

Program of the Eleventh Symposium on Polar Biology  
held at the National Institute of Polar Research, Tokyo,  
December 12-14, 1988

—Contributed Papers—

- I. Japan-U.S. Arctic Marine Cooperative Study
  1. Inner Shelf Transfer and Recycling (ISHTAR) program. T. HOSHIAI.
  2. Annual transport of phytoplankton and particles through Bering Strait. C. D. WIRICK.
  3. Temporal variability of primary production and energy flow in Arctic sea ice area (PREFLA project). M. FUKUCHI, T. HOSHIAI, Y. NAITO, A. TANIMURA, O. MATSUDA, H. HATTORI, V. ALEXANDER and P. MCROY.
  4. Zooplankton investigation on ISHTAR 1988 Leg IV. A. TANIMURA, H. HATTORI, M. FUKUCHI, O. MATSUDA, Y. NAITO, T. HOSHIAI and P. MCROY.
  5. Consecutive observations of downward flux and suspended particles in the northern Bering Sea in summer 1988. H. SASAKI, H. HATTORI, O. MATSUDA, A. TANIMURA, M. FUKUCHI, Y. NAITO, T. HOSHIAI, R. TRIPP and P. MCROY.
- II. Predator (I)
  6. Historical changes of streaked shearwater population on Oshima Ohshima Island. H. OGI, N. MARUYAMA, N. OKA and H. NOMURA.
  7. Distribution of shearwaters off the Sanriku District in northern Japan. H. OGI.
- III. Predator (II)
  8. The tendency of Penguin Biology—A memoir of the 1st International Conference on Penguins—. M. AOYANAGI and K. UEDA.
  9. Diving behavior of Adelie penguin (*Pygoscelis adeliae*), Langhovde, Syowa Station—Effect of weather condition on its diving depth. M. AKIYAMA, T. ASAGA, Y. NAITO, Y. WATANUKI and H. OKUMURA.
  10. Analysis of long, continuous, deep diving behavior of northern elephant seal. T. ASAGA, Y. NAITO, B. J. LE BOEUF and A. C. HUNTLEY.
- IV. Fish/Benthos (I)
  11. Comparison of reproductive behaviors in three Pacific gadid fishes, Pacific cod, saffron cod and walleye pollock. Y. SAKURAI and A. CHEN.
  12. Influence of temperature and salinity on egg development and hatching of saffron cod. A. L. CHEN, S. KANAMARU and Y. SAKURAI.
  13. On the kidney of the saffron cod, *Eleginus gracilis* and its cold adaptation. Y. KITAGAWA, M. OGAWA and M. FUKUCHI.
- V. Fish/Benthos (II)
  14. Mesopelagic fishes collected with 10-foot IKPT in the JARE-28 cruise, 1987. T. IWAMI and T. KUBODERA.
  15. Spawning behavior of the Antarctic fish, *Trematomus bernacchii*, in captivity. Y. KONDO, S. SAKAKIBARA, T. TOBAYAMA and T. HOSHIAI.
  16. Some isopod crustaceans from the Antarctic Seas. S. GAMÔ.
  17. Regularities of seasonal changes in intertidal biota of the boreal zone and the role of ice cover as an ecological factor. O. G. KUSSAKIN.
  18. Taxonomic studies of family Scissurellidae and family Trichotropidae (Mollusca: Gastropoda) collected with a beam-trawl by JARE-26 (1984/85). H. NUMANAMI, T. OKUTANI and T. HOSHIAI.

## VI. Environment

19. Analysis of temperature (XBT) data in the feasibility study on southern minke whale in 1987/88. M. NAGANOBU, K. SHIMAMOTO and H. KATO.
20. Characteristics of oceanic structure along 114°E in the Southern Ocean. M. NAGANOBU.
21. Relationship between ENSO and Southern Ocean waters (preliminary report). J. FUKUOKA, H. MIYAKE and M. FUKUCHI.
22. Nutrient distributions in the Southern Ocean. F. FUKUI, Y. KOMAKI and S. OKABE.

## VII. Primary Production

23. Observation of benthic microalgal assemblage under sea ice in Lake Saroma, Hokkaido. H. SATOH, Y. YAMAGUCHI, K. WATANABE and Y. ARUGA.
24. Variability in sterol flux in the ice-covered Saroma Lake, Hokkaido, Japan. T. YAMAGUCHI, H. SASAKI, K. WATANABE, A. TANIMURA and M. FUKUCHI.
25. Studies on metabolism of psychrophilic marine diatom isolated from the Antarctic Ocean—Distribution of assimilated carbon—. R. KATAHIRA, H. TOMINAGA and N. TOMINAGA.
26. Physiological ecology of Antarctic seaweeds. M. OHNO.

