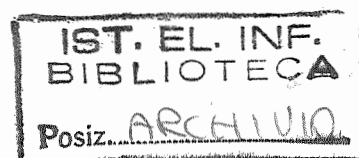


BG-45

PROGRAMMA NAZIONALE DI RICERCHE IN ANTARTIDE

SOUTH - POLE DIRECTORY LISTING

A list of the Data-set-descriptors of the Italian researches in Antarctica
under the appointment of
the Italian National Program for Antarctic Research



BG-45



PROGETTO ANTARTIDE

ANT 92/17

SOUTH-POLE DIRECTORY LISTING

A list of the Data-set-descriptors
of
the Italian researches in Antarctica
under the appointment of
the Italian National Program for Antarctic Research

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C. Carlesi - Ist. Elaborazione Informazione/CNR, Pisa
A. Carpenè - C.R.E. "Clementel"/ENEA, Bologna
M.C. Ramorino - Progetto Antartide/ENEA, Anguillara (RM)
L. Rossi - Area Ricerca CNR, Frascati (RM) and
Progetto Antartide/ENEA, Anguillara (RM)

Preface

In the following all DATA-SET descriptors (DSD) contained in the "South-Pole Directory" (vers. 1992) are listed.

The "South-Pole Directory" was a joint project between ENEA and CNR.

The IEI/CNR took care of the data digitalization and check and of the english translation (where necessary).

The ARF/CNR and the Progetto Antartide/ENEA joined the IEI/CNR in defining the acronyms of the Sensor_Names and of the Source_Names, together with the short and long names for the Data_Centers.

Finally, the ARF/CNR, together with the C.R.E. "Clementel"/ENEA, carried out the data-entry into the International Network Directory (IND) system, with the assistance of the European Space Agency in Frascati.

Surely it is possible that some errors may be found in the Directory, even after the check done by the IEI/CNR.

We hope to improve the Directory by eliminating discrepancies and errors in the coming year revision. Therefore, DSD-authors are kindly requested to notify them.

Finally, we want to thank once more all the research units (U.O.) of the National Program for Antarctic Research (PNRA) for their contribution to the "South-Pole Directory".

Guiding

The South-Pole Directory is now part of the International Directory Network via the ESAPID node. To enter the network, the NASA MASTER DIRECTORY Software had to be used, as well as the Directory Interchange Format (DIF) (for more details, please refer to the "South-Pole Directory user's manual" - Doc. PNRA, Progetto Antartide, ANT 92/11).

An INDEX is enclosed with the DATA-SET descriptors ordered by DIF-Discipline and, inside each Discipline, by DIF-sub-Discipline. When a DSD refers to more than one discipline, it is repeated in the different sections.

The last line in each DSD contains its IDENTIFICATION number (PNRA-nn). It is also reported in the INDEX, side of the DSD-title, and may be used as an help for searching.

See that, even if up to 2 phones and 2 FAX nos. are listed, the on-line "South-Pole Directory" acts slightly differently. Please, refer to the user's manual already quoted.

Truncations in the ADDRESSES as well as in the EMAIL are due to the printer restrictions: complete data may be found in the on-line Directory.

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S O U T H - P O L E D I R E C T O R Y

Title: "Marine and freshwater picoplankton (or picophytoplankton)"

Parameters: BIOLOGICAL ENTITIES > OCEAN VEGETATION
BIOLOGICAL ENTITIES > MICROORGANISMS
OCEAN COMPOSITION > PHYTOPLANKTON
OCEAN COMPOSITION > PIGMENT CONCENTRATION
OCEAN COMPOSITION > CHLOROPHYLL

Discipline: EARTH SCIENCE > OCEAN

Keywords: ROSS SEA
TERRA NOVA BAY
VICTORIA LAND
BOTANY
SEA WATER
FRESH WATER
BIOGEOGRAPHY
ECOLOGY
TROPHIC LEVELS
PRIMARY PRODUCTION
PICOPLANKTON
PICOPHYTOPLANKTON
HYDROLOGY
ROSS SEA LAKE
CIANOBACTERIA
CHLOROFICEE
CYTOFLUORIMETRY
MICROALGALIC CULTURE

Sensors: EPIFLDTC > EPIFLUORESCENCE DETECTOR
FCY > FLOW CYTOMETER
TEMSC > ELECTRON MICROSCOPE, TRANSMISSION
SEMSC > ELECTRON MICROSCOPE, SCANNING

Sources: PDUDBIOL > DEPT. OF BIOLOGY, PD

Location: ANTARCTICA

Coverage:

Data Center: PDUDBIOL > DEPT. OF BIOLOGY, PD

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Storage Medium:

Dates: Start
1988-12-25

Stop

Revision
1992-05-31

Science Rev

Future Rev
1993-05-31

PNRA > Programma Nazionale di Ricerche in Antartide

PNRA-1

SUMMARY: Research concerns a study of photoautotrophic picoplankton, very small (2x2 micro-m) planktonic microorganisms in the Antarctic aquatic ecosystems. These analysis consist in:
- the evaluation of density in this fraction to determine primary production;
- the effects of hydrological conditions (T, S%, O₂, NO₂, NO₃, etc...) on its development;
- the setting-up of cultures to carry out studies on electronic microscopy (TEM and SEM) and physiology.
The picoplankton was studied with flow cytometer ACR-1500 (by the French firm Bruker), an instrument which makes it possible to distinguish the eukaryotic cells from the prokaryotic ones (through the absence or presence of phycoerythrin respectively) and to number them according to the fluorescence emission of chlorophyll-a.
The data stored in PC-IBM 80 PS/2 by the program FW4 (Framework) which can export them in ASCII, SYLK, LOTUS 1-2-3, dBASE (II, III, III plus, IV), etc.
The data once published will be available on 3.5 disks.

REFERENCES:

- Andreoli, C., Tolomio, C., Dalla Vecchia, F. and Rascio, M., Some information on microalgae collected in the Ross sea during the Antarctic expedition 1988/89. 1st Biological Meeting of the PNRA, ROMA (june 1989), Scienze e Cultura, num. spec., 81-85.
- Andreoli, C., Scarabel, L., Spini, S. and Grassi, C., (1991), The picoplankton in Antarctic lakes of northern Victoria Land during summer 1989-1990. Polar Biology (in press).
- Andreoli, C., Spini, S. and Rascio, N., (1991), An ultrastructural study on *Iridaea cordata* (Turner) Bory from the Antarctic Sea. J. Phycol., 27(3), 5.
- Andreoli, C., Spini, S., Grassi, C. and Scarabel, L., (1992), A preliminary survey on a green microalga of the Antarctic Sea. Giorn. Bot. Ital., 126, (in press).
- Andreoli, C., Scarabel, L., Spini, S. and Grassi, C., (1992), Some observation on photoautotrophic picoplankton of Terra Nova Bay (Ross Sea - Antarctica) during the Austral Summer 1989-90. Giorn. Bot. Ital., 126, (in press).

Title: "Phytoplankton Ecology"

Parameters: OCEAN COMPOSITION > CHLOROPHYLL
OCEAN COMPOSITION > NITROGEN
OCEAN COMPOSITION > PHYTOPLANKTON
OCEAN COMPOSITION > BIOMASS

Discipline: EARTH SCIENCE > OCEAN

Keywords: PRODUCTIVITY
IRRADIANCE
TERRA NOVA BAY
PRIMARY PRODUCTION
ROSS SEA
EPONTIC ALGAE
PHYTOPLANKTON

Sensors: SPH > SPECTROPHOTOMETER
UWSR > UNDERWATER SPECTORADIOMETER
UWQU > UNDERWATER QUANTAMETER
MSCCNT > COULTER COUNTER, MULTISIZER
SFL > SPECTROFLUORIMETER

Sources: BTNS > ROSS SEA, TERRA NOVA BAY

Location: ANTARCTICA

Coverage: Minimum Latitude: 50S
Maximum Latitude: 77S
Minimum Longitude: 160E
Maximum Longitude: 180E

Data Center: FIUBDV > DEPT. OF VEGETABLE BIOL., FI

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Storage Medium: MAGNETIC DISKS
3 DATA REPORTS AND TABLES

Dates: Start
1987-06-30

Stop

Revision
1992-05-31

Science Rev

Future Rev

PNRA > Programma Nazionale di Ricerche in Antartide

PNRA-2

SUMMARY: Chl and nutrients (NO₂, NO₃, PO₄ and SiO₄) analysis, cell number counts and their identification to the level of species, together with temperature and salinity profiles and number of particles have been performed in two different expeditions: Austral summers 27/28 and 89/90, in the Ross Sea and along the route from New Zealand to the Ross Sea. In 89/90, in Terra Nova Bay (Ross Sea) the temporal variations of phytoplankton biomass has been followed with daily sampling in 3 stations, especially aimed to show the period of the phytoplankton bloom and its relation to melting ice. These are the first data obtained for this particular area of the Ross Sea. All data have been used to gain a better insight into the spatial and temporal distribution of phytoplankton biomass and related factors.

REFERENCES:

- El Sayed, S., 1984. Productivity of the Antarctic waters. A Reappraisal. In: Holm-Hansen O., L. Bolia NS E; Gilles (Eds) "Marine Phytoplankton and Productivity", Springer Verlag, Berlin, 19-34.
- Biggs, D.C., Amos, A.F., and Holm-Hansen, O., 1985. Oceanic studies of Epi-Pelagic Ammonium distributions: the Ross Sea NH₄ Flux Experiment. In: Siegfried W.R., Condy P.R. and Laws R.M. (Eds) "Antarctic Nutrient Cycles and Food Webs", Springer Verlag, Berlin, 93-103.
- Jagues, G. and Treguer, P., 1986. Ecosystemes pelagiques marins. Masson, Paris, 243.
- Hansen, H.P. and Grasshoff, K., 1983 Automated chemical analysis. In: Grassof K., Ehrhardt, M. and Kremling, K. (eds) "Methods of seawater analysis", 2nd Ed. Verlag Chemie, Weinheim, 419
- Wilson, D.L., Smith, W.O.Jr. and Nelson, D.M., 1986 Phytoplankton bloom dynamics of the Western Ross Sea ice edge. I Primary productivity and species-specific production. Deep-Sea Res: , 33 (10), 1375-1387.

Title: "Very-broad band seismographic data"

Parameters: GEODYNAMIC FEATURES > SEISMIC
GEODYNAMIC FEATURES > EARTHQUAKES

Discipline: EARTH SCIENCE > INTERIOR AND CRUST

Keywords: VICTORIA LAND
TERRA NOVA BAY
SEISMOLOGY
BROAD BAND SEISMOLOGY
PASSIVE SHOOTING
LOCAL SEISMIC EVENTS
TELESEISMS
LONG PERIOD SEISMOLOGY

Sensors: BBSMS > VERY-BROAD BAND SEISMIC SENSORS
ADCDL1 > 24 BIT A/D CONVERTER AND DATA LOGGER, QUANTAGRATOR

Sources: BTNT > TUNNEL IN GRANITE, TERRA NOVA BAY STATION

Location: ANTARCTICA

Coverage:

Data Center: MDC > MEDNET DATA CENTER

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Storage Medium: MAGNETIC DISK
MAGNETIC TAPES

Dates: Start
1990-01-17

Stop

Revision
1992-05-31

Science Rev

Future Rev
1993-05-31

PNRA > Programma Nazionale di Ricerche in Antartide

PNRA-3

"Very-broad band seismographic data"

SUMMARY: The data set contains very-broad band seismographic data, covering the frequency range between 8Hz and 10-5Hz with 140db of linear dynamic range. That current data refer to the temporary periods of operation during the installation. Starting January 1991 the seismograph will start continuous operation-due to the installation inside a tunnel in granitic rock, signal-to-noise ratio is expected to be good. The current data set is in part contaminated by the transient release of stresses induced during installation. The coverage depends on earthquake magnitude, but certainly includes local ($D < 200$ km) events above $M=3$ and teleseism with $M \geq 5$. Data for the first time span were recorded continuously, whereas data for the second period are triggered.

REFERENCES:

Iris, 1984, science plan for a new global seismograph network, Iris inc., Washington D.C.. Wielandt E. and J.M. Steim, a digital very-broad band seismograph, annales geophysicae, 483, 227-232.

Title: "Biology of antarctic molluscs studies on heavy metals"

Parameters: BIOLOGICAL ENTITIES > MINOR SPECIES

Discipline: EARTH SCIENCE > OCEAN

Keywords: TERRA NOVA BAY
ENVIRONMENTAL IMPACT
TRACE ELEMENTS
PHYSIOLOGY
BIOLOGY
METABOLISM
ENZYME
CYTOCHEMISTRY
CYTOLOGY
BIOCHEMISTRY
ADAPTATION
HEAVY METALS
MOLLUSCA
ROSS SEA

Sensors: AASPH > ATOMIC ABSORPTION SPECTROPHOTOMETER
ILAB1 > INSTRUMENTATION LABORATORY, IL S19
ILAB2 > INSTRUMENTATION LABORATORY, IL 740 CARBONROD

Sources: PIUDBSIP > DEPT. OF EXPER. BIOMEDICINE, PI

Location: ANTARCTICA

Coverage:

Data Center: PIUDBSIP > DEPT. OF EXPER. BIOMEDICINE, PI

Originating Center: PIUDBSIP

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Storage Medium: MAGNETIC DISK, 760KB

Dates: Start
1987-12-01

Stop

Revision
1992-05-31

Science Rev

Future Rev
1993-05-31

PNRA > Programma Nazionale di Ricerche in Antartide

PNRA-4

SUMMARY: This data set contains data of concentrations of heavy metals (Cu, Fe, Mn, Zn, Cd) in the Antarctic Bivalve *Adamussium colbecki*. Gills, digestive glands, kidneys, gonads (male and female gonad), muscle were utilized. Data are structured and elaborated by DB3 system.

REFERENCES:

Cognetti Alfinito, G., Mauri, M., Nigro, M., Orlando, E., Panichi, M. and Regoli, F., Contributo alla conoscenza del bivalve antartico *Adamussium colbecki* (Smith) della Baia di Ross: metalli pesanti. 1st Biological meeting of the Progetto Nazionale Ricerche in Antartide, Roma 1989, Scienza e Cultura (1991), 343-363.

Cognetti Alfinito, G., Mauri, M., Nigro, M., Orlando, E., Panichi, M. and Regoli, F., Heavy metals in the digestive gland of the bivalve *Adamussium colbecki* (Smith), XXV European Marine Biology Symposium, Ferrara 1990.

