

**Program of the 15th Symposium on Polar Biology
held at the National Institute of Polar Research, Tokyo,
December 9–10, 1992**

—Contributed Papers—

—Keynote Address I.—

”Monitoring of Polar Terrestrial Ecosystems”

- S 1. Geochemical monitoring of Antarctic lake ecosystems. G. I. MATSUMOTO and M. AKIYAMA
- S 2. Estimations of microbial biomass by direct and indirect methods in Antarctic soils. M. BÖLTER
- S 3. Monitoring for algae introduced into Antarctica by human activity. P. A. BROADY, R. A. SMITH and K. SAFI
- S 4. A long-term monitoring on the moss and lichen communities in the Syowa Station area. H. KANDA and M. INOUE.
- S 5. Effects of vegetational and phenological changes on spectral reflectance in the arctic area. T. AKIYAMA, Y. INOUE, M. SHIBAYAMA, S. MORINAGA, Y. AWAYA and N. TANAKA.
- S 6. Diversity of Arctic Tundra vegetation and International Tundra Experiment (ITEX) in Canada. J. SVOBODA.

—Keynote Address II—

”New Technology for Marine Ecological Studies”

- S 7. Future prospects for marine ecological studies. B. J. ROTHSCHILD.
- S 8. Applications of hydroacoustics in marine ecological studies: a perspective on the present status and future directions. M.C. MACAULAY.
- S 9. The use of high frequency acoustics in the study of zooplankton spatial and temporal patterns. P. H. WIEBE and C. H. GREENE.
- S10. Micro-data logger and its utilization for the marine ecological studies. Y. NAITO AND H. ABE.

—Poster Session I. Terrestrial Biology—

A. Bacteria/Lichens/Algae

- P 1. Bacteria and yeast of Schirmacher Oasis, Antarctica: taxonomy, biochemistry and molecular biology. S. SHIVAJI.
- P 2. A Lichenometric study on snow patch area expansion and debris production increase on Mt. Hotakadake, Northern Japanese Alps. M. IWAFUNE.
- P 3. *Buellia cryptofrigida* sp.nov. and its habitat in the Syowa Station area. M. INOUE.
- P 4. Some filamentous green algae from King George Island, Antarctica. S. OHTANI and M. AKIYAMA.
- P 5. Desmids from King George Island, Antarctica. S. OHTANI and T. NAKANO.
- P 6. Effects of temperature on the photosynthesis of the Antarctic green alga, *Chlorella vulgaris*. H. NAGASHIMA, N. HAYASHI, S. OHTANI and H. MOMOSE.
- P 7. Diatom community of Lake Kirkkolahati (Finland). S. INOUE, T. KO-BAYASHI, H. FUKUSHIMA and H. FUJITA.
- P 8. Diatom Community of King George Island (Antarctica). H. FUKUSHIMA, S. OHTANI, T. KO-BAYASHI and H. FUJITA.
- P 9. Morphological changes Antarctic *Dunaliella* sp. exposed to hyper or hypotonic shock. T. WATANUKI, S. NAKAMURA, K. MATSUSHITA and K. KATO.
- P10. Floristic studies on algae from inland waters near Syowa Station, Antarctica. VII. Salt lakes. A. OGUNI. and E. TAKAHASHI.
- P11. Desert-steppe lichens and other southern lichen species in the Siberian Subarctic, plateau Putorana. M. ZHURBENKO.
- P12. Osmoregulation of Cyanobacteria obtained from Antarctica. A. SHIMIZU, T. WATANUKI and K. KIMURA.

- P13. Record of Landscape and biota evolution in lake sediments of maritime Antarctic. A. TATUR and Del R. VALLE.
- P14. Perturbation of Antarctic Tundra. W. VERA, I. SEREY and G. GUZMAN.
- B. Invertebrate Animals/Mosses/Higher Plants
- P15. Terrestrial arthropod fauna in the ice-free coastal Syowa Station area, East Antarctica. H. SUGAWARA, Y. OHYAMA and H. FUKUDA.
- P16. Ecological study of collembolans in King George Island. Y. OHYAMA and K. SHIMADA.
- P17. Insects pollinators of arctic plants in Svalbard. T. HIDAHA.
- P18. Structure of colonies of *Bryum argenteum* in Syowa Station area, Antarctica. S. IMURA and H. KANDA.
- P19. Ecophysiological study of *Carex bigelowii* in south-central Alaska. T. KIBE, T. MASUZAWA and B. SVEINBJÖNSSON.
- P20. Relation between a glacial retreat and plant community at Ny-Aleusund of Svalbard. T. MASUZAWA, H. KANDA, S. KOJIMA and Y. INO.
- P21. Ecological distributions of major high arctic vascular plants in relation to soil conditions. S. KOJIMA.
- P22. Measurement of methane and nitrous oxide emissions from peatlands in northern Quebec, Canada. H. TODA, K. YAGI, M. YOH and M. TAKEUCHI.
- P23. Altitudinal variations in leaf morphology and photosynthesis of *Polygonum weyrichii* var. *alpinum* on Mt. Fuji. E. MARUTA.
- P24. Daily courses of photosynthetic rates and water relations in four dwarf shrubs (Ericaceae) in an alpine zone. T. NAKANO and A. ISHIDA.
- P25. Building a new base at Vesleskarvet, Antarctica—monitoring ecosystem changes resulting from human activity. W. K. STEELE and D. A. BALFOUR.
- P26. Macroclimate and the variations of the parameters of biodiversity in the Arctic. Y. I. CHERNOV.
- P27. The types of spatial structure of Arctic communities and microclimatic conditions. N. V. MATVEYEVA and Y. I. CHERNOV.

