

**Program of the Thirteenth Symposium on Polar Biology  
held at the National Institute of Polar Research, Tokyo,  
December 5-6, 1990**

—Contributed Papers—

—Keynote Address I.—

“Biological Processes in the Sea Ice Zone”

- S1. Chemical substances quantitatively and qualitatively controlling the biological community in the Antarctic Ocean S TSUNOGAI.
- S2. Role of the sea ice in Arctic ocean ecosystem I. A. MELNIKOV
- S3. Development of surface-layer sea ice assemblages in Antarctic pack ice during the austral spring. D. L. GARRISON.
- S4. Feeding of the dominant species of Antarctic zooplankton in February–April 1989. A. F. PASTAMAK and A. V. DRITS.
- S5. Preliminary studies of acoustic behaviour and sound signals of *Sterna vittata*, in Antarctica Z. FAN and M. CHENG
- S6. Fish and environment in the northern Bering and southern Chukchi Seas. T. NISHIYAMA.
- S7. Seabirds in the sea of Okhotsk Sea H. OGI.

—Keynote Address II.—

“Inland Water Ecosystems”

- S8. Antarctic algae in inland water and their ecology with special references to the allelopathic interactions as a possible determinant in the structure and composition of algal communities. M. AKIYAMA, H. KANDA and S. OHTANI.
- S9. Aquatic mosses found in lakes of the Syowa Station area, East Antarctica. H. KANDA.
- S10. An investigation of algal flora in Alaskan lakes and ponds. E. TAKAHASHI, I. INOUE, T. NAGUMO, Y. SATOH, A. OGUNI, H. KANDA, V. ALEXANDER, D. WUJEK, P. SIVER and J. HILGERT.
- S11. Chemical characteristics of Antarctic lakes and ponds, with special emphasis on the distribution of organic components G. I. MATSUMOTO, K. WATANUKI and T. TORII.
- S12. Antarctic Dry Valley lakes and climate change. R. A. WHARTON, Jr.

—Poster Session I Marine Biology—

A. Primary Production

- P1. PREFLA project carried out on board T/S OSHORO MARU in 1990 summer. M. FUKUCHI, T. NISHIYAMA and K. MASUDA
- P2. Variability in downward particulate flux in the northern Bering Sea in summer 1988, 3. Phytoplankton. H. SASAKI, S. TAGUCHI, H. HATTORI, A. TANIMURA and M. FUKUCHI.
- P3. Phytoplankton productivity in the Mackenzie shelf of the Beaufort Sea K. ISEKI, R. W. MACDONALD, M. C. O'BRIEN and S. JASPER.
- P4. Cryopelagic flora of the Chukchi, East Siberian and Laptev Seas. Y. B. OKOLODKOV.
- P5. Usage of seawater system for long-term study of phytoplankton in the boreal coastal water in Hokkaido, Japan S. TAGUCHI.
- P6. Biosynthesis and photosynthetic products in bloomforming diatom in lagoon Saroma Ko, Hokkaido H. SATO, Y. YAMAGUCHI, T. TAKEUCHI and K. WATANABE.
- P7. The role of mixing in an Antarctic primary production model A. SVANSSON.

- P8 Seasonal variation of particulate organic matter under the Antarctic fast ice with special reference to the variation of C: N. P ratio and phytoplankton activity. O MATSUDA, K KAWAGUCHI, S ISHIKAWA and M. NAGAHAMA
- P9 Seasonal variation in species composition of net phytoplankton under the fast ice near Syowa Station, 1983/84 K. WATANABE, H SATO, H. KANDA and E. TAKANASHI.
- P10 Estimation of annual primary production in the fast ice area near Syowa Station, Antarctica. H. SATO, K. WATANABE and T HOSHIAI
- P11. Extremely psychrophilic algae isolated from the Actarctic Ocean H OKUYAMA, K. KOGAME, M MIZUNO, Y. TAKADA, S SASAKI, S OHTANI, K. WATANABE and H. KANDA.
- P12. Silicoflagellate flora in Southern Ocean, with special reference to the skeleton morphology Y KAWABATA and S NISHIDA
- P13. Long-term variation of chlorophyll-*a* in the Indian sector of the Antarctic Ocean. T. ISHIKAWA, A NAGAI and M. FUKUCHI
- P14 Distribution of heterotrophic nanoplankton in the Southern Ocean along the cruise of the SHIRASE during the summer, 1990 M ISHIYAMA, J HIROMI, S KADOTA, A. TANIMURA and M. FUKUCHI
- P15. Sea ice diatoms and ice edge planktonic diatoms in northern boundary of the Weddell Sea pack ice. R LIGOWSKI, M. GODLEWSKI and A ŁUKOWSKI
- B. Environment/Zooplankton/Krill
- P16. Characteristics of oceanographic structure along 120° E in the Southern Ocean. M. NAGANOBU
- P17 Oceanographical analysis on the southern minke whale distribution based on the data during Japanese research take in 1989/90 M NAGANOBU
- P18 Chlorophyll and krill distribution in Antarctic Ocean using by CZCS S. MATSUMURA, T. ICHII, Y. OKADA and H FUKUSHIMA.
- P19. The distribution of four Antarctic copepods, *Calanoides acutus*, *Calanus propinquus*, *Rhincalanus figas* and *Metridia gerlachei*, in relation to retreat of the sea ice A TANIMURA, S YAMADA, T MINODA, M FUKUCHI and T. HOSHIAI
- P20 Distribution of copepods in the northern Bering Sea and the Chukchi Sea in summer. H HATTORI and M. FUKUCHI
- P21. Experimental studies of physiology and biochemical composition of the Arctic copepods genus *Calanus*. E G ARASHKEVICH
- P22 The effect of environmental factors on population dynamics of *Drepanopus bispinosus* (Calanoida: Copepoda) in Burton Lake, Antarctica Z. WANG
- P23. Distribution and abundance of Antarctic krill *Euphausia superba* Dana in Indian sector of Southern ocean. B S INGOLE and A. H PARULEKAR
- P24 Observations on the Antarctic krill (*Euphausia superba* Dana) during winter Weddell Gyre study-89. V. SPIRIDONOV
- P25 Euphausiid larvae of the Weddell Gyre (September–October 1989) L. MENSHENINA
- C. Benthos/Fish/Seabirds/Marine Mammals
- P26. Some leptostracan crustacean (*Nabaiella* ? sp ) collected by the 27th JARE. T. KIKUCHI and S. GAMÔ
- P27. Three species of the amphipod crustaceans collected from Breid and Lutzow-Holm Bays, Antarctica, during the JARE-26 Cruise I TAKEUCHI and M. TAKEDA
- P28. Archaeogastropods collected by Japanese Antarctic Research Expeditions from Breid Bay and Gunnerus Bank, Antarctica H NUMANAMI, T. OKUTANI and T HOSHIAI.
- P29. Note on fishes collected along with the Antarctic krill in the vicinity of the Ross Sea, Antarctica T. IWAMI and M. TAKAHASHI
- P30 Distribution and some biological data on gadid fish in the southeastern Chukchi Sea. T. NISHIYAMA, Y. SAKURAI and T. WYLLIE-ECHERRRIA
- P31. Trophic relationship of demersal fish community off Kinkasan, northern Japan O.