Mauri, M., Orlando, E., Nigro, M. and Regoli, F., Heavy metals in the Antarctic scallop *Adamussium colbecki* (Smith), Mar. Ecol. Progr. Ser. 1990, 67, 27-33.

Nigro, M., Orlando, E. and Regoli, F., Ultrastructural localization of metal binding sites in the kidney of the Antarctic scallop *Adamussium colbecki* (Smith), Mar. Biol. 1992, in press.

Berkman, P.A. and Nigro, M., Trace metal concentrations in scallops around Antarctica: extending the "mussel watch" program to the southern ocean. Mar. pollut. bull 1992, in press.

Nigro, M., Orlando, E. and Regoli, F., Ultrastructural study of intracellular metal binding sites in the kidney cells of the Antarctic scallop *Adamussium colbecki* (Smith), XXVI European Marine Biology Symposium, Middelburg, The Netherlands 1991.

Title: "Aeronomy: measurements of the electronic ionospheric density through oblique and vertical radio soundings"

Parameters: CHARGED PARTICLES
ATMOSPHERIC COMPOSITION

Discipline: SPACE PHYSICS > IONOSPHERIC SCIENCE

Keywords: TERRA NOVA BAY
AERONOMY
ELECTRON DENSITY
IONOSPHERIC CHARACTERISTICS
USEFUL FREQUENCY SPECTRUM
IONOSPHERE
RADIOWAVE PROPAGATION
ATMOSPHERE
GEOPHYSICS
CENTRAL VICTORIA LAND

Sensors: RSP1 > RADIO SOUNDING PROBE, BARRY RESEARCH IONOSPHERIC
OSITRA > OBLIQUE IONOSPHERIC SOUNDING IMPULSIVE 2ND TRANSMITTER
OSRCV > OBLIQUE SOUNDING RECEIVER

Sources: BTN > GROUND STATION, TERRA NOVA BAY STATION

Location: ANTARCTICA

Coverage:

Data Center: RMAING > INST. FOR NATIONAL GEOPHYSICS, RM

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Storage Medium: PAPER
MAGNETIC DISK
MAGNETIC TAPES

Dates: Start

Stop

Revision
1992-05-31

Science Rev

Future Rev

PNRA > Programma Nazionale di Ricerche in Antartide

PNRA-5

"Aeronomy: measurements of the electronic ionospheric density
through oblique and vertical radio soundings"

SUMMARY: The ionospheric measurements campaign will start with the 92/93 expedition.
Therefore no data is presently available.

Title: "Geomagnetism: data of time variations of the magnetic field
recorded at fixed time sampling"

Parameters: GEODYNAMIC FEATURES > MAGNETIC FIELDS

Discipline: EARTH SCIENCE > INTERIOR AND CRUST

Keywords: CENTRAL VICTORIA LAND
TERRA NOVA BAY
GEOMAGNETISM
MAGNETIC COMPONENTS
TERRESTRIAL MAGNETISM
GEOPHYSICS

Sensors: NPMG > MAGNETOMETER, NUCLEAR PRECESSION
FMG > MAGNETOMETER, FLUXGATE THREE COMPONENTS

Sources: BTN > GROUND STATION, TERRA NOVA BAY STATION

Location: ANTARCTICA

Coverage:

Data Center: RMAING > INST. FOR NATIONAL GEOPHYSICS, RM

Originating Center: RMAING

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Storage Medium: MAGNETIC DISK
MAGNETIC TAPES

Dates: Start
1987-01-03

Stop
1989-02-07

Revision
1992-05-31

Science Rev

Future Rev
1993-05-31

PNRA > Programma Nazionale di Ricerche in Antartide

PNRA-6

"Geomagnetism: data of time variations of the magnetic field
recorded at fixed time sampling"

SUMMARY: The measured parameters are the three components of the geomagnetic field,
measured every 1 min. The resolution is 1nT; the processing provides the data
with an absolute value in TU.

Title: "Absolute gravity measurements"

Parameters: GEODYNAMIC FEATURES > GRAVITY FIELDS

Discipline: EARTH SCIENCE > INTERIOR AND CRUST

Keywords: GEOLOGY
MINERALOGY
GEOPHYSICS
GRAVIMETRY

Sensors: SFMGV > GRAVIMETER, SYMMETRICAL FREE MOTION

Sources: BTN > GROUND STATION, TERRA NOVA BAY STATION

Location:

Coverage:

Data Center: TORIMGC > INST. FOR METROLOGY "G. COLONNETTI", TO

Originating Center: TORIMGC

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Investigator: Cerutti
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Storage Medium: 100 PRINTER SHEETS

Dates: Start
1990-12-15

Stop

Revision
1992-05-31

Science Rev

Future Rev

PNRA > Programma Nazionale di Ricerche in Antartide

PNRA-7

"Absolute gravity measurements"

SUMMARY: The data set contains the results of absolute gravity measurements obtained with the transportable apparatus of property of the Istituto di Metrologia "G. Colonnetti" CNR - Torino, in the Italian base "Stazione di Baia di Terra Nova" in Antarctic Region Terra Vittoria. With the same apparatus were established more than sixty absolute gravity stations in the world in Europe, America and Asia, during the last 15 years. The apparatus, using the symmetrical free motion of a body in vacuum, is periodically tested by comparison with other similar instruments existing in the world, to avoid possible systematic errors. Three comparisons were carried out in the last 8 years, in 1982, 1985 and 1989 in B.I.P.M. Laboratories in Se'vres. The available results refer to the first absolute gravity measurements in the Antarctic Region.

REFERENCES:

- Sakuma, A., Recent Developments in the Absolute Measurements of Gravitational Acceleration. NBS Special Publication 343. Washington, 447-456, 1971.
- Alasia F., Cannizzo L., Cerutti G., Marson I. Absolute Gravity Acceleration Measurements: Experiences with a transportable Gravimeter. Metrologia, 18, 221-229, 1982.
- Cannizzo L., Cerutti G., Marson I. Absolute Gravity Measurements in Europe. Il Nuovo Cimento, vol. 1C, N1, 39-85, 1978.
- Marson I., Faller I.E. g - The Acceleration of Gravity: its measurement and its importance. J. Phys. E. Sci. Instrum., 19, 22-32, 1986.

Title: "Petrographic data"

Parameters: GEOLOGICAL PARAMETERS > PETROLOGY
GEOLOGICAL PARAMETERS > GEOCHEMICAL ANALYSIS
GEOLOGICAL PARAMETERS > AGE DETERMINATIONS

Discipline: EARTH SCIENCE > INTERIOR AND CRUST

Keywords: NORTH VICTORIA LAND GRANITOIDES
MOUNT OVERLORD
COULMAN ISLAND
MALTA PLATEAU
DANIELL PENINSULA
MOUNT RITTMANN
GRANITE HARBOUR INTRUSIVES
PETROGRAPHY
MODAL ANALYSIS
CHEMICAL ANALYSIS
ROCKS ANALYSIS
VOLCANOLOGY

Sensors:

Sources:

Location: ANTARCTICA

Coverage: Minimum_Latitude: 72
Maximum_Latitude: 74
Minimum_Longitude: 164
Maximum_Longitude: 170

Data Center: PIUDST > DEPT. OF EARTH SCIENCES, PI

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Storage Medium: MAGNETIC DISK

Dates: Start 1984-12-01 Stop

Revision 1992-05-31

Science Rev

Future Rev

PNRA > Programma Nazionale di Ricerche in Antartide

PNRA-8

SUMMARY: The analytical data of this data base are open to enhancement due to the addition of elements or isotopic relations. Data have been collected through a variety of analytical methods such as SiO₂, TiO₂, Al₂O₃, CaO, MnO, K₂O, P₂O₅ in XRF, FeO by titration, MgO N₂O by A.A., REE with plasma or ICP, isotopic relations in mass spectrometry Ba, La, Ce, Sr, Nb, Zr, Rb, V, Cr, Ni in XRF.

REFERENCES:

- Armienti, P., Ghezzo, C., Innocenti, F., Manetti, P., Rocchi, S. and Tonarini S., (1990), Isotope Geochemistry and petrology of granitoid suites from Granite Harbour Intrusives of the Wilson terrane, North Victoria Land, Antarctica. - *European Journal of Mineralogy*, 2, 103-123.
- Armienti, P., Ghezzo, C., Innocenti, F., Manetti, P., Rocchi, S. and Tonarini, S., (1990), Granite Harbour Intrusives from North Victoria Land between David and Campbell Glaciers: new geochronological data. - *Zentralblatt für Geologie und Paläontologie*, fasc. n.1, 63-74, 1990.
- Armienti, P., Ghezzo, C., Innocenti, F., Manetti, P., Rocchi, S. and Tonarini, S., (1989), Genesis and evolution of Granite Harbour Intrusives of Wilson Terrane: geochemical and isotopic evidences. Preprints of the II meeting of Earth Sciences in Antarctica, Siena 27-28 September 1988, 33-137.
- Armienti, P., Ghezzo, C., Innocenti, F., Manetti, P., Rocchi, S. and Tonarini S., (1989), Palaeozoic and Cainozoic intrusives of Wilson Terrane: geochemical and isotopic data. - *Mem. Soc. Geol. It.*, (1988), 43, 67-75.
- Armienti, P., Civetta, L., Innocenti, F., Manetti, P., Tripodo, A., Villari, L. and Vita G., (1990), New petrological and geochemical data on Mt. Melbourne Volcanic Field, Northern Victoria Land, Antarctica. (II Italian Antarctic Expedition) Proceedings of the meeting "Earth Science Investigation in Antarctica", Siena 4,5,6 Oct. 1989. RICCI C.A. ed., *Mem. Soc. Geol. It.*, 46, 397-424.
- Armienti, P., Tripodo, A., (1990), Petrography and chemistry of lavas and comagmatic xenoliths of Mt. Rittmann, a volcano discovered during the IV Italian expedition in Northern Victoria Land (Antarctica). Proceedings of the meeting "Earth Science Investigation in Antarctica", Siena 4,5,6 Oct. 1989. RICCI C.A. ed., *Mem. Soc. Geol. It.*, 46, 427-451.
- Carmignani, L., Ghezzo, C., Gosso, G., Lombardo, B., Lombardo, G., Meccheri, M., Montrasio, A., Petrusati, P.C. and Salvini, F. (1987), Geological Map of the area between David and Mariner Glaciers, Victoria Land, Antarctica. *Memorie Soc. Geol. Ital.*, 33.
- Carmignani, L., Ghezzo, C., Gosso, G., Lombardo, B., Lombardo, G., Meccheri, M., Montrasio, A., Petrusati, P.C., Salvini, F., (1987), GANOVEX(III) (1987), Geological Map of North Victoria Land, Antarctica, 1: 500000 - Explanatory notes. - *Geol. Jb.*, German Antarctic North Victoria Land Expedition 1982/83. 2, 7-79.
- Kyle, P.R., (1989), McMurdo Volcanic Group western Ross Embayment. In: *Volcanoes of the Antarctic Plate and Southern Oceans*, LeMasurier and Thomson Eds. AGU Antarctic Research Series., 48, 487.
- Kyle, P.R. and Muncy, H.L., (1989), Geology and geochronology of McMurdo volcanic group rock in the vicinity of Lake Morning, McMurdo Sound, Antarctica. *Antarctic Science*, 1, 4, 345-350.
- Worner, G. and Viereck, L., (1989), The Mt. Melbourne volcanic Field (Victoria Land, Antarctica) I. Field observations. *Geol. Jb.*, 38, 369-393.
- Worner, G., Viereck, L., Hertoghen, J. and Niephaus, H. (1989), The Mt. Melbourne volcanic field (Victoria Land, Antarctica). II. Geochemistry and magma genesis. *Geol. Jb.*, E38, 395-433.

Title: "Marine microbial data from direct and indirect counts and bacterial taxonomy"

Parameters: BIOLOGICAL ENTITIES > MICROORGANISMS
OCEAN COMPOSITION > BIOMASS

Discipline: EARTH SCIENCE > OCEAN

Keywords: ROSS SEA
TERRA NOVA BAY
PENGUIN BAY
ENVIRONMENT
ECOLOGY
SEA WATER
BIOLOGY
BIOMASS
TIME DISTRIBUTION
SPACE DISTRIBUTION
BIOLOGICAL OCEANOGRAPHY
SEA SPECIES
MORPHOLOGICAL PROPERTIES
BIOCHEMICAL PROPERTIES
MICROBIOLOGY
BACTERIOLOGY
MARINE VIBRIONES
PICOPLANKTON
MICROBIAL ECOLOGY

Sensors: SMP1 > SAMPLER, NISKIN
SPR > SPIRAL SYSTEM
EPIFLMSC > EPIFLUORESCENT MICROSCOPE
SFL > SPECTROFLUORIMETER
LMSC > LASER MICROSCOPE, SCANNING
CCNT > COULTER COUNTER

Sources: RVPQ > RESEARCH VESSEL, POLAR QUEEN
BTNS > ROSS SEA, TERRA NOVA BAY
AVM > AUXILIARY VESSEL, MALLIPO

Location: ANTARCTICA

Coverage: Minimum Latitude: 74S
Maximum Latitude: 75S
Minimum Longitude: 163W
Maximum Longitude: 171E

Data Center: MEUDBAEM > DEPT. OF ANIMAL BIOL. SEA ECOLOGY, ME

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Storage Medium: MAGNETIC DISK
SLIDES

Dates: Start
1988-01-05

Stop

Revision
1992-05-31

Science Rev

Future Rev
1993-05-31

PNRA > Programma Nazionale di Ricerche in Antartide

PNRA-9

"Marine microbial data from direct and indirect counts and bacterial taxonomy"

SUMMARY: These data concern the results of direct counts of the micro organism with picoplanktonic sizes (2-0.22 micromm diameter). Also the data refer the cultural counts of aerobic heterotrophic bacteria able to grow on marine agar and its morphological and biochemical characteristics.

REFERENCES:

- Bruni, V. et al., Preliminary data on marine microflora in Terra Nova Bay (Antarctica). Nat. Sc. Com. Ant. Ocean. Camp. 1987-1988. Data rep. (1990).
- Maugeri, T.L. et al., On the characteristic of the microflora in the Terra Nova Bay waters. (Antarctica). In Microbiological, 14, 55-64, 1991. Quarterly Journal of Microbiological Sciences.

