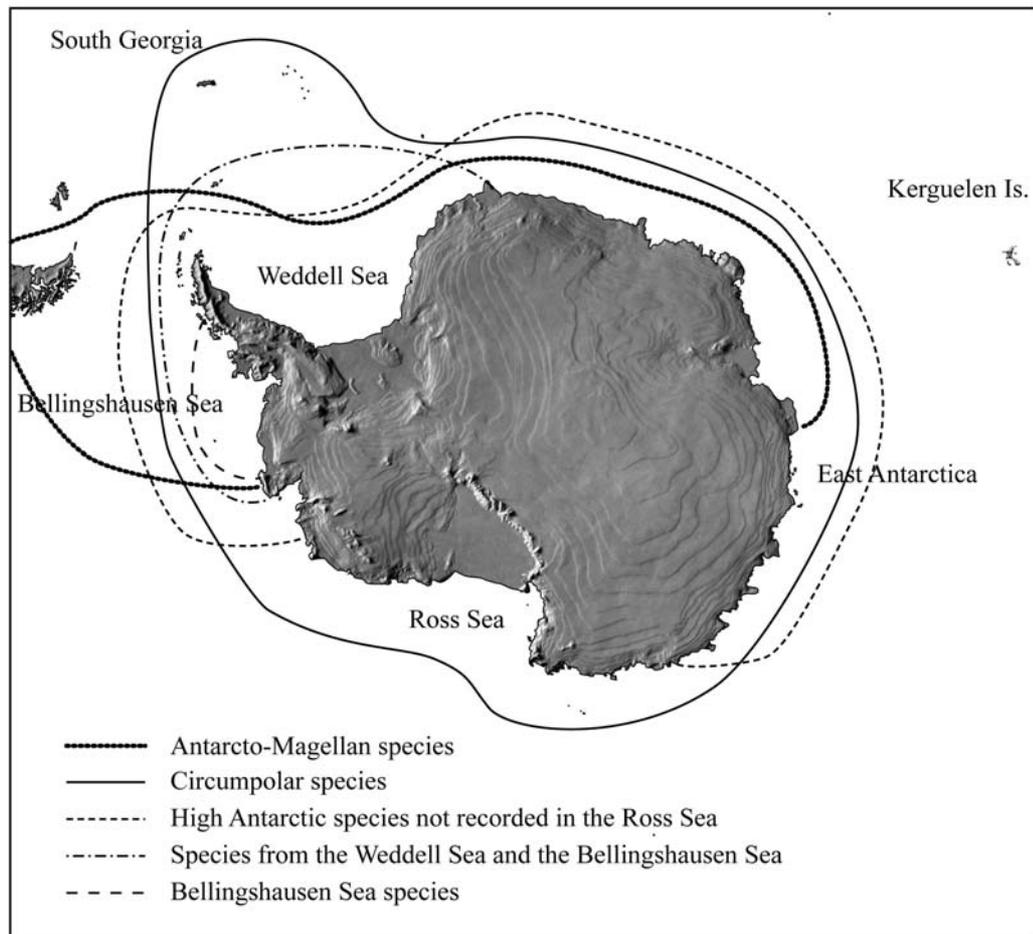


Figure 1. Geographical distribution patterns of cumacean species collected in the Bellingshausen Sea during BENTART-03 cruise.