## VIII. Zooplankton/Micronekton (I)

27. Metabolism and body composition of the Antarctic krill *Euphausia superba* collected from under the pack-ice, off Enderby Land, Antarctica. T. IKEDA and R. KIRKWOOD.
28. Distribution of Antarctic krill derived from krill fishing and minke whaling data. T. ICHII.
29. Effect of the growth stages and sex on heavy metal accumulation in Antarctic krill (*Euphausia superba*). Y. YAMAMOTO, K. HONDA, R. TATSUKAWA and Y. ENDO.
30. Pelagic amphipod (Amphipoda: Hyperiidea) in Scotia Sea and adjacent area—I. K. YOO and S. CHOE.

## IX. Zooplankton/Micronekton (II)

31. Seasonal abundance of *Metridia gerlachei* under fast ice near Syowa Station, Antarctica, from January 1982 to January 1983. S. YAMADA, T. MINODA, M. FUKUCHI, A. TANIMURA and T. HOSHIAI.
32. Performance of Palumbo-Chun-Petersen type closing Norpac net and its application to field study in northern North Pacific, Bering Sea and Gulf of Alaska. A. KAWAMURA.
33. Cephalopods collected from the Greenland waters by the R/V SHINKAI-MARU in 1987. T. OKUTANI, T. KUBODERA and A. YATSU.

## X. Terrestrial and Freshwater Biology (I)

34. Floristic studies on algae from inland waters near Syowa Station, Antarctica III. Yukidori Valley. A. OGUNI and E. TAKAHASHI.
35. Structural features and community species composition of cyanobacterial mats obtained from Yukidori Valley, Langhovde Antarctica. A. SHIMIZU, E. TAKAHASHI, K. KIMURA and T. WATANUKI.
36. Formation of dirt layer and surface mud-like granule by micro-plant growth in some glaciers. S. KOHSHIMA and M. AKIYAMA.
37. A preliminary survey of Lake Ô-ike. Y. OHYAMA and K. MORIMOTO.

## XI. Terrestrial and Freshwater Biology (II)

38. Organic geochemical study of endolithic microbial communities in Beacon Supergroup sandstone, Antarctica. G. I. MATSUMOTO, K. WATANUKI and E. I. FRIEDMANN.
39. Characterization of microorganisms isolated from Lake Vanda in Antarctica. H. NAGASHIMA, J. NISHIKAWA, G. I. MATSUMOTO and H. IZUKA.
40. Plant remains and related substances found in an Antarctic lake sediments. M. AKIYAMA, M. HAYASHI, G. I. MATSUMOTO and K. MIURA.

## XII. Terrestrial and Freshwater Biology (III)

41. The process of colonization in Antarctic terrestrial and freshwater ecosystems. J. C. ELLIS-EVANS and D. W. H. WALTON.
42. Microbial ecology in mineral soils from Antarctica: The bacterial population and its activity in relation to organic nutrients. M. BÖLTER.
43. Characterization of plasmids from Antarctic bacteria. S. SHIVAJI, M. K. RAY and P. M. BHARGAVA.
44. Ornithocophilous lichens of the Arctic and the Antarctic region. M. OLECH.

## XIII. Terrestrial and Freshwater Biology (IV)

45. Distribution of three Acari species in Yukidori Valley, Langhovde. H. SUGAWARA, Y. OHYAMA and H. FUKUDA.
46. Frost-resistance of the tardigrade in Antarctic region. K. TANNO, H. SUGAWARA, Y. OHYAMA and H. FUKUDA.
47. Ground conditions of the habitat for moss vegetation at some sites near Syowa Station, East Antarctica. 1. Y. MOCHIDA.
48. Measurements of photosynthesis of mosses in Antarctica. Y. INO, H. KANDA and S. OHTANI.
49. Tissue cultures of some Antarctic lichens preserved in the refrigerator. I. YOSHIMURA, T. KUROKAWA and H. KANDA.

## —Poster Papers—

## A. Marine Biology

1. Grazing rate and particle size selection by *Diaphanoeca grandis* from the seaice of Lake Saroma, Hokkaido. H. J. MARCHANT.
2. Fauna and ecology of euphausiids larvae off the Antarctic peninsula and adjacent waters. R. R. MAKAROV, L. L. MENSHENINA and V. A. SPIRIDONOV.
3. The distribution and abundance of Adelie penguins breeding in Prydz Bay, Antarctica. M. D. WHITEHEAD and G. W. JOHNSTONE.
4. Daily activity patterns of common murres and black-legged kittiwakes at the breeding colony in Norton Sound, Alaska. Y. WATANUKI, Y. NAITO, P. McROY and J. SCHAUER.

## B. Terrestrial and Freshwater Biology

5. Phosphates of ornithogenic soils in maritime Antarctic. A. TATUR.
6. The annual cycle of bacterial numbers at an inshore site near the Antarctic Continent. R. C. GARRICK, J. A. E. GIBSON and H. R. BURTON.
7. Maritime Antarctic soils—A framework for future research. D. W. H. WALTON and V. JUNEMAN.
8. Microbial colonization processes in Antarctic fellfield soils. D. D. WYNN-WILLIAMS.
9. Plant community dynamics in Wilkes Land, Antarctica. R. I. LEWIS SMITH.
10. Micro-invertebrate community structure within a maritime Antarctic lake. S. J. McINNES and J. C. ELLIS-EVANS.