Title: "Radionuclide and metal analyses in Antarctic samples"

Parameters: GEOGRAPHY AND LAND COVER > SNOW
GEOGRAPHY AND LAND COVER > LAKES
GEOGRAPHY AND LAND COVER > SURFACE VEGETATION
Discipline: EARTH SCIENCE > LAND

Keywords: ROSS SEA
TERRA NOVA BAY
RECENT SEDIMENTATION
ENVIRONMENTAL IMPACT
TRACE ELEMENTS
SNOW DATING
RADIONUCLIDES
GAMMA ANALYSIS
CHEMICAL MOBILITY
TERRA NOVA BAY

Sensors: LEPHS > PHOTON SPECTROMETER, LOW ENERGY
GEDTC > INTRINSIC GERMANIUM DETECTOR
TRXRFLS > X RAY FLUORESCENCE SPECTROMETER, TOTAL REFLECTION

Sources: PDRICTR > INST. FOR RADIOELEMENT CHEMSTR. TECHNLG., PD

Location: ANTARCTICA

Coverage: Minimum Latitude: 77S
Maximum Latitude: 73S
Minimum Longitude: 160E
Maximum Longitude: 165E

Data Center: PDRICTR > INST. FOR RADIOELEMENT CHEMSTR. TECHNLG., PD

Originating Center: PDRICTR

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Storage Medium: HARD DISKS 80 MB.

<u>Dates:</u>	Start	Stop	Revision	Science Rev	Future Rev
	1989-01-01		1992-05-31		

PNRA > Programma Nazionale di Ricerche in Antartide

PNRA-10

SUMMARY: The research program of our Operative Unit regards the definition of the nature, distribution and mobility of some radionuclides in the Antarctic environment. We report some preliminary results concerning the radiochemical analyses performed on snow, lichen (*Umbilicaria Decussata*) and moss (*Bryum Algens Card.*) samples collected near the Italian Base (Ross Sea - Terra Nova Bay) in Antarctica, During the 1988-89 campaign. Data on Pb-210 and Cs-137 for analyzed samples and some preliminary results on multielemental characterization of the snow water are reported. The first consideration regards the net total amount of unsupported Pb-210 which results at about 4-5 Bq/m². This must be confirmed for the all area in order to match the basic condition of the constancy of the flux (at least on the average). If this were the case, a net accumulation of about 5 kg/m² of snow would be obtained, with an apparent average growth of the deposit of about 2 cm/y (no significative snow compactation differences have been observed). In order to obtain some other indicative data on fluxes, the Pb-210 activities on lichens and mosses have also been determined on the basis of the surface of ground covered by the samples. The moss appears to be the best interceptor with 175 Bq/m² of unsupported Pb-210 whereas 24 Bq/m² for the lichens. If the aerosol particles flux from air to ground can be considered practically constant (owing to relatively small sampling area), the comparison of total unsupported Pb-210 present in snow, lichens and mosses per unit area, clearly indicate the importance of the mobility of the chemical elements in determining their final fate. The analysis of the other samples collected in the different sampling location are now being performed. Preliminary data on metal content of snow samples have also been obtained in order to achieve useful information from natural analogues of radioactive elements (e.g. iron for americium). Data are preliminary and they need further confirmations.

REFERENCES:

Battiston, G., Degetto, S., Gerbasi, R. and Sbrignadello, G., Radionuclide analysis in Antarctic coastal. samples: methods and procedures, Atti del Convegno 'Environmental Impact', Roma, 8-9 Giugno 1990, 143.

Title: "Low Frequency Observation of the Cosmic Background
Radiation at the Amundsen-Scott Base"

Parameters: RADIANCE AND IMAGERY > RADIO WAVE

Discipline: ASTRONOMY > RADIO ASTRONOMY

Keywords: AMUNDSEN SCOTT BASE
SKY TEMPERATURE
ATMOSPHERIC TEMP. EMISSION
ASTROPHYSICS
COSMOLOGY
RADIOMETER
ATMOSPHERE

Sensors: RD1 > RADIOMETER, 820 MHZ
RD2 > RADIOMETER, 2.5 GHZ

Sources: AMSCO > AMUNDSEN SCOTT BASE

Location: ANTARCTICA

Coverage:

Data Center: MIUDFISI > DEPT. OF PHYSICS , MI

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Storage Medium: MAGNETIC DISK
MAGNETIC TAPES

Dates: Start
1989-11-06

Stop
1991-12-25

Revision
1992-05-31

Science Rev

Future Rev
1993-05-31

PNRA > Programma Nazionale di Ricerche in Antartide

PNRA-11

"Low Frequency Observation of the Cosmic Background
Radiation at the Amundsen-Scott Base"

SUMMARY: The absolute temperature of the Cosmic Background Radiation, a Relic of the Big Bang explosion, has been measured in 1989 and 1991 at 0.82 and 2.5 GHz from the Amundsen Scott Base at the South Pole.
The measurements are intended to find the deviations from a planckian distribution in the Rayleigh Jeans part of the radiation spectrum and get information about the physical processes, in particular the birth of galaxies, which marked the evolution of our Universe.
They are part of a joint program between the University of Milano and the Lawrence Berkeley Laboratory-University of California-Berkeley.
As a byproduct from our observations we get measurements of the atmospheric absorption at decimetric wavelength. The 1989 results have been already published (Ap. J., 378, 550, 1991). The data reduction for the 1991 campaign is underway.

REFERENCES:

- Kogut, A. et al., Low Frequency Measurements of the CMB Spectrum. AIP Conf. Proc., 198, 156, (1989).
- Sironi, G., Inzani, P., Limon, M. and Marchioni, C., Evaluation of small signals with a differential radiometer. Measur. Sci. Technol., 1, 25, (1990).
- Sironi, G., Bonelli, G. and Limon, M., The brightness Temperature of the South Celestial Pole and the temperature of the Cosmic Background Radiation measured at 36.6 and 12 cm wavelength. Ap.J., 378, 550, 1991
- Smoot, G. F., De Amici, G., Bensadounn, M., Kogut, A., Levin, S., Limon, M., Sironi, G., Bersanelli, M. and Bonelli, G., The long wavelength spectrum of the Cosmic microwave background, Antar. J., in press.

Title: "Marine interstitial microfauna: morphology and eco-genetic
adaptive strategies in ciliated protozoa"

Parameters: BIOLOGICAL ENTITIES > MINOR SPECIES
OCEAN COMPOSITION > SALINITY
OCEAN COMPOSITION > PH
OCEAN COMPOSITION > MINOR SPECIES

Discipline: EARTH SCIENCE > OCEAN

Keywords: TERRA NOVA BAY
ROSS SEA
WOOD BAY
SEA WATER
ENVIRONMENTAL PARAMETERS
TEMPERATURE
PH
ZOOLOGY
PROTOZOA
MOLECULAR BIOLOGY

Sensors: SEMSC > ELECTRON MICROSCOPE, SCANNING
HPLC > LIQUID CHROMATOGRAPH, HIGH PERFORMANCE
SPH > SPECTROPHOTOMETER
PMCR > POLIMERASE CHAIN REACTION THERMAL CYCLE

Sources: CMUDBC > DEPT. OF MOLEC. CELL. ANIMAL BIOL., CM

Location: ANTARCTICA

Coverage: Minimum Latitude: 75S
Maximum Latitude: 74S
Minimum Longitude: 164E
Maximum Longitude: 165E

Data Center: CMUDBC > DEPT. OF MOLEC. CELL. ANIMAL BIOL., CM

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Storage Medium: COLD ROOM AT 2-4_C

Dates: Start
1989-01-02

Stop

Revision
1992-05-31

Science Rev

Future Rev

PNRA > Programma Nazionale di Ricerche in Antartide

PNRA-12

SUMMARY: Samples of interstitial microfauna have been collected from different areas of Ross Sea from December 1988 to February 1989. These samples were particularly rich in ciliates and species belonging to the following genera were identified: *Aspidisca*, *Cyclidium*, *Diophrys*, *Epiclontes*, *Euplotes*, *Paraurostyla*, *Pleuronema*, *Strombidium*, *Uronema*, and *Uronichia*. Particular attention was focused on species of *Euplotes*, numerous strains, also with the aid of the scanning electron microscope, have revealed that they belong to at least three new species which have been denominated *E. focardii*, *E. nobilii*, and *E. euryhalinus*. They fall in the group of *Euplotes* species characterized by a dorsal argyrome of the "double" type and a set of ten fronto-ventral cirri. In *E. focardii* it was possible to isolate two strains (TN1 and TN14) which form mating pairs when are mixed together, since one expresses a mating type different from that of the other. The entire process of mating (that takes from the time of cell mixing to the mating pair separation) requires about 7-8 days to be completed and constantly lead to death of one partner, since it undergoes a dramatic decrease in cell body dimension and fails to reorganize cortical structures and the nuclear apparatus. The biochemical analysis of cell filtrate recovered from strain TN1 of *E. focardii* revealed the presence of a polypeptide, which is constitutively secreted by the cells and shows a mating pheromone-like activity. This polypeptide, of about 5,000 of molecular weight, was partially purified by means of a three step procedure involving adsorption on reverse-phase C18 cartridges, filtration on Bio-Gel P-10, and ion-exchange chromatography on a Mono Q column applied to a HPLC system. The same *E. focardii* strain was also used to characterize the structure of conservative genes such as those for ribosomal RNA and ALPHA-and-BETA-tubulin, which are amplified to thousands of copies in ciliate macronucleus and can be promptly identified using probes obtained from other species. A particularly unusual organization was found for the beta-tubulin gene, which is represented by three macronuclear isoforms of 1,600, 1,900, and 2,150 bp, respectively. Since all these isoforms were shown to be coexpressed, it was suggested that the special organization of *E. focardii* beta-tubulin gene reflects a specific adaptation of the organism to live at a low temperature that imposes a low rate of mRNA transcription. Living reference strains of three new Antarctic *Euplotes* morphospecies - *E. focardii*, *E. nobilii* and *E. euryhalinus* - are maintained in our laboratory (at the Department of Molecular, Cellular and Animal Biology of University of Camerino) and are available to the scientific community upon request, for the cost of mailing. Living reference strains of ciliated protozoa are currently maintained in a cold room at 2-4 degree C the strains are under a rythm of 16h of darkness and 8h of exposure to very weak light the strains are supplied twice a month with green algae *dunaliella tertiolecta*.

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Title: "Ground surveys. Magnetic time variations studies. Paleomagnetic and rock-magnetic data - geophysical measurements on the glaciers"

Parameters: GEODYNAMIC FEATURES > MAGNETIC FIELDS
GEODYNAMIC FEATURES > GRAVITY FIELDS
GEOLOGICAL PARAMETERS > SEDIMENTARY ROCKS
HYDROLOGIC PARAMETERS > GLACIERS
HYDROLOGIC PARAMETERS > SEDIMENTATION

Discipline: EARTH SCIENCE > INTERIOR AND CRUST
EARTH SCIENCE > OCEAN

Keywords: VICTORIA LAND
EARTH SCIENCE
MAGNETO VARIATION ANALYSIS
MAGNETIC TRACERS
ROSS SEA
VLF MEASUREMENTS ON GLACIER
MAGNETIC MAPPING
TVC TERRESTRIAL MAGNETIC FIELD
TVC ROCKS MAGNETIZATION
TVC GRAVIMETRIC RELIEF
MAGNETIC SURVEY
PLACIOLOGY
SEDIMENTOLOGY
MARINE GEOLOGY
GEOMAGNETISM
GRAVIMETRY
PALEOMAGNETISM
ROCKS MAGNETISM

Sensors: PMG1 > PROTON MAGNETOMETER, SCINTREX MP3
PMG2 > PROTON MAGNETOMETER, GEOMETRICS G856
PMG3 > PROTON MAGNETOMETER, ELSEC 770 PPM
GV1 > GRAVIMETER, LA COSTE ROMBERG G927
TMG1 > MAGNETOMETER THEODOLITE, SOKKISHA GSI
PC1 > PORTABLE COMPUTER, COMPAQ P3
FMG1 > MAGNETOMETER FLUXGATE, EDA FM 100B
DIMG1 > MAGNETOMETER DECLINATION AND INCLINATION, EDA DIM 100
GMVG1 > GEOMAGNETIC VARIOGRAPH, ASKANIA GV3
MGS1 > MAGNETIC SUSCEPTIBILITY SYSTEM, BARTINGTON MS2
MGS2 > MAGNETIC SUSCEPTIBILITY SYSTEM, SCINTREX SM5
MGS3 > MAGNETIC SUSCEPTIBILITY SYSTEM, KT5
VLFEMR1 > VLF-EM AND RESISTIVITY METER, GEONICS EM 16+16R
VLFTRA1 > VLF PORTABLE TRANSMITTER, GEONICS TX 27
ML1 > MICROLOGGER, CAMPBELL 21X
IF1 > CASSETTE INTERFACE, CAMPBELL C20

Sources: BTNM > ITALIAN MAGNETIC STATION, TERRA NOVA BAY STATION

Location: ANTARCTICA

Coverage: Minimum Latitude: 78S
Maximum Latitude: 72S
Minimum Longitude: 161E
Maximum Longitude: 166E

Data Center: GEUDST1 > DEPT. OF EARTH SCIENCES GEOPHYS. SECT., GE

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Storage Medium: MAGNETIC TAPES
OPTICAL DISKS
MAGNETIC DISK

Dates: Start
1986-01-01

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Revision
1992-05-31

Science Rev

Future Rev
1993-05-31

PNRA > Programma Nazionale di Ricerche in Antartide

PNRA-13

SUMMARY: During the first Italian Antarctic expedition 1985-'86, a ground geomagnetic survey was carried out in the period between January 1 and February 15, 1986, in Terra Nova Bay region. An area of about 20,000 sq km between Long. 161E and 166E, and Lat. 74S and 75.5S was covered (F) and dip (J) were measured at 63 stations by using Elsec proton magnetometers and GSI type Sokkisha magnetometer. Data have been controlled by the geomagnetic observatory at Scott Base, so that measurements taken in disturbed days were repeated.

Three main goals were accomplished in the 1986-'87 scientific expedition in Terra Nova Bay, Antarctica, following and extending the 1985-'86 geomagnetic research program. The activities include: i) the installation of a summer geomagnetic Observatory in the Italian Base area, to record absolute values of total magnetic field F, and the magnetic elements H, D and Z. The Observatory instruments have monitored the geomagnetic field by means of proton precession and fluxgate magnetometers; data have been digitally stored. A number of more than 60 absolute measurements were made, almost on a daily basis; ii) the enrichment of the 1985-'86 geomagnetic network of survey points in Terra Nova Bay area. The surveyed area lies now within a range between the latitudes of 75: 15 and 73: 55S, and between the longitudes of 161: 30E and the Ross Sea coast. Survey data reduction, using the Observatory data to remove time variations, was also made; iii) the installation of two remote data acquisition system, to record automatically H, D and Z time variations, was made at Hayes head and Cape Philippi.

