

# ANTARCTIC SCIENCE

## (Special Issue)

### Southern Ocean cephalopods: life cycles and populations

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The first systematic sampling in the Southern Ocean to capture cephalopods took place 120 years ago aboard *HMS Challenger*. Over the next century taxonomic knowledge was advanced by expeditions including the Mission du Cap Horn (France), the *Valdivia* Deep Sea Expedition (Germany), the *Discovery* expeditions (UK) the *Eltanin* (USA) and *Academic Knipovitch* (USSR). Over the last decade Southern Ocean cephalopod research has at last progressed beyond the descriptive phase and is rapidly joining other fields of Antarctic marine biology in its concerns with population biology and trophic systems. Although much taxonomic work remains to be done, ecological studies on the role of cephalopods in the diet of predators has been facilitated by advances in the identification of cephalopod beaks, development of opening-closing nets has allowed fine-scale distribution studies, and as methods for the study of growth, diet and biochemical genetics have advanced, so these have been applied to Southern Ocean cephalopods.

Recently, major squid fisheries have rapidly developed in the cool waters of the Southern Ocean around the Falkland Islands and New Zealand and exploratory fishing has been pursued farther south. The world is now experiencing a time of almost unprecedented economic and political change which is reflected in the patterns of world fisheries. Squid fisheries are notorious for rapid sequences of boom and bust, after which fleets move rapidly to exploit new stocks. It is vital that, in future, cephalopod fisheries in the Southern Ocean be managed rationally and detailed scientific knowledge of the biology of the species will be essential. Successful management of future Southern Ocean fisheries will be important for the supply of human food and maintenance of the fragile food chains in which cephalopods are a key component.

The extent of research effort and interest internationally in recent years is indicated by the fact that 16 nations were represented at this first scientific meeting devoted to the Southern Ocean Cephalopods.

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