

**Program of the Ninth Symposium on Polar Biology,  
held at the National Institute of Polar Research, Tokyo,  
December 3-5, 1986**

**A. Contributed Papers**

**I. Marine Environments**

1. Characteristics of ocean structure along 155°E and 170°W in the Southern Ocean. Mikio NAGANOBU.
2. Phosphorus in the water Antarctic Ocean. Fukashi FUKUI, Nobuyuki KADOYA and Shiro OKABE.

**II. Temporal and Spatial Distribution of Marine Primary Production**

3. Distribution of size fluctuated phytoplankton chlorophyll in the Southern Ocean. Hiroshi HATTORI and Mitsuo FUKUCHI.
4. Fine-scale distribution of sub-surface chlorophyll-*a* in the Indian Antarctic Ocean observed by a continuous monitoring system on board in 1985/86 (JARE-27). Mitsuo FUKUCHI and Hiroshi HATTORI.
5. Vertical distributions of phytoplankton stocks in the Indian Sector of the Antarctic Ocean. Hiroshi HATTORI and Mitsuo FUKUCHI.
6. Phytoplankton bloom observed in the vicinity of Balleny Isles, Antarctica. Yukuya YAMAGUCHI and Hiroo SATOH.
7. Distribution of chlorophyll-*a*, particulate organic carbon and nitrogen in the southern Beaufort Sea in late summer. Kazuo ISEKI, Robie W. MACDONALD and Eddy CARMACK.
8. Long-term continuous measurement of *in-situ* chlorophyll-*a* with a moored system in Breid Bay, Antarctica, December 1985 – February 1986. Mitsuo FUKUCHI, Hiroshi HATTORI and Takao HOSHIAI.
9. Primary production under fast ice near Syowa Station, Antarctica. Hiroo SATOH and Kentaro WATANABE.
10. Seasonal variation of downward flux of particulate organic matter under the Antarctic fast ice. Osamu MATSUDA, Shingo ISHIKAWA and Kouichi KAWAGUCHI.
11. Seasonal succession of ice algal assemblage in bottom layer of fast ice near Syowa Station. Kentaro WATANABE.
12. Phytoplankton and microzooplankton communities in the water column beneath the sea-ice coverings in lagoon Saroma in winter 1986. Akira TANIGUCHI, Tsuneo NISHIYAMA, Atsushi TANIMURA and Kentaro WATANABE.
13. Ice algae in Lake Saroma, northern part of Japan. Kentaro WATANABE, Mitsuo FUKUCHI, Atsushi TANIMURA and Takao HOSHIAI.
14. Quantitative measurement of endotoxin in ice—Endotoxin in the sea ice of Lake Saroma. Tsutomu KUROSAWA, Atsushi TANIMURA and Takao HOSHIAI.
15. Lipopoly saccharide in the water of Antarctic Ocean and its adjacent sea. Hiroyuki TOMINAGA, Fukashi FUKUI and Shigenori TANAKA.

**III. Ecology of Zooplankton**

16. Distribution of an appendicularian, *Oikopleura vanhaeffeni* in the northern Bering Sea shelf during summer. Naonobu SHIGA.
17. Abundance of zooplankton collected with the N70V net during the "Shirase" cruise, JARE-25 (1983/84). Akito KAWAMURA.
18. Horizontal distribution of the zooplankton community in the Australian Sector of the Southern Ocean. Satoshi YAMADA.
19. Latitudinal variation in *Salpa thompsoni* (Tunicata, Thaliacea). Implications for validity of the species *Salpa gerlachei*. Beatriz Estela Casareto and Takahisa NEMOTO.

20. Gut contents of ice-associated copepod, *Paralabidocera antarctica*, near Syowa Station. Atsushi TANIMURA, Kentaro WATANABE and Takao HOSHIAI.
21. Zooplankton biomass under the sea ice in Lake Saroma, northern part of Hokkaido, Japan. Tsuneo NISHIYAMA, Atsushi TANIMURA, Kentaro WATANABE and Mitsuo FUKUCHI.
22. An observation of abundance and vertical under the sea ice in Saroma Ko, a lagoon on Hokkaido facing the Okhotsk Sea. Moriyuki KOTORI, Tsuneo NISHIYAMA, Atsushi TANIMURA and Kentaro WATANABE.

#### IV. Ecology of Euphausiids

23. Characteristics and comparison on ecological distribution of *Euphausia superba* DANA in the Southern Ocean. Mikio NAGANOBU and Yuzo KOMAKI.
24. Diurnal vertical migration of Antarctic krill swarms under varying light conditions during different months. Taro ICHII.
25. Extremely long lives of Antarctic krill (*Euphausia superba*) as shown in the laboratory experiment. Tsutomu IKEDA.
26. On the feeding and filter structure of *Euphausia pacifica*. Hae-Lip SUH, Makoto TERASAKI and Takahisa NEMOTO.

#### V. Distribution of Fishes and Benthos

27. Cephalopods collected with a beam-trawl by JARE-26 (1984–1985). Takashi OKUTANI and Hideki NUMANAMI.
28. Possible scraping influence by bottom of iceberg on benthos distribution. Hideki NUMANAMI, Yoshiyuki HAMADA, Yasuhiko NAITO and Akira TANIGUCHI.
29. On some cumaceans and isopods found in a small collection of smaller crustaceans from the Antarctic Sea. Shigeo GAMÔ.
30. Studies of the intestinal flora isolated from fish, bird and penguin living in near the place of Syowa Station. Takeji SASAKI and Takao HOSHIAI.