Within the frame of the geophysical investigation of Central Victoria Land (Eastern Antarctica), between the Transantarctic Mountains and Terra Nova Bay, a ground geomagnetic survey was performed, in cooperation with other data acquisition programs of Earth Sciences Group.

Some results of this survey, related to the compilation of geomagnetic field maps, are presented with a description of the main outcropping lithological units, made on the basis of the rock magnetic susceptibility data collected during the survey.

A qualitative interpretation of the geomagnetic results, from geostructural standpoint, is made along a transect which, in direction SSW-NNE crosses the area investigated during the three first Italian expeditions in Antarctica. Rock-susceptibility measurements and sampling for paleomagnetic studies were also made in the same area, as well as a set of geologic and magnetic observations for selecting a suitable site for a geomagnetic observatory. The total magnetic field between Mount Melbourne volcano and Linker Glacier is very disturbed; a magnetic high occurs toward the north of Mount Melbourne. In land another high is oriented NNW-SSE and coincident with the outcropping of Jurassic volcanics of the Ferrar Supergroup to the west of Priestley Glacier. In the southern section, less intense magnetic disturbances are due to different susceptibilities in the basement rocks. The paleomagnetic studies has been carried out so far on volcanic rocks from 19 sites in the Mount Melbourne area. Demagnetization tests show minor secondary components of magnetization, easily removed with progressive cleaning. Directions of remanent magnetization cluster around the present pole (mean D=146, I=-82.2), with the exception of three sites with low inclinations. 15 sampling sites are located in the lower part of the volcanic apparatus and in satellite plugs and dykes; the polarity is reversed at six of these sites. The upper volcano has been sampled at four sites, all of normal polarity.

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- Bozzo, E. and Meloni, A. (1989), Technical Description of the 1: 250,000 Map of the Total Magnetic Field Intensity, Central Victoria Land, East Antarctica. PNRA, CNR-ENEA, ROMA.
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Title: "Geological mapping of the suture zone amongst Wilson, Bowers and Robertson Bay Terranes"

Parameters: GEODYNAMIC FEATURES > STRUCTURES
GEOLOGICAL PARAMETERS > STRATIGRAPHY

Discipline: EARTH SCIENCE > INTERIOR AND CRUST

Keywords: NORTH VICTORIA LAND
MARINE GLACIER AREA
GEOLOGICAL MAPPING
SUTURE ZONE
DESSERT UNIT

Sensors: CMP > COMPASS
ALT > ALTIMETER

Sources: BTN > GROUND STATION, TERRA NOVA BAY STATION

Location: ANTARCTICA

Coverage: Minimum_Latitude: 74S
Maximum_Latitude: 71S
Minimum_Longitude: 165E
Maximum_Longitude: 171E

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Storage Medium: HAND DRAWN PAPER
MAGNETIC DISK

Dates: Start
1988-12-13

Stop
1989-02-18

Revision
1992-05-31

Science Rev

Future Rev
1993-05-31

PNRA > Programma Nazionale di Ricerche in Antartide

PNRA-14

"Geological mapping of the suture zone amongst Wilson, Bowers and Robertson Bay Terranes"

SUMMARY: Data here presented are referred to IV expedition and particularly to geological mapping of the suture zone amongst Wilson, Bowers and Robertson Bay Terranes. It is possible that other forms (i.e. from Oggiano, Montrasio, Meccheri, Pertusati) will overall this one. The nature of data (hand drawn papers, sometimes in colors) make reproducibility very difficult.

REFERENCES:

Kleinschmidt, G., Roland, N.W. and Shubert, W., The metamorphic basement complex in the mountaineer range, North Victoria Land, Antarctica. Geol. Jb., 860, 253-263.

Ganovex team: Geological map of North Victoria Land, Antarctica, 1: 500.000, explanatory notes. Geol. Jb., 866, 7-79.

Title: "Trace elements in marine organism"

Parameters: OCEAN COMPOSITION > TRACE ELEMENTS

Discipline: EARTH SCIENCE > OCEAN

Keywords: ROSS SEA
TERRA NOVA BAY
TRACE ELEMENTS
MARINE ORGANISMS
MERCURY
SELENIUM

Sensors: CVAAS > ATOMIC ABSORPTION SPECTROMETER, COLD VAPORS
HGAAS > ATOMIC ABSORPTION SPECTROMETER, HYDRIDE GENERATION

Sources: GEUIATFA > INST. FOR PHARMAC. ALIM. ANALYS., TECHNOLG., GE

Location: ANTARCTICA

Coverage: Minimum Latitude: 74S
Maximum Latitude: 74S
Minimum Longitude: 164E
Maximum Longitude: 164E

Data Center: GEUIATFA > INST. FOR PHARMAC. ALIM. ANALYS. TECHNOLG., GE

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Storage Medium: NON STANDARD

Dates: Start
1987-12-01

Stop

Revision
1992-05-31

Science Rev

Future Rev
1993-05-31

PNRA > Programma Nazionale di Ricerche in Antartide

PNRA-15

SUMMARY: Data refer to the mercury (organic and total) and selenium grade in *Pagothenia bernacchii* and *Adamussium Colbecki*. The sampling has been carried out during the 1987-88 and 1988-89 Italian expeditions in Antarctica. The samples have been analyzed through atomic absorption spectrophotometry, using the cold vapors technique (preconcentration on gold) for mercury and the analytical methodology of the hydrides for selenium. The available data are in a non standard tabular form. It is possible to provide them as file ASCII or Lotus 1.2.3.

REFERENCES:

Capelli, R., Depellegrini, R., Minganti, V. and Amato, A., Preliminary results on the study and determination of total and organic mercury in marine organisms sampled during the Scientific Antarctic Campaign, 1987-'88, *Annali di chimica*, 79, 561-569, 1989.

Title: "Algal composition of freshwater and terrestrial biotic community"

Parameters: BIOLOGICAL ENTITIES > SURFACE VEGETATION

Discipline: EARTH SCIENCE > LAND

Keywords: NORTH VICTORIA LAND
MUSSES
FRESH WATER ALGAE
BIOMASS
ALGAL MATSBIOMASS
SYSTEM, ALGAE ASSOCIATE MUSKS
BIOLOGY
BOTANY
ALGOLOGY

Sensors:

Sources:

Location: ANTARCTICA

Coverage:

Data Center: RMU1DBV1 > DEPT. OF VEGETABLE BIOL., RM1

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Dates: Start
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Stop
1990-02-01

Revision
1992-05-31

Science Rev

Future Rev

PNRA > Programma Nazionale di Ricerche in Antartide

PNRA-16

"Algal composition of freshwater and terrestrial biotic community"

SUMMARY: Knowledge of the algal freshwater and terrestrial microflora from a qualitative and quantitative point of view. The structure of the informative schedule is just partly compatible with the type of data originating from the researches of the O.U., for which I am responsible. Therefore numerous omissions have been made during its compilation. As a matter of fact the raw products of my research are formed by information on the composition of the freshwater and terrestrial algal population, which barely fit to be introduced and elaborated in data banks, since they mostly have a descriptive character.

REFERENCES:

- Prescott, G.W., A contribution to a bibliography of Antarctic and subantarctic algae. J. Cramer. 1978.
- Broady, P.A., A preliminary report of phycological studies in northern Victoria Land and Ross Island during 1984-'85. Melbourne University Program in Antarctic Studies. Repor. 66.

Title: "Evaluation of the microbic population in an Antarctic marine ecosystem"

Parameters: BIOLOGICAL ENTITIES > MICROORGANISMS
OCEAN COMPOSITION > BIOMASS

Discipline: EARTH SCIENCE > OCEAN

Keywords: ROSS SEA
TERRA NOVA BAY
OCEANOGRAPHY
BIOLOGY
MARINE MICROBIOLOGY
ECOLOGY
FRESH WATER
SEA WATER
MARINE MICROORGANISMS
ATP
LPS
IMMUNOFLUORESCENCE

Sensors: FCF1 > FLUX CENTRIFUGE, BECKMAN
AXEPIF1 > AXIOPLAN EPIFLUORESCENCE, ZEISS

Sources: BTNS > ROSS SEA, TERRA NOVA BAY

Location: ANTARCTICA

Coverage: Minimum Latitude: 74S
Maximum Latitude: 74S
Minimum Longitude: 164E
Maximum Longitude: 164E

Data Center: MERIST > INST. FOR EXPER. TALASSOGRAPHY, ME

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Storage Medium: MAGNETIC DISK, 1.2 MBYTES
VOLUME PRINTED TABLES
10 HARDCOPY PLOTS

Dates: Start
1990-01-02

Stop
1990-02-04

Revision
1992-05-31

Science Rev

Future Rev
1993-05-31

PNRA > Programma Nazionale di Ricerche in Antartide

PNRA-17

"Evaluation of the microbic population in an Antarctic marine ecosystem"

SUMMARY: The data refers to the valuation of the microbic mass in sea water samples through indirect methods (ATP, LPS). The data are now being elaborated upon. The data base is being organized. Therefore it is not available at the moment. As soon as its organization will be completed, copies will be given upon request, for a refund of expenses.

REFERENCES:

Vosjan, J. H., Nieuwland, G., Ernst, W. and Bluszczyk, T., (1987), Shipboard comparison of two ATP measurement methods applied in Antarctic waters Neth. J. sea res. 21-107-112.

Delille, D., Bouvy, M. and Cahet, G., (1988), Short-term variations of bacterio plankton in Antarctic zone: Terre Adelie area - microb. ecol. 15, 293-309.

Title: "Global meteorological data from ECMWF analyses (daily)"

Parameters: ATMOSPHERIC DYNAMICS > ATMOSPHERIC TEMPERATURE Discipline: EARTH SCIENCE > ATMOSPHERE
ATMOSPHERIC DYNAMICS > WINDS
ATMOSPHERIC DYNAMICS > HUMIDITY
ATMOSPHERIC DYNAMICS > GEOPOTENTIAL HEIGHT

Keywords: TEMPERATURE
WIND
HUMIDITY
GEOPOTENTIAL HEIGHT
METEOROLOGY
ATMOSPHERIC PHYSICS
CLIMATOLOGY

Sensors:

Sources: ECMWF > EUROPEAN CENTRE FOR MEDIUM RANGE WEATHER FORECASTS

Location:

Coverage:

Data Center: BORFISBA > INST. FOR HIGH/LOW ATM. PHYS. CHEM. PHENOM., BO Originating Center: BORFISBA

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Storage Medium: 14 MAGNETIC CARTRIDGES (1500 MBYTES)

<u>Dates:</u>	<u>Start</u>	<u>Stop</u>	<u>Revision</u>	<u>Science Rev</u>	<u>Future Rev</u>
	1979-12-01	1988-12-31	1992-05-31		1993-05-31

PNRA > Programma Nazionale di Ricerche in Antartide

PNRA-18

"Global meteorological data from ECMWF analyses (daily)"

SUMMARY: This data set contains gridded meteorological data, AT7 standards levels, at 12 GMT every day, obtained from initialized analyses of ECMWF. Data are in binary format.
The data set is stored on IBM-type cartdridges at Cineca (Bologna) and not active on the computer system. Extraction of subset cannot be provided by us, but a suitable fortran program (running on cray) is available for this purpose.

Title: "Fungi isolated from Antarctic material in the Victoria Land"

Parameters: BIOLOGICAL ENTITIES > MICROORGANISMS

Discipline: EARTH SCIENCE > LAND

Keywords: VICTORIA LAND
TERRA NOVA BAY
BOTANY
ECOLOGY
BIOCHEMISTRY
METABOLISM
ENZYME
BIOLOGY
FUNGI
SOIL
PETREL DUNG
BIRDS
FEATHERS

Sensors: CULT > ISOLATION OF FUNGI IN CULTURE

Sources: BTN > GROUND STATION, TERRA NOVA BAY STATION

Location: ANTARCTICA

Coverage:

Data Center: PVUIMM > INST. FOR MEDICAL MYCOLOGY, PV

Originating Center: PVUIMM

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Storage Medium:

Dates: Start
1987-10-31

Stop

Revision
1992-05-31

Science Rev

Future Rev

PNRA > Programma Nazionale di Ricerche in Antartide

PNRA-19

"Fungi isolated from Antarctic material in the Victoria Land"

SUMMARY: Fungi isolated from samples of soil, penguin, skua and petrel dung and bird feathers in the Victoria Land, Antarctica, from Inexpressible Island to Cape King were reported. Fungi occurred prevalently in bird dung and soil, especially when mosses were present. Keratinophilic fungi and variety of a filamentous fungi and yeasts were encountered in soil dung and bird feathers samples in different localities.

REFERENCES:

Caretta, G. and Del Frate, G., Fungi isolated from Antarctic material. 1st Biological Meeting of the PNRA. ROMA, June, 1989.

Caretta, G. and Del Frate, G., Fungi isolated from Antarctic material Polar Biology, 10, 1990.

Title: "Determination of Cu, Cd, Ni and Cr, in Antarctic sea water and snow. Campaign 1987-88 of Italian Expedition in Antarctica"

Parameters: OCEAN COMPOSITION > POLLUTANTS
OCEAN COMPOSITION > TRACE ELEMENTS

Discipline: EARTH SCIENCE > OCEAN

Keywords: TERRA NOVA BAY
ENVIRONMENTAL IMPACT
TRACE ELEMENTS
CHEMISTRY
ULTRATRACE METALS
SNOW
SEA WATER
HEAVY METALS

Sensors: GFAAS > ATOMIC ABSORPTION SPECTROMETER, GRAPHITE FURNACE

Sources: BTNS > ROSS SEA, TERRA NOVA BAY
RB > RUBBER BOAT

Location: ANTARCTICA

Coverage: Minimum Latitude: 75S
Maximum Latitude: 74S
Minimum Longitude: 164E
Maximum Longitude: 165E

Data Center: TOUDCA > DEPT. OF ANALYTICAL CHEMSTR., TO

Originating Center: TOUDCA

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Storage Medium:

Dates: Start
1987-12-01

Stop
1988-06-30

Revision
1992-05-31

Science Rev

Future Rev

PNRA > Programma Nazionale di Ricerche in Antartide

PNRA-20

"Determination of Cu, Cd, Ni and Cr, in Antarctic sea water and snow. Campaign 1987-88 of Italian Expedition in Antarctica"

SUMMARY: The concentration of Cu, Ni, Cd in sea water samples collected in Terra Nova Bay from December 1987 to February 1988; samples of snow were also collected. After preconcentration the content of the above metals was determined by means of GFAAS (Graphite Furnace Atomic Absorption Spectrometry). The content in pg/g for sea water ranged from 120 to 140 for Cd, 850 to 208 for Ni and 230 to 40 for Cu. Snow samples collected near the coast were preconcentrated by lyophilization; cd concentration was around 15 pg/g, Cu 140-240 pg/g Ni 180-205 pg/g and Cr around 25 pg/g. Relative standards deviations are about 20%.