—Poster Session II. Marine Biology—

- C. Physical/Chemical Environments/Primary Production
- P28. Downward particle transport under the Antarctic fast ice in summer. H. SUZUKI, H. SASAKI, N. HARADA and M. FUKUCHI.
- P29. Characteristics of oceanographic structure along 45°W in the Southern Ocean. M. NAGANOBU, M. HISANAGA and Y. SHIMADZU.
- P30. Oceanographical analysis on the southern minke whale distribution based on the data during Japanese research take in 1991/92. M. NAGANOBU, H. KANO and Y. FUJISE.
- P31. Preliminary report on the structure of primary and secondary production in Prydz Bay area, Antarctica. K. WATANABE, M. FUKUCHI and H. J. MARCHANT.
- P32. Culture of diatoms isolated from open ocean zone and seasonal ice zone in the Southern Ocean. S. TAKEDA, I. SAKAGUCHI, K. SHINSHIMA, M. KIYONO, K. WATANABE and H. NUMANAMI.
- P33. How the quantity and the pattern of primary production by microalgae respond to the duration of seasonal sea ice coverage in polar sea ? S. KUDOH.
- P34. Distribution and composition of biogenic particulate matter at surface in the Bering Sea Gyre in summer. A. SHIOMOTO and M. OGURA.
- P35. Comparative studies of the hydrographic conditions in the Chukchi Sea and St. Lawrence polynya region in mid-summer of 1990, 1991 and 1992. H. MIYAKE and K. MASUDA.
- P36. Local algorithm of estimation of chlorophyll pigments for remote sensing study in the western North Pacific: part I. modeling of vertical distribution by Gaussian curve and spatial and temporal variability in the parameters controlling Gaussian curve. S. TAGUCHI, H. KASAI and H. SAITO.

- P37. Photo-inhibition of ice algal assemblages in Lagoon Saroma Ko, Hokkaido, Japan. H. SATOH, T. MIYAHARA, K. WATANABE and Y. YAMAGUCHI.
- P38. Phytoplankton from winter to spring 1992, in Lake Notoro, eastern Hokkaido. H. ASAMI, T. IZAWA, R. YASUTOMI, K. IMADA, S. SAKAZAKI and T. KAWAJIRI.
- P39. Primary production as estimated by ^{13}C uptake in oligotrophic lakes in northern Japan. K. IMADA, R. YASUTOMI and T. IZAWA.
- P40. Video record of bioluminescence in the deep ocean. Y. OHASHI and T. AOKI.
- P41. Phytoplankton in the Antarctic marginal ice zone. S. KANG and G. A. FRYXELL.
- P42. Estimate of natural productivity of acrylic acid and dimethyl sulfide during a summer bloom of *Phaeocystis pouchetii* in Antarctic coastal water. H. YANG, A. R. McTAGGART, A.T. DAVIDSON and H. BURTON.
- P43. An ice-active substance from Antarctic sea ice diatoms. J. A. RAYMOND, C. W. SULLIVAN and A. L. DeVRIES.
- P44. Measurement of N-15 isotope by ion-mass-spectrometry method and its application to nitrogen cycling and new production studies in marine environments. N. JIAO, R. WANG, and Q. HUANG.
- P45. Distribution and abundance of choanoflagellates in the Great Wall Bay, King George Island, Antarctica in austral summer. B. CHEN.
- P46. *In situ* impacts of UV exposure on productivity, growth and survival of Antarctic *Phaeocystis pouchetii* and diatoms. A. DAVIDSON and H. MARCHANT.
- P47. Seasonal variations of chlorophyll *a* and phytoplankton in Great Wall Bay, Antarctica in 1988/1989. B. WU, M. ZHU, F. HUANG, J. YU and R. LI.
- P48. Radionuclide deposition and primary plant succession in Eurasian Arctic. J. L. MARTIN.
- P49. The use of system approach in the estimate capacity of polar marine ecosystems with respect to polar ecology and Ocean monitoring. A. V. TYSBAN, B. V. GLEBOV and M. N. KORSAK.