YAMAMURA, T. INADA and K. SHIMAZAKI.

- P32. Distribution of Sooty Shearwaters in the North Pacific. H. OGI and K. SHIOMI.  
 P33. Feeding ecology of Sooty Shearwater (*Puffinus griseus*) in the north Pacific. K. SHIOMI and H. OGI  
 P34. Scaling the morphological features of Alcids concerned with aerial and subaqueous flights. Y. OSA and H. OGI.  
 P35. Comparison of diving patterns in gentoo penguins (*Pygoscelis papua*) between breeding and non-breeding periods. A. KATO, T. D. WILLIAMS, J. P. CROXALL and Y. NAITO.  
 P36. Diving behavior of weaned pup of northern elephant seal during the first foraging trip. T. ASAGA, Y. NAITO and B. J. LE BOEUF

—Poster Session II Terrestrial Biology—

D. Fungi/Algae

- P37. Microbiological investigations of pollution caused by humans at Syowa Station in Antarctica. S. TOYODA and A. MATSUMAE.  
 P38. Characterization of a bacterium, *Izukaella psychrophila* gen. nov., sp. nov. isolated from Lake Vanda, Antarctica. J. NISHIKAWA, H. NAGASHIMA, G. I. MATSUMOTO and H. IIZUKA.  
 P39. Limnological study on lakes of Peninsula Keller, King George Island, Antarctica. E. A. LOBO, R. F. GARCIA, M. F. GARCIA and E. P. BENDER.  
 P40. Seasonal variation of nutrients in Lake Ô-ike near Syowa Station. Y. OHYAMA, K. MORIMOTO and Y. MOCHIDA.  
 P41. Floristic studies on algae from inland waters near Syowa Station, Antarctica. V. Skallen. A. OGUNI and E. TAKAHASHI.  
 P42. MNR studies on halotolerance of Antarctic *Dunaliella* sp. T. WATANUKI, K. MATSUSITA and K. KATO.  
 P43. Culture of green algae isolated from fresh-water areas in the Antarctic. H. NAGASHIMA, S. KIJIMA, S. OHTANI and H. MOMOSE.  
 P44. *Macrochloris multinucleata* (Reisigl) Ettl et Gartner (Chlorophyceae) newly found in Antarctic region. S. OHTANI, P. A. BROADY and T. NAKANO.

E. Mosses/Alpine/Arctic/Invertebrates

- P45. Culture of gemmae on an aquatic moss in the lakes near Syowa Station. S. IMURA, M. HIGUCHI, H. KANDA and Z. IWATSUKI.  
 P46. Aquatic mosses found in lakes of the Skarvsnes region, East Antarctica. H. KANDA and Y. MOCHIDA.  
 P47. Growth and survival of *Polygonum cuspidatum* and *Polygonum weyrichu* in the alpine area of Mt. Fuji. E. MARUTA.  
 P48. Seasonal changes in the amount of carbo-hydrate and photosynthetic activity of *Pinus pumila* REGEL on alpine in central Japan. T. KIBE and T. MASUZAWA.  
 P49. Ecophysiological studies of *Dryas octopetala* in Alaska and Japan. T. MASUZAWA and B. SVEINBJORNSSON  
 P50. Postglacial climate change in Northern Canada as estimated from the rate of peat bog formation. T. SWEDA, H. YONENOBU and R. W. WEIN.  
 P51. Effects of substrate on vegetation development in the subarctic environment with special reference to vegetation in northern Yukon Territory, Canada. S. KOJIMA.  
 P52. Cold-hardiness of the winged Antarctic midge *Parochlus steinenu*. K. SHIMADA, Y. OHYAMA and C. X. PAN.  
 P53. Structure and characteristics of glacier ecosystems. S. KOHSHIMA.