#### VI. Ecology of Sea Birds and Sea Mammals, and Ecosystem Simulation

31. Breeding ecology and food habit of Rhinoceros Auklet on Teuri Island. Yutaka WATANUKI and Hisashi ABE.
32. The distribution of mottled petrels in the North Pacific. Haruo OGI, Hidetsugu YOSHIDA, Hiroyuki TANAKA, Hitoshi FUJIMURA, Senichi SHIRATORI and M. W. NEWCOMER.
33. Mass mortality occurrence and chick growth of Short-tailed Shearwaters as indices of fluctuations of *Nyctiphanes australis* population in Australian waters. Nariko OKA and Naoki MARUYAMA.
34. Breeding ecology of the Antarctic petrel *Thalassoica antarctica* in Mühlig-Hofmannfjella, Dronning Maud Land. F. MEHLUM.
35. Feeding rate of the southern minke whales. Hidehiro KATO and Yasuhiko SHIMADZU.
36. Model simulation of Antarctic ecosystem. Masaki EJIRI, Takao HOSHIAI, Yasuhiko NAITO, Mitsuo FUKUCHI and Haruo SAKURAI.

#### VII. Bioaccumulations of PCB and Heavy Metal

37. Bioaccumulation of PCB isomers and congeners in the tufted puffin *Lunda cirrhata*. Hiroyuki TANAKA, Haruo OGI and Ryo TATSUKAWA.
38. Use of organochlorines as chemical tracers in determining certain reproductive parameters in Dall's porpoises. An. SUBRAMANIAN, Shinsuke TANABE and Ryo TATSUKAWA.
39. Heavy metal accumulations of krills in the Antarctic. Yoshiyuki YAMAMOTO, Katsuhisa HONDA and Ryo TATSUKAWA.
40. Accumulation of Cd and Hg in marine mammals. Katsuhisa HONDA and Ryo TATSUKAWA.

#### VIII. Glacial Biota

41. Biotic community of Patagonian glaciers. Shiro KOHSHIMA.

## IX. Freshwater Algae and Inland Water

42. Eutrophication in Antarctic terrestrial environment with special reference to the ecological meaning of allelopathic effects of some soil organic substances on the growth of soil algae. Masaru AKIYAMA, Hiroshi KANDA and Yoshikuni OHYAMA.
43. Morphological studies on cyanobacterial mats from Antarctica. Akira SHIMIZU, Shuji OHTANI, Hiroshi KANDA and Kenji KIMURA.
44. Vertical distribution of organic substances in Lake Vanda, Antarctica. Genki I. MATSUMOTO and Kunihiko WATANUKI.
45. Floristic study of algae of inland waters, Antarctica. 1. Planktonic algae in ponds at East Ongul Island. Akinobu OGUNI, Hiroko TANAKA, Momoko UEMURA, Makiko YAMAMOTO and Eiji TAKAHASHI.
46. Epiphytic algae on the moss community of *Grimmia lawiana* around Syowa Station, Antarctica. Shuji OHTANI and Hiroshi KANDA.
47. The epiphytic algae of bryophyte communities from Patagonia, southern South America. Tarow SEKI and Taketo NAKANO.

## X. Ecology of Bryophytes

48. Flora and distribution of mosses in Continental Antarctica. Hiroshi KANDA.
49. Distribution of mosses on the top of Mt. Fuji in relation to microenvironment. Emiko MARUTA.
50. Microclimate and photosynthesis of the moss communities developed on a volcanic desert of Mt. Fuji. Takayuki NAKATSUBO and Yoshio INO.
51. Estimation of primary production in *Bartramia porformis* by different two methods. Shinji Ito and Yoshio INO.

## B. Poster Papers

1. Environmental control of lichen epiphytism some Antarctic moss species. R. HANCOCK and R. D. SEPPELT.
2. Habitat specificity and ecophysiology of *Usnea sphacelata* and *Usnea antarctica* near Casey Station, Antarctica. R. D. SEPPELT, R. HANCOCK and M. WILSON.
3. The distribution and abundance of chroococcoid cyanobacteria in the Southern Ocean. H. J. MARCHANT and A. T. DAVIDSON.
4. Loricata choanoflagellates from Ellis Fjord, Antarctica. H. J. MARCHANT, J. VAN DEN HOFF and H. R. BURTON.
5. Observations on the structure of the thelycum and spermatophore in the Antarctic euphausiids, *Euphausia superba* and *E. crystallorophias*. P. THOMAS.
6. Three new zooplankton nets designed for under-ice sampling; with preliminary results of collections made from Ellis Fjord, Antarctica during 1985. J. M. KIRKWOOD and H. R. BURTON.
7. Algal floras and environmental factors of some lakes in the vicinity of Syowa Station. Masao OHNO, Haruta MURAYAMA, Tomohiko WATANUKI and Yasushi FUKUDA.
8. Results of the visual observation of sea birds in the three sectors of the Southern Ocean in 1983–1985. Mikio TAKAYANAGI, Mikio NAGANOBU, Yoshikuni OHYAMA and Kazue NAKAMURA.