D. Zooplankton/Krill/Fish

- P50. Notes on *Plakarthrium punktatisimum* (Pfeffer) ? from the Antarctic Sea. S. GAMO
- P51. Sensory responses of zooplankton through a electrophysiological method. H. SASAKI and H. SUZUKI.
- P52. Rhythmicity of chromophore turnover of visual pigment in the Antarctic amphipod *Orchomene plebs* (Crustacea; Amphipoda). T. HARIYAMA, A. TERAKITA and V. B. MEYER-ROCHOW.
- P53. Mechanisms for the formation of Antarctic krill concentrations near the South Shetland Islands. T. ICHII, N. OBITSU, H. ISHII and M. NAGANOBU.
- P54. Food environment of the Antarctic krill near the South Shetland Islands. S. KAWAGUCHI and M. SATAKE.
- P55. Variation of the composition of body length of Antarctic krill near the South Shetland Islands for the past 12 years. S. KAWAGUCHI and M. SATAKE.
- P56. Specific distribution of Antarctic krill near the South Shetland Islands. S. KAWAGUCHI, M. SATAKE and E. SAKITANI.
- P57. Gut contents of *Euphausia superba* DANA in the waters in the vicinity of the South Georgia Island. Y. NISHINO and A. KAWAMURA.
- P58. Ostracoda collected from Breid Bay and G nnerus Bank, Antarctica, during the JARE-26 Cruise. S. HIRUTA.
- P59. Possible effect of the Antarctic winter water on the locally biased distribution patterns in *Salpa thompsoni* and *Illea racovitzai*. A. KAWAMURA, K. MICHIMORI and J. MOTO.
- P60. A plan of observing fish behavior using ultrasonic pinger nearby the Syowa Station. J. HAN, Y. MIYAMOTO and E. HAMADA.
- P61. The effect of temperature on the kinetic activity of phosphofructokinase and hexokinase from the Antarctic fish *Trematomus bernachii*. E. RODRIGUES, R. ROSA, M. FUKUCHI and M. BACILA.
- P62. Purification and kinetic of phosphofructokinase and hexokinase from the Antarctic fish *Trematomus bernachii*. R. ROSA, E. RODRIGUES, M. FUKUCHI and M. BACILA.
- P63. Importance of *Euphausia pacifica* as a prey of demersal fishes off Sendai Bay, north Japan. O.

YAMAMURA, T. INADA and K. SHIMAZAKI.

- P64. Diel vertical migration and feeding of copepods under the ice at Saroma Lake. H. HATTORI and H. SAITO.
- P65. Long-term maintenance, spawning and embryonic development of arctic cod, *Boreogadus saida*. Y. SAKURAI, K. ISHII, M. YABE, T. NAKATANI, N. MASUDA, T. SUGIMOTO and T. NISHIYAMA.
- P66. Plasma osmolality and sodium concentration of the saffron cod, *Eleginus gracilis* and their cold adaptation. M. OGASAWARA, H. SATO, M. OGAWA and M. FUKUCHI.
- P67. New results on the fish and shrimp fauna of the Weddell and Lazarev Sea (Antarctica). J. GUTT, W. EKAU and M. GORNY.
- P68. Environmental impact on Fish. E. FANTA.

E. Marine Mammals/Seabirds

- P69. Adélie penguin forage Antarctic krill in shelf areas of Lützw-Holm Bay and Prince Olav Coast in summer. Y. WATANUKI, Y. MORI and Y. NAITO.
- P70. Report of the Second International Conference on Penguins Cowes, Phillip Island, Australia. K. UEDA.
- P71. The determination of birth places and migration routes of sooty shearwaters (*Puffinus griseus*) in the North Pacific in terms of stable isotope analysis. H. MINAMI, M. MINAGAWA and H. OGI.
- P72. Primary molt of the sooty shearwater (*Puffinus griseus*) in the North Pacific. K. SHIOMI and H. OGI.
- P73. Diving types of loggerhead turtles during internesting periods. K. SATO, W. SAKAMOTO, Y. NAITO, H. TANAKA and A. NISHII.
- P74. The dive depth of loggerhead turtle reflects the volume of the air in lung ? S. MINAMIKAWA, Y. NAITO, I. UCHIDA and T. HIDAKA.
- P75. Characteristics of winter migration of female Pribilof fur seals. M. KIYOTA, N. BABA, T. R. LOUGHLIN and G. A. ANTONELIS.
- P76. Feeding habit and food consumption of southern minke whales in the Ross Sea and its offshore region. T. ICHII, A. YAMAZAKI, H. KATO and Y. FUJISE.
- P77. Preliminary studies of acoustic behaviour and sound signals of *Pygoscelis papua* in Antarctica. Z. FAN.