A report of the reserch carried out by the Operative Units of the Environmental Impact group on the samples collected by the 1987-88 Italian expedition, has been published in the pamphlet 11-12 of the "Annali di Chimica" (pp. 537-762 of the volume n. 79, 1989). The results of the research made by these same Operative Units, regarding the samples collected in campaign 1988-89 during the expedition, have been condensed in a kind of "Extended Abstracts", which has been published. On June 8th-9th 1990, a report on this research has been presented at the CNR headquarters in Rome. The papers are being published in "Annali di Chimica", issues 7-8 and 9-10, vol. 81, 1991.

REFERENCES: Saini, G., Baiocchi, C. and Bertolo, P., Determination of Copper, Nickel and Cadmium in Antarctic sea water and snow. *Annali Chim. (ROMA)* 79, 713-721, (1989).

Title: "AVHRR images obtained from the station installed in Terra Nova Bay"

Parameters: OCEAN DYNAMICS > TEMPERATURE
EARTH RADIATIVE PROCESSES > RADIANCE
RADIANCE AND IMAGERY > VISIBLE
RADIANCE AND IMAGERY > INFRARED

Discipline: EARTH SCIENCE > OCEAN

* Keywords: SEA SURFACE TEMPERATURE
SURFACE REFLECTIVITY
CLOUD COVERAGE

Sensors: AVHRR > ADVANCED VERY HIGH RESOLUTION RADIOMETER

Sources: BTNR > GROUND RECEIVING STATION, TERRA NOVA BAY STATION

Location: ANTARCTICA

Coverage:

Data Center: ESA EPO > ESA, EARTHNET PROGRAMME OFFICE

Originating Center: MORIMGA

Data Center Contact: Earthnet User Services

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Storage Medium:

<u>Dates:</u>	Start	Stop	Revision	Science Rev	Future Rev
	1990-01-10	1991-02-15			

PNRA > Programma Nazionale di Ricerche in Antartide

PNRA-21

"AVHRR images obtained from the station installed in Terra Nova Bay"

SUMMARY: The images obtained from the receiving station AVHRR/HRPT, installed at the Terra Nova Bay Base, have been registered in the catalog of the European Space Agency (ESA-ESRIN, Frascati). The catalog, also available via remote terminal, provides: the date of the satellite's passage; the covered zone; a quick-look with the classification of: open sea, snow, sea ice, clouds. The people in charge of the ESA file are: Ing. Fusco and Dr. Pittella, ESA-ESRIN, via G. Galilei, Frascati.

Title: "Biological oceanography of the Weddell sea (EPOS project)"

Parameters: OCEAN COMPOSITION > SEDIMENTS
OCEAN COMPOSITION > CHEMICAL TRACERS
OCEAN COMPOSITION > PH
OCEAN COMPOSITION > PHYTOPLANKTON
OCEAN COMPOSITION > CHLOROPHYLL
OCEAN COMPOSITION > OXYGEN
OCEAN COMPOSITION > ORGANIC MATTER
OCEAN COMPOSITION > NITROGEN
OCEAN COMPOSITION > PIGMENT CONCENTRATION

Discipline: EARTH SCIENCE > OCEAN

Keywords: WEDDELL SEA
SCOTIA SEA
SCOTIA SEA BORDER
SEA WATER
FRESH WATER
ECOLOGY
CHEMICAL OCEANOGRAPHY
MARINE SEDIMENTS
BIOLOGICAL OCEANOGRAPHY
SEDIMENTOLOGY

Sensors: AAN > AUTOANALYZER
IMSC > INVERTED MICROSCOPE
FL > FLUOROMETER
CHNAN > CARBON HYDROGEN NITROGEN ANALYZER
CCNT > COULTER COUNTER

Sources: RVPS > RESEARCH VESSEL, POLARSTERN
VERIBM > INST. FOR SEA BIOLOGY, VE

Location: ANTARCTICA

Coverage: Minimum Latitude: 57S
Maximum Latitude: 63S
Minimum Longitude: 45W
Maximum Longitude: 54W

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Storage Medium: 20 MAGNETIC DISK, 20 MBYTES
100 HARD COPY PLOTS
500 35 mm SLIDES
100 PRINTED TABLES

Dates: Start
1987-01-01

Stop
1991-12-31

Revision
1992-05-31

Science Rev

Future Rev
1993-05-31

PNRA > Programma Nazionale di Ricerche in Antartide

PNRA-22

SUMMARY: The research theme, regarding the Antarctic ecosystem in the Weddell Sea, has been inserted into the European project EPOS (European Polarstern Study), proposed by the European Science Foundation and coordinated by the Alfred Wegener Institut für Polar und Meeresforschung from Bremerhaven (RFG). The goals were: studying the role of ice and its biota in relation to the oceanic system in the area of Antarctic convergence and analyzing the distribution of benthos in the southern zone of the Weddell Sea. The Italian members participated in the first (Oct. 11th - Nov. 20th 1988: prof. B. Battaglia, dr. F. Bianchi, p.i. F. Cioce and dr. G. Socal) and in the third cruise (Jan. 11th - Mar. 10th 1989: dr. A. Boldrin and dr. S. Rabitti). The activity carried out during the first cruise regarded the study of the distribution of dissolved nutrients and of the phytoplankton biomass in the north-western Weddell Sea; for this reason samples of dissolved nutrients, suspended matter (evaluated as dry weight, particulated organic carbon and nitrogen), contents in chlorophyll a and countable phytoplankton counts have been collected and analyzed. The distribution of the parameters in question has been evaluated in the water column along four transects from the open sea to the ice edge, inside the ice and under the ice itself. The obtained results during the campaign have contributed to amplify the knowledge of ice and of the marginal zone, which is suitable to the graft of spring phytoplanktonic bloom. During the third leg, the Italian participants carried out two different research programs, whose goals were respectively the study of the flow of matter in relation to the hydrologic structure and the biogeochemical process in the bottom sediments and their interaction with benthic organisms. In the first program, measurements of pH, dissolved oxygen, dissolved nutrients, evaluations on the suspended matter (as dimensional spectrum of particles by Coulter Counter, dry weight, carbon and total nitrogen) chlorophyll a and phytoplankton counts have been carried out in three transects in the Weddell Sea. For the study of the sediments, the following parameters have been taken under consideration: vertical profiles of pH and Eh, granulometry, mineralogy, contents of organic matter, contents of carbon (total and organic) and nitrogen, contents of chlorophyll and pheopigments, contents of nutrients in interstitial waters. The obtained results show that during the austral summer there are two high productive areas: the highest one is present in the Scotia Sea, north of the Weddell-Scotia confluence (57° lat.S), the second one in the southern zone of the Weddell Sea, near the ice edge (61° 30' lat.S). The biogeochemical characterization of the bottom sediments has been oriented towards the valuation of the exchanges between the water column and the bottom sediments themselves and more in general towards an adjustment of an environmental milieu for the studies on the benthic medium and macro fauna. The analysis has been carried out in the Halley Bay and Kapp Norvegia areas.

REFERENCES:

- Bonner, W.N. and Walton, D.W.H. (eds.), 1985, Key environments Antarctica, Pergamon Press, Oxford, 381 pp.
- Clark, A., 1983, Life in cold water: the physiological ecology of polar marine ectotherms, *Oceanogr. Mar. Biol. Ann. Rev.*, 21, 341-453.
- Deacon, G.E.R., 1979, The Weddell Gyre, *Deep-Sea Research*, 26A, 981-995.
- Deacon, G.E.R., 1984, The Antarctic circumpolar ocean, Cambridge Univ. Press, Cambridge, 180 pp.
- Fogg, G.E., 1977, Aquatic primary production in the Antarctic. *Philosophical Transactions of the Royal Society of London, Series B* 279, 27-38.
- Laws, R.M. (ed), 1984, Antarctic Ecology, Vol. I and II, Academic Nutrient Cycles and Food Webs, Springer-Verlag, Berlin.
- Siegfried, W.R., Condy, P.R. and Laws, R.M. (eds.), 1985, Antarctic Nutrient Cycles and Food Webs, Springer-Verlag, Berlin.
- Tranter, D., 1982, Interlinking of physical and biological processes in the Antarctic Ocean, *Oceanogr. Mar. Biol. Ann. Rev.*, 20, 11-35.

Title: "Faunistic and basic ecology"

Parameters: BIOLOGICAL ENTITIES > OCEAN VEGETATION
BIOLOGICAL ENTITIES > MICROORGANISMS

Discipline: EARTH SCIENCE > OCEAN

Keywords: VICTORIA LAND
ROSS SEA
TERRA NOVA BAY
BASIC ECOLOGY
TERRESTRIAL BIOTOPES
EARTH ENVIRONMENT
FRESH WATER
MARINE BENTHOS
FAUNISTICS
ZOOLOGY
ZOOGEOGRAPHY

Sensors: MSC > MICROSCOPE
DRG > DREDGE SYSTEM
GBM1 > GRAB MACHINE ECKMAN
GBM2 > GRAB MACHINE PETERSEN

Sources: BTNS > ROSS SEA, TERRA NOVA BAY
AV > AUXILIARY VESSEL

Location: ANTARCTICA

Coverage:

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Storage Medium:

Dates: Start
1988-04-01

Stop

Revision
1992-05-31

Science Rev

Future Rev
1993-05-31

PNRA > Programma Nazionale di Ricerche in Antartide

PNRA-23

"Faunistic and basic ecology"

SUMMARY: Data have been collected in a three years period from January 1988, through March 1990. Terrestrial and freshwater habitats, as well as marine benthic habitats, have been sampled for invertebrate fauna. Most of the zoological material sampled is still under study and relevant data will be available in the future.

REFERENCES:

- Brandt, A., 1988-Antarctic Serolidae and Grolanidae (Crustacea, Isopoda) - Koeltz Sci. Books, Koenigsrein, FRG, 1-143
- Scultz, G.A., 1982-Biology of Antarctic Sea Species of Protallocoxoidea and Stenetroidae (isopoda, Asellota) from the Antarctic - Antarctic Research Service 32, 17-72
- Kussakin, O.G., 1984-Addition to Crustacean Fauna in the Antarctic shelf: material from the Soviet Antarctic expedition 1965-1968 - Akademia Nauk. SSSR Vladivostok, 1-119
- Shultz, G.A., 1979- Aspects of the evolution and the origin of the deep sea isopod crustaceans- Sarsia, 64 (1-2), 77-83

Title: "Marine Geophysical Survey: high resolution single channel marine seismic line; total magnetic field; navigational data"

Parameters: GEODYNAMIC FEATURES > MAGNETIC FIELDS
GEODYNAMIC FEATURES > STRUCTURES

Discipline: EARTH SCIENCE > OCEAN
EARTH SCIENCE > INTERIOR AND CRUST

Keywords: ROSS SEA
MARINE GEOPHYSICS
SEDIMENTOLOGY
REFLECTION SEISMIC

Sensors: SCST1 > SINGLE CHANNEL STREAMER, SPARKER 16KJ-200MT
GMG2 > MAGNETOMETER GEOMETRICS, G811
NAV1 > NAVIGATION SYSTEM, GPS OMEGA MAGNAVOX

Sources: RVCB > RESEARCH VESSEL, CARIBOO

Location: ANTARCTICA

Coverage: Minimum Latitude: 75S
Maximum Latitude: 70S
Minimum Longitude: 176E
Maximum Longitude: 179E

Data Center: NAUIUN2 > UNIVERSITY INST. FOR NAVAL RESEARCH, NA

Originating Center: NAUIUN2

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Storage Medium: VHS STEREO MAGNETIC TAPE

Dates: Start 1988-01-02

Stop

Revision 1992-05-31

Science Rev

Future Rev 1993-05-31

PNRA > Programma Nazionale di Ricerche in Antartide

PNRA-24

"Marine Geophysical Survey: high resolution single channel marine seismic line; total magnetic field; navigational data"

SUMMARY:

High resolution Sparker profiles > 2sec TWT typical resolution 7 to 10 meters; shooting rep. rate 6 to 8 sec. Actually available in analog record (EPC type). In the future Digital SEG Y format will be available.

Geophysical plan of position available on request.

At present rough analogical data available; in the future data of spike deconvolution or predictive deconvolution will be available.

The seismic reflection data are stored in VHS stereo cassette. At present time the data base is not available in Digital computer format.

Copies of analog record will be available from mid 1993 at reproduction costs.

The data-base in digital form may be available on computer section starting from mid 1994, depending on PNRA support for analog to digital conversion.

Title: "Geology of the lower paleozoic sedimentary sequence in northern Victoria Land"

Parameters: GEOLOGICAL PARAMETERS > PALEONTOLOGY
GEOLOGICAL PARAMETERS > SEDIMENTARY ROCKS
GEOLOGICAL PARAMETERS > STRATIGRAPHY

Discipline: EARTH SCIENCE > INTERIOR AND CRUST

Keywords: VICTORIA LAND
NORTH VICTORIA LAND
TECTONICS
SEDIMENTARY
STRATIGRAPHY
SEDIMENTOLOGY

Sensors:

Sources:

Location: ANTARCTICA

Coverage: Minimum Latitude: 70S
Maximum Latitude: 75S
Minimum Longitude: 161E
Maximum Longitude: 171E

Data Center: PVUDST > DEPT. OF EARTH SCIENCES GEOL./PALEONT. SECT., PV Originating Center: PVUDST

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Storage Medium: MAGNETIC DISK

Dates: Start
1988-12-13

Stop

Revision
1992-05-31

Science Rev

Future Rev

PNRA > Programma Nazionale di Ricerche in Antartide

PNRA-25

"Geology of the lower paleozoic sedimentary sequence in northern
Victoria Land"

SUMMARY: This data set contains data and interpretations of the sedimentary evolution of a sinking foredeep connected with the cambro-ordovician Ross orogeny at the Pacific border of the Gondwana land.

REFERENCES:

Carmignani, L. et al., (1989), Geology of the Wilson terrane in the area between David and Mariner Glaciers, Victoria Land, Antarctica. Mem. Soc. Geol. Ital. 33, 77-97.

Casnedi, R. and Pertusati, P., (1991), Geology of the priestley formation (Northern Victoria Land - Antarctica) and its significance in the context of early Palaeozoic continental reconstruction. Mem. Soc. Geol. Ital., 46, 145-156.

