The papers contained in this issue originate from a cruise in the South and equatorial Atlantic that took place under an initiative of the Intergovernmental Oceanographic Commissions (IOC) Committee on the Global Investigation of Pollution in the Marine Environment (GIPME). The original objective of the IOC/GIPME cruises was a baseline survey of the concentration of contaminants in the Atlantic Ocean for comparison in the future, with the specific goal of identifying the trace metal and organic contaminant levels in the major water masses of this ocean basin. As can be seen by the papers in this volume, the investigations that have taken place as part of this initiative have gone far beyond this initial objective, becoming a more thorough biogeochemical investigation of trace metals and other trace substances in the Atlantic; both in the water column and in the atmosphere. Three cruises took place to date as part of the IOC/GIPME endeavor. The first cruise in March–April, 1990 was aboard the German Research Vessel Meteor from Cape Town, South Africa, to Funchal, Madeira. The second cruise began in early August, 1993 aboard the Canadian Vessel CSS Hudson in St. Johns, Newfoundland, and ended in Reykjavik, Iceland. The cruise in May–June 1996 aboard the US Research Vessel Knorr started in Montevideo, Uruguay, and ended in Georgetown, Barbados. These cruises were designed, as far as possible, to sample the major water masses of the Atlantic Ocean. The cruises have been international in scope, including participants from North America (USA, Canada), Europe (Netherlands, Germany, France, United Kingdom, Sweden), China, South Korea, India and Australia. Participants are those who either directly participated in the cruise or received samples collected on their behalf. While the IOC provided partial logistical and travel support for this investigation, the cruise participants obtained funding from other sources as well. For the USA participants, most of the funding was provided by the National Science Foundation (NSF) Chemical Oceanography Program, and NSF funded the use of the RV Knorr for the 1996 cruise, the subject of this Special Issue. Papers from the first cruise were published in a special issue of Marine Chemistry in 1995 (vol. 49); see attached bibliography. A second special issue of Marine Chemistry (vol. 61, 1998) contained further papers from the first cruise and papers from the second cruise. A third special issue of Deep-Sea Research II (vol. 46, No. 5) contained papers from the second and third cruises. The current issue of Deep-Sea Research II contains papers from the 1996 South and equatorial Atlantic cruise. A paper describing the hydrographic setting of this cruise was published in a previous Deep-Sea Research II issue. Other IOC-related published papers are also listed in the bibliography.


S. Vink and C.I. Measures -- The role of dust deposition in determining surface water distributions of Al and Fe in the South West Atlantic -- 2787-2809

L.Y. Alleman et al. -- Isotopic evidence of contaminant lead in the South Atlantic troposphere and surface waters -- 2811-2827


L.Y. Alleman et al. -- Role of oceanic circulation on contaminant lead distribution in the South Atlantic -- 2855-2876

Rodney T. Powell and John R. Donat -- Organic complexation and speciation of iron in the South and Equatorial Atlantic -- 2877-2893

Gregory A. Cutter, Lynda S. Cutter, Alison M. Featherstone and Steven E. Lohrenz -- Antimony and arsenic biogeochemistry in the western Atlantic Ocean -- 2895-2915

Gregory A. Cutter and Lynda S. Cutter -- Sources and cycling of selenium in the western and equatorial Atlantic Ocean -- 2917-2931

K. Ndung’u, M.A. Thomas and A.R. Flegal -- Silver in the western equatorial and South Atlantic Ocean -- 2933-2945

Jinchun Yuan and Alan M. Shiller -- The distribution of hydrogen peroxide in the southern and central Atlantic ocean -- 2947-2970