

## Guest editorial

### The importance of the Southern Ocean cephalopod fauna

The Southern Ocean is probably the last frontier in the field of marine biology. This huge oceanic region is the scene of a very efficient production system yielding high levels of biomass. Within the Southern Ocean food chain the important and conspicuous role played by Antarctic krill is well documented but there is another group of key animals, rarely conspicuous and much less well understood that play a most important intermediate role in the food chain. Although field scientists working in the Southern Ocean have observed an abundant and diverse squid fauna in the diet of vertebrate predators, Antarctic squid have seldom been seen alive. This is in contrast to the situation in seas at lower latitudes where schools of neritic and oceanic squid are regularly encountered at the surface. Marine scientists have rarely been successful in catching Antarctic squid, using either towed nets or jigs, but it has been estimated that standing stock biomass of these organisms in the Southern Ocean may be as high as 100 million tonnes based on an estimate of 30 million tonnes consumed by vertebrate predators. This is clearly a significant resource when compared to the annual catch of the world's fisheries (mostly finfish) which, according to current FAO statistics, amounts to some 100 million tonnes.

For the future, one of the most important priorities in the field of Antarctic cephalopod biology is to establish the distribution of the major squid species. The development of suitable technologies for the precise quantitative and qualitative assessment of the Southern Ocean squid biomass should be a primary consideration. Suitable sampling methodologies are essential to obtain the data necessary for the successful conservation and management of the Southern Ocean marine fauna and especially for those species that are a potential commercial resource for human food.

The Antarctic benthic community seems at first sight to be dominated by suspension feeding organisms with a relatively low abundance of carnivorous species. However, one of the major carnivore groups in this environment are the octopuses, a poorly understood group. In spite of their position in the benthic system little is known about the Southern Ocean octopuses and a great deal of research is called for on their taxonomy, life cycle biology and population structure to establish a realistic assessment of their contribution to biomass and production. They surely play an important role in the benthic food web and it is vital that this role should be properly understood.

It is undoubtedly timely for an international symposium on the cephalopods of the Southern Ocean. To successfully address the many problems in cephalopod biology, especially in this remote oceanic region, international and inter-disciplinary cooperation and coordination are virtually indispensable and this must include a recognition of the commercial fishery interests in what is now a well established fishery. International programmes in the past, including the BIOMASS programme in the Antarctic, have scarcely considered the cephalopods or at best given them a low profile. The time has come for the cephalopods to be given much greater consideration, especially in the Southern Ocean where they are clearly such an important, if inconspicuous, component of the food chain.

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