Kleinschmidt, G. and Tessenshon, F., (1987), Early paleozoic westwarddirected subduction at the Pacific continental margin of Antarctica: in Mc Kenzie G. (ed) six. Amer. Geog. Union 40, 89-105.

Title: "Metabolic chlorinated hydrocarbons and mixed function oxidase activity in Antarctic organisms"

Parameters: BIOLOGICAL ENTITIES > MICROORGANISMS
BIOLOGICAL ENTITIES > BIRDS
BIOLOGICAL ENTITIES > OCEAN WILDLIFE

Discipline: EARTH SCIENCE > OCEAN

Keywords: DETOXICATING ENZYMATIC ACTIV.
ENVIRONMENTAL IMPACT
XENOBIOTIC LEVELS
ALIMENTARY CHAIN
ECOLOGY
BIOCHEMISTRY
METABOLISM
ENZYME
CHLORINATED HYDROCARBONS
ROSS SEA
MIXED FUNCTION OXIDASES

Sensors: GLC > GAS LIQUID CHROMATOGRAPH
MS > MASS SPECTROMETER
EA > ENZYMATIC ASSAY

Sources: SIUDBA > DEPT. OF ENVIRONM. BIOLOGY, SI

Location: ANTARCTICA

Coverage: Minimum Latitude: 73S
Maximum Latitude: 77S
Minimum Longitude: 163W
Maximum Longitude: 165W

Data Center: SIUDBA > DEPT. OF ENVIRONM. BIOLOGY, SI

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Dates: Start
1987-12-25

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Revision
1992-05-31

Science Rev

Future Rev

PNRA > Programma Nazionale di Ricerche in Antartide

PNRA-26

SUMMARY:

A) CHLORINATED HYDROCARBONS IN ANTARCTIC FISH.

Chlorinated hydrocarbons are a class of persistent contaminants which are by now ubiquitous and have even reached remote areas like the Arctic and Antarctic. In Antarctica their presence is partly due to the activities of the Scientific Stations, but the main source is considered to be atmospheric transfer. The present study concerns seven species of Antarctic fish collected in the periods Dec. Jan. 1987-88 and 1988-89, in the Ross Sea near the Italian Scientific Station at Terra Nova Bay (74° 40'S 164° 10'E). The species were *Pagothenia bernacchii*, *Pagothenia hansonii*, *Trematomus centronotus*, *Trematomus newnesi*, *Chionodraco hamatus*, *Cygnodraco mawsoni*, *Gymnodraco acuticeps*. Hexachlorobenzene (HCB), pp'DDE, pp'DDT and polychlorinated biphenyls (PCBs) were found in all seven species.

Concentration in muscle were around 1-2 ng/g dry weight for pp'DDE and 0.5ng/g d.w. for HCB and pp'DDT. The levels of HCB, pp'DDE, pp'DDT and PCBs in these Antarctic organisms indicate that so far, the activities of the Italian Scientific Station have not been felt by the ecosystem.

B) MIXED FUNCTION OXIDASES IN ANTARCTIC ORGANISMS.

The mixed function oxidase system and conjugating enzymes are the most important enzymatic systems involved in the detoxication of xenobiotics. The main task of these enzymatic complex is the metabolism of endogenous compounds and in fact they are also found in organisms in unpolluted areas. With the aim of evaluating these systems in the absence of pollution, the relative enzyme activities were studied in four Antarctic species, *Adamissium colbecki*, *Catharacta maccormicki*, *Pagothenia bernacchii* and *Chionodraco hamatus*, collected near the Italian Scientific Station (Terra Nova Bay, Ross Sea). The ethoxiresorufin-O-deethylase and aldrin epoxidase activities of the MFO system were very low and well below those of fish of temperate seas. NADPH- and NADH-cytochrome c and NADH-ferricyanide reductase activities were of the same order as in fish of temperate seas. Interspecific differences were found for most of the enzymes tested.

REFERENCES:

- Bacci, E., Catomari, D., Gaggi, C., Fanelli, R., Focardi, S. and Morosini, M., 1986, Chlorinated hydrocarbons in lichen and moss samples from the Antarctic Peninsula. *Chemosphere*, 15: 747-754.
- Dallai, R., Malatesta, E. and Focardi, S., 1988, On two Antarctic Collembola *Gressittacantha Terra Nova* and *Friesea grisea*. *Rev. Ecol. Biol. Sol*, 25 (3), 365-372.
- Focardi, S., Fossi, C. and Leonzio, C., 1988, Primi risultati sull'attività delle monoossigenasi a funzione mista in organismi antartici. - *Oecologia*, XVI (suppl), 68-70.
- Focardi, S., Fossi, C., Leonzio, C. and Di Simplicio, P., 1989, Mixed function oxidase activity and conjugating enzymes in two species of Antarctic fish. *Mar. Environ. Res.*, 28: 31-33.
- Focardi, S., Benocci, S., Fossi, C. and Leonzio, C., 1990, Levels of chlorinated hydrocarbons in muscle of Antarctic fish from Terra Nova Bay (Ross Sea). 2nd Internat. Confer. "Biology of Antarctic Fish", Ravello, 30th May - 1st June 1990, p. 58.
- Fossi, C., Leonzio, C., Marsili, L., Lari, L., Di Simplicio, P. and Focardi, S., 1990, Mixed function oxidase activity, cytochrome P-450 isoforms and conjugating enzymes in *Pagothenia bernacchii* and *Chionodraco hamatus*. 2nd Internat. Confer. "Biology of Antarctic Fish", Ravello, 30th May - 1st June 1990, p. 59.
- Focardi, S., Gaggi, C., Chemello, G. and Bacci, E., 1991, Organochlorines residues in moss and lichen samples from two Antarctic areas. *Polar Record*, 27, 241-244.
- Focardi, S., Bargagli, R., Fossi, C., Leonzio, C., Marsili, L., Court, G. and Davis, L., 1991, Chlorinated hydrocarbons and trace elements in eggs of South Polar Skua and Adelie Penguin. Internat. Symp. Ecological Approaches of Environmental Chemicals. Debrecen, 15-17 April.
- Focardi, S., Fossi, C., Leonzio, C., Lari, L., Marsili, L., Court, G. and Davis, L.S., 1991, Mixed function oxidase activity and chlorinated hydrocarbon residues in Antarctic seabirds: South Polar Skua (*Catharacta maccormicki*) and Adelie Penguin (*Pygoscelis adeliae*). *Mar. Environ. Res.*, in press.
- Focardi, S., Lari, L. and Marsili, L., - PCB congeners, DDTs and hexachlorobenzene in Antarctic fish from Terra Nova Bay (Ross Sea).
- Focardi, S., Fossi, C., Lari, L., Leonzio, C. and Marsili, L., 1991, Induzione al sistema Mixed Function Oxidase (MFO) in due specie di pesci antartici. Atti 22. Congr. S.I.B.M., Cagliari, 20-24 Maggio.
- Focardi, S., Fossi, C., Leonzio, C., Lari, L., Marsili, L., Court, G. and Davis, L., 1991, Organochlorines and mixed function oxidase activity in South Polar Skua and Adelie Penguin from Ross Island. BIOMASS Colloquium, Bremerhaven, p.12.

Title: "Katabatic winds and deep water formation"

Parameters: OCEAN DYNAMICS > UPWELLING
ATMOSPHERIC DYNAMICS > WINDS

Discipline: EARTH SCIENCE > ATMOSPHERE
EARTH SCIENCE > OCEAN

Keywords: OCEANOGRAPHY
CATABATIC WIND
DEEP WATER
UPWELLING

Sensors: ANEMT > ANEMOMETERS THERMISTORS
RSR > RADIO SOUNDING RADIOMETER
TVCAM > VIDEO CAMERA

Sources:

Location:

Coverage:

Data Center: RMRARF > CNR RESEARCH AREA, FRA/RM

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Dates: Start
1985-12-01

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Revision

Science Rev

Future Rev

PNRA > Programma Nazionale di Ricerche in Antartide

PNRA-27

"Katabatic winds and deep water formation"

SUMMARY: The role of the katabatic winds in exporting cold air from high latitudes to lower latitudes has been theoretically investigated through the use of numerical and analytical models. Furthermore, the vortex and the upwelling generated in the Antarctic ocean by the cold air outflow at the edge of the continent has been studied.

REFERENCES:

Dalu, G.A., Diodato, L. and Baldi, M., 1989, Upwelling induced wind stress. *Il nuovo Cimento*, 11 C, 557-587.

Dalu, G.A. and Salusti, S., 1989, Hydrodynamic stability of small scale vortices. *Ocean Modelling*.

Dalu, G.A. and Pielke, R.A., Analytical study of the frictional response of coastal currents and upwelling to winds stress, 1990: *J. of Geophysical Research*, 95 C2, 1523-1536.

Dalu, G.A., Baldi, M., Colacino, M. and Guerrini, A., Katabatic winds and density currents in the Antarctica, 1990, 4th Workshop on Antarctic Atmosphere, Porano, Italy.

Title: "Remote sensing and territorial informative systems"

Parameters: GEOGRAPHY AND LAND COVER

Discipline: EARTH SCIENCE > LAND

Keywords: VICTORIA LAND
GEOLOGICAL SURVEY
GEOLOGICAL SCIENCES

Sensors: MSS > MULTI SPECTRAL SCANNER
TM > THEMATIC MAPPER
HRYR > HIGH RESOLUTION VISIBLE RADIOMETER

Sources: LANDSAT > LAND REMOTE SENSING SATELLITE
SPOT > SYSTEM PROBATOIRE D'OBSERVATION DE LA TERRE

Location: ANTARCTICA

Coverage: Minimum_Latitude: 74S
Maximum_Latitude: 77S
Minimum_Longitude: 158E
Maximum_Longitude: 167E

Data Center: RME3AEI > ENEA CRE CASACCIA, DIGITAL IMAGERY

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Dates: Start
1972-12-01

Stop
1991-03-01

Revision
1992-05-31

Science Rev

Future Rev

PNRA > Programma Nazionale di Ricerche in Antartide

PNRA-28

"Remote sensing and territorial informative systems"

SUMMARY: Remotely sensed images concerning the Victoria Land area have been processed for logistic and scientific applications. For copyright reasons the images can not be freely distributed.

Title: "Marine geology and sedimentation of the Ross Sea"

Parameters: OCEAN COMPOSITION > SEDIMENTS

Discipline: EARTH SCIENCE > OCEAN

Keywords: ROSS SEA
TERRA NOVA BAY
MARINE GEOLOGY
MARINE SEDIMENTS
OCEANOGRAPHY

Sensors: GVCR > GRAVITY CORER
GBM3 > GRAB MACHINE VAN VEEN

Sources: RV > RESEARCH VESSEL

Location: ANTARCTICA

Coverage: Minimum_Latitude: 70S
Maximum_Latitude: 75S
Minimum_Longitude: 163E
Maximum_Longitude: 178E

Data Center: TSUIGP > INST. FOR GEOLOGY PALEONTOLOGY, TS

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Storage Medium: MAGNETIC DISK
PRINTED TABLES

Dates:

Start

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Revision
1992-05-31

Science Rev

Future Rev

PNRA > Programma Nazionale di Ricerche in Antartide

PNRA-29

"Marine geology and sedimentation of the Ross Sea"

SUMMARY: The data now available is the result of granulometric analysis on superficial samples of sea sediments.

REFERENCES:

Brambati, A., Fanzutti, G.P., Finocchiaro, F., and Simeoni, O., Sediments and sedimentological process in the Ross Sea continental shelf (Antarctica); results and preliminary conclusions, Bull. Ocean. Teor. Appl., VII (1-2), 159-188, 1989.

Title: "Human effect in Antarctica. Isolation of dermatophytes and species correlated from the environment, the man, the animals in Antarctica"

Parameters: BIOLOGICAL ENTITIES > MICROORGANISMS

Discipline: EARTH SCIENCE > LAND

Keywords: KAY ISLAND FOOTHILLS
ADELIE COVE
CAREZZA LAKE
MARKHAM ISLAND
MOUNT MELBOURNE
PRIOR ISLAND
VETERINARY MICROBIOLOGY
MEDICAL MICROBIOLOGY
MYCOLOGY
DERMATOPHYTES
HUMAN EFFECT
DERMATOPHYTOSIS

Sensors:

Sources:

Location: ANTARCTICA

Coverage:

Data Center: RMAIODSS > INST. FOR DERMATOLOGY MYCOLOGY SECT., RM

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Dates: Start 1987-04-01

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Revision 1992-05-31

Science Rev

Future Rev 1993-05-31

PNRA > Programma Nazionale di Ricerche in Antartide

PNRA-30

"Human effect in Antarctica. Isolation of dermatophytes and species correlated from the environment, the man, the animals in Antarctica"

SUMMARY: In the present study, 10 soil samples were collected aseptically from an equal number of areas of the Antarctic in the zone occupied by the 1986-87 Italian Expedition for research on keratinophilic fungi. Of particular interest was the isolation of a pathogenic fungus. *Microsporum gypseum* from two sites in the base camp occupied by men and by skuas. *Trichophyton terrestre* was isolated from a site in which people worked and through which penguins and skuas passed. The most widespread fungal species were members of the genus *chrysosporium*. Some of these species were isolated but not identified and this part of the study was still to be completed. A significant result was the absence of fungi in one sample, while in another was found only a single species of *chrysosporium*. Other genera of general diffusion such as *Aspergillus* spp, *Malbranchea* spp, *Mycelia sterilia* spp, *Paecilomyces* spp, *Penicillium* spp and *Scopulariopsis* spp were also isolated from many environments.

- 1) Connections with possible dermatophytotic pathologies of the expedition members.
- 2) Study of the relation between the development of mycetes and temperature.
- 3) Identification and classification of possible new fungal species.

REFERENCES:

Mercantini, R., Marsella, R. and Cervellati, M.C., Keratinophilic fungi isolated from Antarctic soil. *Mycopathologia* 106: 47-52, 1989.

Title: "Reflectance of Antarctic surfaces"

Parameters: RADIANCE AND IMAGERY

Discipline: EARTH SCIENCE > LAND

Keywords: VICTORIA LAND
ALBEDO

Sensors: RD3 > RADIOMETER, ESOTECA 1000A (MSS)

Sources:

Location: ANTARCTICA

Coverage:

Data Center: MORIMGA > INST. FOR ENVIRONM. GEOPHYS. METHODLG., MO

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Dates: Start
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Science Rev

Future Rev
1993-05-31

PNRA > Programma Nazionale di Ricerche in Antartide

PNRA-31

"Reflectance of Antarctic surfaces"

SUMMARY: Bihemispherical reflectances (albedo), obtained from the ratio of surface existence to irradiance measurements taken in Landsat Modular MultiSpectral Scanner (MSS) bands, are given for various surface types of Victoria Land.

REFERENCES:

Zibordi, G. and Meloni, G. P., Correction of bihemispherical reflectance measurements for noncosine response of 2π -grace steradian optics: a methodology and its application to Antarctic surfaces. Remote Sensing of Environment, 37: 55-62, 1991.

Title: "The physical analysis and regulation of genes. Heat shock on Antarctic fish"

Parameters: BIOLOGICAL ENTITIES

Discipline: EARTH SCIENCE

Keywords: ROSS SEA
MCMURDO SOUND
CHLORAGE
CLONE DUPLICATION
MOLECULAR BIOLOGY
GENE EXPRESSION
GENE HEAT SHOCK
LOW TEMPERATURE ADAPTATION

Sensors: EPUCF > ELECTROPHORESIS ULTRACENTRIFUGE MACHINE
SPH > SPECTROPHOTOMETER

Sources: NARIIGB > INTERNAT. INST. FOR GENETICS BIOPHYS., NA

Location: ANTARCTICA

Coverage:

Data Center: NARIIGB > INTERNAT. INST. FOR GENETICS BIOPHYS., NA

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Storage Medium:

Dates: Start
1987-06-01

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Revision
1992-05-31

Science Rev

Future Rev

PNRA > Programma Nazionale di Ricerche in Antartide

PNRA-32

"The physical analysis and regulation of genes. Heat shock on Antarctic fish"

SUMMARY: The study of organisms that live under the selective pressure of extreme climatic conditions can give important information on the mechanisms of thermal adaptation. We are studying, at a gene level, the mechanisms of adaptation in Antarctic fish. The objective of this programme is better understanding of how these fish have evolved and have integrated the different level of molecular adaptation as a direct and indirect consequence of the exposure to extreme low temperatures. We are primarily interested in the study of heat shock genes, a group of ubiquitous genes whose products have a central role in cellular homeostatic mechanisms. These gene products, the heat shock proteins, protect cells and entire organisms from the toxic effect of temperature changes and, more in general, from other forms of stresses. Heat shock proteins are induced in all organisms at specific temperatures that correspond to the upper temperature range of an organism. The study of regulation of these genes may give important information on the mechanisms of cold adaptation and how this gene family has evolved in such extreme environment. We have cloned by PCR amplification two hsp70 sequences from *C. hamatus* and *N. rossi* genomic DNA consisting of ca. 500 nt and determined their sequences. Both correspond to homologous hsp70 genes of other organisms. We will now clone the remaining portion and determine the entire nucleotide sequence and flanking regions. We have already demonstrated that such gene is expressed in *N. rossi* at 4°C, we will now determine whether this gene is active in *C. hamatus*, a fish that live only in a very narrow temperature range and whether regulatory cis elements (HSE, heat shock elements) are present or modified at the 5' and of the gene.

REFERENCES:

- Maresca, B., Patriarca, E., Goldemberg, G., and Sacco, M., Heat shock and cold adaptation in Antarctic fishes: a molecular approach. *Comp. Bioch. Physiol.* Vol. 90B, 623-630, 1988.
- di Prisco, G., Maresca, B. and Tota, B., Marine Biology of Antarctic Organisms Symposium on Marine Biology of Antarctica. di Prisco, G., Maresca, B. and Tota, B., Editors *Comp. Biochem. Physiol.* 90B: 459, 1988.
- Maresca, B., Patriarca, E., Goldemberg, C. and Sacco, M., Heat shock and cold adaptation in Antarctic fishes: a molecular approach. Symposium on Marine Biology of Antarctica. di Prisco, G., Maresca, B. and Tota, B., Editors *Comp. Biochem. Physiol.* 90B: 623, 1988.
- di Prisco, G., Maresca, B. and Tota, B., (Eds.), *Biology of Antarctic Fish.* Springer-Verlag, Heidelberg, 1991.

Title: "Present and fossil pollinic contributions in Victoria Land
and Terra Nova Bay"

Parameters: BIOLOGICAL ENTITIES > MINOR SPECIES

Discipline: EARTH SCIENCE > LAND

Keywords: ROSS SEA
WOOD BAY
EDMONSON POINT
TERRA NOVA BAY
VICTORIA LAND
BOTANY
POLLEN SAMPLES
BOTANY
PALYNOLOGY
PALEOCLIMATOLOGY
PALEOECOLOGY

Sensors: MSC > MICROSCOPE
SEMSC > ELECTRON MICROSCOPE, SCANNING

Sources: PDUDBIOL > DEPT. OF BIOLOGY, PD

Location: ANTARCTICA

Coverage: Minimum_Latitude: 75S
Maximum_Latitude: 74S
Minimum_Longitude: 166E
Maximum_Longitude: 162E

Data Center: PDUDBIOL > DEPT. OF BIOLOGY, PD

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Storage Medium: MAGNETIC DISK

<u>Dates:</u>	<u>Start</u>	<u>Stop</u>	<u>Revision</u>	<u>Science Rev</u>	<u>Future Rev</u>
	1987-07-01		1992-05-31		

PNRA > Programma Nazionale di Ricerche in Antartide

PNRA-33

"Present and fossil pollinic contributions in Victoria Land
and Terra Nova Bay"

SUMMARY: The research carried out so far on different types of terrestrial, marine and lacustrine sediments from Victoria Land and Ross Bay and on natural traps (moss, lichen, penguins guano) for present pollen, has not yet produced any data, because it only began in the latter half of 1989, and the chemical treatment of the samples for the isolation of possible present or fossil pollen contained in them, is still in a preliminary phase. The progress of the research will produce lists of the found pollinic types, of their measurements and count. This data will be registered in compatible PC IBM, on 5 and 1/4 and 3 and 1/2 MAGNETIC DISK and elaborated through programs with MS DOS.

REFERENCES:

Koerner, R.M. and Bourgeois, J.C., Pollen analysis and discussion of time-scale in Canadian Ice Cores, *Annals of Glaciology*, 10, 85-91, 1988.
Rirks, H.T.R. and West, R.G. (ed.), *Quaternary Plant Biology*. Oxford, Blackwell, 143-168.

Haerbeli, W. et al., Accumulation characteristics on a cold, high-alpine firn saddle from a snow-pit study on Colle Gnifetti, Monte Rosa, Swiss Alps. *Journal of Glaciology*, 29(102), 260-271, 1983.

Title: "Heavy metal homeostasis in the tissues of Antarctic marine invertebrates"

Parameters: BIOLOGICAL ENTITIES > BIRDS
BIOLOGICAL ENTITIES > MICROORGANISMS

Discipline: EARTH SCIENCE

Keywords: ROSS SEA
TERRA NOVA BAY
PHYSIOLOGY
ADAPTATION
BIOCHEMISTRY
MOLECULAR BIOLOGY
HEAVY METALS
METALLOTHIONEINE
ADAMUSSIUM COLBECKI
ENZYME
METABOLISM

Sensors: HPLC > LIQUID CHROMATOGRAPH, HIGH PERFORMANCE
SPH > SPECTROPHOTOMETER
LYO > LYOPHILIZATOR

Sources: BTN > GROUND STATION, TERRA NOVA BAY STATION
GEUIFG > INST. FOR GENERAL PHYSIOLOGY, GE

Location: ANTARCTICA

Coverage: Minimum_Latitude: 74S
Maximum_Latitude: 74S
Minimum_Longitude: 164E
Maximum_Longitude: 164E

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Storage Medium: MAGNETIC DISK

Dates: Start
1987-12-30

Stop

Revision
1992-05-31

Science Rev

Future Rev
1993-05-31

PNRA > Programma Nazionale di Ricerche in Antartide

PNRA-34

SUMMARY: * Role of metallothioneins in heavy metal homeostasis in the tissues of the antarctic scallop "Adamussium colbecki"

Analyses of the metal content demonstrate that in the gills of "Adamussium colbecki" (Smith 1902) the concentrations of Cu and Zn are lower than in "Mytilus galloprovincialis" (Lam.) and "Pecten jacobaeus" (L.), whereas the Cd content is significantly higher. Comparable values of Cu were observed in the digestive gland of three different molluscs. The digestive gland of "A. colbecki" contains lower levels of Zn but an extremely high Cd concentration (27 micro-g/g ww; 4 and 8 times higher than in "P. jacobaeus" and in "M. galloprovincialis", respectively). In this tissue about 80% of the total Cd is associated to the particulate fraction. Whereas the remaining metal is present in the cytosol mostly bound to a metalloprotein having the general characteristics of metallothionein. In "P. jacobaeus" a major fraction (about 70%) of the Cd present in the digestive gland (4.9 micro-g/g ww) was bound to cytosolic metallothioneins. Moreover, in "A. colbecki" digestive gland aging does not affect the concentration of Cd bound to metallothioneins, although the Cd content is slightly reduced.

* Antioxidant systems and lipid per oxidation in "Adamussium colbecki": possible role in cellular aging processes.

The data indicate that Cd is assumed by the scallops, probably with the diet, mainly in two digestive glands where the metal is detoxified both by binding to soluble metallothioneins and by association to the cell particulate fraction. Moreover the level of the antioxidant compounds in the digestive gland of the antarctic scallop "Adamussium colbecki" (Smith, 1902), of different sizes were evaluated. The tissue content of malondialdehyde (MDA), as an index of peroxidative processes, was also measured. The results indicate a significant decrease of the concentration of glutathione (GSH), Vit E, carotenoids and Vit C in the digestive gland of bigger, older animals. However, the level of MDA did not show any significant variation with size.

* Structure and function of cell membranes in the acclimatization to low temperature in "Adamussium colbecki".

The biochemical composition of the biocell membranes (neutral lipids/cholesterol/phospholipids/fatty acids) in the digestive glands cells of "A. colbecki" has been determined. The results demonstrate that in the digestive glands of "A. colbecki" the amount of short chain fatty acids is increased and the cholesterol level significantly reduced.

REFERENCES:

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- Hennig, H.F.-K.O., Eagle, G.A., McQuaid, C.D. and Rickett, L.H., Metal concentration in Antarctic zooplankton species, Aquatic nutrient cycles and food webs, W.R. Siegfried, P.R. Condy and R.M. Laws Eds., 656-660, 1985.
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- Viarengo, A., Pertica, M. and Orunesu, M., Rapid induction of copper-binding proteins in the gills of metal exposed mussels, Comp. Biochem. Physiol., (67C), 2, 215-221, 1981.

Title: "The main circulation paths of heavy metals in the global
earthsystem by means of trace element measurements in ice"

Parameters: HYDROLOGIC PARAMETERS > GLACIERS

Discipline: EARTH SCIENCE > OCEAN

Keywords: TERRA NOVA BAY
VICTORIA LAND
STRAND LINE GLACIER
BOOMERANG GLACIER
ENIGMA LAKE
CHEMICAL OCEANOGRAPHY
TRACE METALS
ICE
ENVIRONMENTAL IMPACT
CHEMICAL OCEANOGRAPHY
METAL CIRCULATION

Sensors: CRHA > LITTLE CORER AND HATCHET

Sources: BTN > GROUND STATION, TERRA NOVA BAY STATION

Location: ANTARCTICA

Coverage: Minimum_Latitude: 74S
Maximum_Latitude: 75S
Minimum_Longitude: 163E
Maximum_Longitude: 165E

Data Center: MOUCICAI > INTERDPT. CNTR. FOR APPL. INFO. COMPUT., MO

Originating Center: MOUIOG

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Storage Medium: MAGNETIC DISK

Dates: Start 1989-01-09

Stop

Revision 1992-05-31

Science Rev

Future Rev 1993-05-31

PNRA > Programma Nazionale di Ricerche in Antartide

PNRA-35

"The main circulation paths of heavy metals in the global
earthsystem by means of trace element measurements in ice"

SUMMARY: Only preliminary sample collections and trace metal measurements have been performed up to now. P.I.X.E. technique has been employed for metal concentration. Only few test data are available of trace metal concentration in ice samples.
The data obtained up to now are stored on floppy disks and are not active on computer system. Contact the chief researcher for data availability.

Title: "Physical oceanography data of South Pacific (between New Zealand and Antarctica) and western Ross Sea"

Parameters: OCEAN COMPOSITION > CONDUCTIVITY
OCEAN DYNAMICS > TEMPERATURE
OCEAN COMPOSITION > SALINITY
OCEAN DYNAMICS > PRESSURE

Discipline: EARTH SCIENCE > OCEAN

Keywords: SOUTH WEST PACIFIC OCEAN
PHYSICAL OCEANOGRAPHY
TEMPERATURE
CONDUCTIVITY
FLUORESCENCE
ECOLOGY
WATER MASSES
ROSS SEA

Sensors: CTD > CONDUCTIVITY, TEMPERATURE, DEPTH
ILAB3 > INSTRUMENTATION LABORATORY, SALINOMETER

Sources: RVCB > RESEARCH VESSEL, CARIBOO

Location: ANTARCTICA
PACIFIC OCEAN

Coverage: Minimum_Latitude: 75S
Maximum_Latitude: 50S
Minimum_Longitude: 177W
Maximum_Longitude: 162E

Data Center: ANRIRPEM > INST. FOR SEA FISHERY RESEARCH, AN

Originating Center: ANRIRPEM

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Storage Medium: MAGNETIC DISK, 3.5 INCH., 1.4 MB.

Dates: Start 1989-11-25

Stop 1990-01-11

Revision 1992-05-31

Science Rev

Future Rev 1993-05-31

PNRA > Programma Nazionale di Ricerche in Antartide

PNRA-36

"Physical oceanography data of South Pacific (between New Zealand and Antarctica) and western Ross Sea"

SUMMARY: This data set includes the data of depth (in decibar), conductivity, temperature and fluorescence obtained with a CTD probe by Meil Brown MKIII and with a fluorometer by Sea-Tech. It also includes the coordinates of the hydrologic stations and the depth and meteo oceanographic data of the air-sea interface (air temp., relative humidity, wind velocity and direction, atmospheric pressure, solar radiation, superficial temperature and salinity, sea condition).

REFERENCES: "Journal of Marine Systems".

Title: "Marine conventional heat flow density measurements"

Parameters: GEODYNAMIC FEATURES > GRAVITY FIELDS
GEODYNAMIC FEATURES > MAGNETIC FIELDS
GEODYNAMIC FEATURES > STRUCTURES
GEODYNAMIC FEATURES > GEOTHERMAL

Discipline: EARTH SCIENCE > INTERIOR AND CRUST

Keywords: ROSS SEA
VICTORIA LAND BASIN
DRYGALSKY BASIN
GEOPHYSICS
DRYGALSKY BASIN
GEOLOGICAL SCIENCES
MARINE GEOPHYSICS
MARINE GEOLOGY
CENOZOICS
TECTONICS
VOLCANOLOGY
SEDIMENTOLOGY
HEAT FLOW
GRAVIMETRY
HIGH RESOLUTION SEISMICS
SEDIMENT CORING
TERROR RIFT

Sensors: GTHFPB1 > GEOTHERMAL HEAT FLOW PROBE, ARGUS II (VERSION 1990)
CTD > CONDUCTIVITY, TEMPERATURE, DEPTH

Sources: RVOGS > RESEARCH VESSEL, OGS EXPLORA

Location: ANTARCTICA

Coverage: Minimum Latitude: 76S
Maximum Latitude: 74S
Minimum Longitude: 164E
Maximum Longitude: 166E

Data Center: TSUDINMA > DEPT. OF NAVAL ARCH. MARINE ENVIR. ENGIN., TS

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Storage Medium: MAGNETIC DISK, 1.2 MBYTES.
HARDCOPY PLOTS

Dates: Start
1991-01-17

Stop
1991-01-26

Revision
1992-05-31

Science Rev

Future Rev

PNRA > Programma Nazionale di Ricerche in Antartide

PNRA-37

SUMMARY: As part of the 1990-91 sixth Italian Antarctic Program, single channel high resolution and multi-channel reflection seismics, gravity, magnetics, bathymetry, coring and heat flow (HF) were collected in the western Ross Sea (OGS-Explora cruise). The following data were acquired:

- approximately 500 km of multichannel seismics across Iselin Bank;
- 1650 km of analogue single channel seismic data in central VLB;
- approximately 3000 km of bathymetry and gravity data and 2200 km of magnetic profiles in VLB;
- seven gravity cores (18.5 m of total sediment recovery) - and 12 HF measurements using the Trieste University multipenetration probe.

New bathymetric charts to a scale of 1:100,000 with a 50 m contour interval, for both Drygalsky Basin and Terror Rift have been produced. Discrepancies in depth among the different data sets used are within 5 m. Satellite navigation or GPS receiver data guarantee good positioning. During OGS Explora cruise 1991, three measurements were taken in the Drygalsky Basin, in a water depth exceeding 1000 m, and nine in the Terror Rift, in water depth greater than 850 m. The HF measurements taken in the Drygalsky Basin and Terror Rift can be considered of good quality. The Istituto di Miniere e Geofisica Applicata (Trieste University) multipenetration HF probe, with seven outrigger thermistors spaced along a 5.5 long barrel and in situ thermal conductivity measurements, was used for the investigation. The in situ thermal conductivity values, measured with a continuous line heater in each thermistor probe, were compared to more than 300 needle probe thermal conductivity values measured on seven gravity cores collected in the area. The average sea bottom temperature was approximately -1.9 °C for the Drygalsky Basin and -1.5 °C for the Terror Rift. Despite the coarse and stiff sediment, penetrations of the order of 3 m in Drygalsky Basin and 4 m in the Terror Rift were achieved. Most of the temperature versus depth plots are remarkably linear. Average thermal gradients of 94 ± 1 (SD) mK m⁻¹ (n=2) and of 92 ± 16 mK m⁻¹ (n=9) have been observed in the Drygalsky and Terror Rift respectively. Atwo-legged T-Z profile may sometimes be observed in correspondence of the change in sediment structure between the uppermost 1-2 m of poorly consolidated till ($k \approx 0.7-0.8$ W m⁻¹ K⁻¹) and the underlying more compacted sediment ($k \approx 1$ W m⁻¹ K⁻¹). A very good agreement has been observed between in situ (n=40) and on core (n=331) thermal conductivity values. Mean observed HF values of 123 ± 3 mW m⁻² (n=2) in the Drygalsky Basin and of 98 ± 11 mW m⁻² (n=9) in the Terror Rift were calculated. In situ equilibrium temperatures are estimated within ± 0.002 °C, while thermal conductivities are accurate to 3-5%. The final HF value is estimated with a total uncertainty of approx. $\pm 10\%$. Among the environmental disturbances that may affect the HF measured in the western Ross Sea, bottom water circulation, erosion and sedimentation and disturbances related to the ice dynamics during the last glacial advance, have been taken into account. The best corrected HF estimates for the Drygalsky and Terror Rift become $98-110$ and $79-89$ mW m⁻², respectively. Large uncertainties in glacial erosion rates, timing of the glacial events as well as in the sea bottom temperature changes will not be reduced without drilling in VLB.

REFERENCES:

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- Blackmann, D.K., Von Herzen, R.P. and Lawver, L.A., (1987), Heat flow and tectonics in the western Ross Sea, Antarctica. In: A.K. Cooper and F.J. Davey (Eds.), The Antarctic Continental Margin: Geology and Geophysics of the Western Ross Sea. Circum-Pacific Council for Energy and Natural Resources, Earth Sciences Series, Vol. 5B, Houston, Texas, pp.179-189.
- Blankenship, D.D., Alley, R.B. and Rooney, S.T., (1990), Glaciological influences on sedimentological processes in the Ross Embayment. In: A.K. Cooper, P.N. Webb (Convenors), International Workshop in Antarctic Offshore Seismic Stratigraphy (ANTOSTRAT): Overview and Extended Abstracts: US Geological Survey Open File Report 90-309, pp. 79-89.
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- Davey, F.J. and Cooper, A.K., (1987), Gravity studies of the Victoria Land Basin and Iselin Bank. In: A.K. Cooper and F.J. Davey (Eds.), The Antarctic Continental Margin: Geology and Geophysics of the Western Ross Sea. Circum-Pacific Council for Energy and Natural Resources, Earth Sciences Series, Vol. 5B, Houston, Texas, pp.119-137.
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"Marine conventional heat flow density measurements"

flow and tectonics of the western Ross Sea. Proceedings of the 6th Meeting of Earth Sc. in Antarctica, Tokyo, 9-13 Sept., 1991 (in press).

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Lawer, L.A., Della Vedova, B. and Von Herzen, R.P., Heat flow in Jane Basin, northwest Weddell Sea. Journal of Geophysical Research, 96, 2019-2038.

Stern, T.A. and Ten Brink, U.S., (1989), Flexural uplift of the Transantarctic Mountains. Journal of Geophysical Research, 94, 10315-10330.

Tessensohn, F. and Worner, G., (1991), The Ross Sea rift system, Antarctica: structure, evolution and analogues. In: M.R.A. Thomson (Eds.), Geological Evolution of Antarctica. Cambridge University Press, UK, pp. 273-277.

Title: "Geophysical surveys in Antarctic seas"

Parameters: GEODYNAMIC FEATURES > MAGNETIC FIELDS
GEODYNAMIC FEATURES > GRAVITY FIELDS
GEODYNAMIC FEATURES > SEISMIC

Discipline: EARTH SCIENCE > INTERIOR AND CRUST

Keywords: ROSS SEA
WEDDELL SEA
SCOTIA ARC
BELLINGSHAUSEN SEA
BALLENY ISLANDS
MARINE GEOPHYSICAL PROFILES
REFLECTION SEISMIC PROFILING
MARINE GRAVITY
MARINE TOTAL MAGNETIC FIELD
SOLID EARTH
GEOPHYSICS

Sensors: ASTR1 > ANALOGIC STREAMER, PRAKLA
SMREC1 > SEISMIC RECORDER, SN358DMX
NAV2 > NAVIGATION SYSTEM, NAVDATA 3000
BGV2 > GRAVIMETER BODENSEEWERK, KSS31
GMG1 > MAGNETOMETER GEOMETRICS, G801-803
GMG2 > MAGNETOMETER GEOMETRICS, G811

Sources: RVOGS > RESEARCH VESSEL, OGS EXPLORA

Location: ANTARCTICA

Coverage: Minimum Latitude: 58S
Maximum Latitude: 78S
Minimum Longitude: 74W
Maximum Longitude: 160E

Data Center: TSAOGS > OBSERVATORY FOR EXPER. GEOPHYSICS, TS

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Storage Medium: 200 MAGNETIC TAPES, 2400' , 3500 MBYTES
4000 MAGNETIC TAPES

Dates: Start
1988-02-10

Stop

Revision
1992-05-31

Science Rev

Future Rev
1993-05-31

PNRA > Programma Nazionale di Ricerche in Antartide

PNRA-38

"Geophysical surveys in Antarctic seas"

SUMMARY: The following subtotal lengths of seismic profiles were acquired during the various summer cruises of the OGS Marine Geophysical Antarctic Expeditions:

YEARS	ROSS SEA	WEDDELL SEA ANTARCTIC PENINSULA	BELLINGSHAUSEN SEA	BALLENY AREA
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1987-88	2323 KM			
1988-89	4102 KM			3060 KM
1989-90	2563 KM		4923 KM	1280 KM

The gross total of seismic profiles is therefore KM. 18.251. another cruise is planned during the summer 1990-91 and other parameters (I.E. heat flow, etc.) shall be measured in addition.

As general rule, most of the cruises have a shot-point spacing of 50 meters where also gravity and magnetic observations were taken. Some refraction stations have been observed with sonobuoys scattered along the profiles, but not during the first cruise.

Sismic coverage was normally 2400 to 3000%, up to 45 liter airguns arrays have been employed for energizing. Streamer lengths vary from 2400 to 3000 m. The sampling rate was 4 milliseconds.

The processing of the geophysical data is being made at OGS and is presently still in progress.

REFERENCES:

Berger, P., Brancolini, G., De Cillia, C., Gantar, C., Marchetti, A., Nieto, D. and Ramella, R., Osservatorio Geofisico Sperimentale di Trieste: Acquisition, processing and preliminary results of the Antarctic 1987-88 Geophysical Survey, Boll. Soc. Geol. It. (in press).

Title: "Researches on exchange mechanisms between the aqueous phase and
sediments for elements traces of relevant biological interest"

Parameters: OCEAN COMPOSITION > POLLUTANTS
OCEAN COMPOSITION > TRACE ELEMENTS

Discipline: EARTH SCIENCE > OCEAN

Keywords: TERRA NOVA BAY
ROSS SEA
ENVIRONMENTAL IMPACT
TRACE ELEMENTS
SEA WATER
ALKALINE METALS
CADMIUM
LEAD
COPPER

Sensors: POLGAN1 > POLAROGRAPHIC ANALYZER, PAR/174
IC1 > ION CHROMATOGRAPH, DIONEX 4000
MTC1 > MICROTRAC, LEED AND NORTHRUP
SPH2 > SPECTROPHOTOMETER, VARIAN CARY 3

Sources: PIRICAS > INST. FOR INSTR. ANAL. CHEMSTR., PI

Location: ANTARCTICA

Coverage: Minimum Latitude: 74S
Maximum Latitude: 75S
Minimum Longitude: 163E
Maximum Longitude: 167E

Data Center: PIRICAS > INST. FOR INSTR. ANAL. CHEMSTR., PI

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Storage Medium: LOG BOOKS

Dates: Start
1987-01-01

Stop

Revision
1992-05-31

Science Rev

Future Rev

PNRA > Programma Nazionale di Ricerche in Antartide

PNRA-39

SUMMARY: This set of data contains the total dissolved concentration of copper, lead, cadmium and zinc determined by differential pulse anodic stripping voltammetry in filtered sea water samples collected in Terra Nova Bay - Ross Sea (Antarctica) during the Italian expedition December 1987 - February 1988. The samples, which were filtered and acidified in the laboratory on board of the icebreaker ship as soon as possible after collection, were analyzed in our laboratory after oxidative treatment (U.V. light irradiation under reflux for six hours after adding H₂O₂) in order to eliminate dissolved organic matter, which may directly interfere with the electrode processes, and to release bound metal ion from electroinactive complexes. Measurements were also performed without oxidative treatment for comparison. The following were the total measurements concentration ranges after oxidative treatment: cadmium (21-55 ng/L); lead (35-76ng/L); copper (123-279ng/L) and zinc (95-475ng/L). The relative standard deviation (rsd) was about 30% for all elements apart from zinc whose rsd was about 50% owing to very high reagent contribution.

REFERENCES:

- Betti, M., Fuoco, R., and Papoff, P., Determination of trace elements in sea water samples from Terra Nova Bay - Ross Sea (Antarctica), Ann. Chim. (Rome), 79, 689-699, 1989.
- Papoff, P., Betti, M. and Giovannoni, G., Individual spread of concentration of alkali and earth-alkaline elements in sea water samples from Terra Nova Bay - Ross Sea (Antarctica), Proceeding Convegno "Environmental Impact in Antarctica", Roma - CNR, 8-9 Giugno 1990, pp. 1-6.
- Papoff, P., Betti, M., Onor, M. and Giovannoni, G., Individual spread of concentration of alkali and earth-alkaline elements in sea water samples from Terra Nova Bay - Ross Sea (Antarctica), - II, Ann. Chim. (Rome), 81, 297-315, 1991.P

Title: "Dissolved oxygen, nutrients, pH, total alkalinity, total inorganic carbon and some major constituents in Ross Sea and Southern Ocean"

Parameters: OCEAN COMPOSITION > ALKALINITY
OCEAN COMPOSITION > PH
OCEAN COMPOSITION > OXYGEN
OCEAN COMPOSITION > MAJOR ELEMENTS

Discipline: EARTH SCIENCE > OCEAN

Keywords: PACIFIC SECTOR
OXYGEN
WEST ROSS SEA
TERRA NOVA BAY
PLANKTON
ECOLOGY
CARBON CYCLE
CHEMICAL OCEANOGRAPHY
SEA WATER
DISSOLVED OXYGEN
CALCIUM
FLUORUM
SO4
MAGNESIUM
SODIUM
POTASSIUM
LITHIUM
STRONTIUM
DISSOLVED NUTRIENTS
NUTRIENTS
PH
TOTAL ALKALINITY
MAJOR ELEMENTS

Sensors: OHM1 > METROHM 665 DOSIMAT
AAN1 > AUTOANALYZER, TECHNICOM II
OHM2 > METROHM 670 TITROPROCESSOR
CO2AN1 > CO2 ANALYZER, ASTRO 2001

Sources: RV > RESEARCH VESSEL

Location: ANTARCTICA
SOUTHERN OCEAN

Coverage: Minimum Latitude: -75
Maximum Latitude: -51
Minimum Longitude: -180
Maximum Longitude: 162

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Storage Medium: MAGNETIC DISK, 1.4 MBYTES

Dates: Start
1988-01-05

Stop
1990-02-02

Revision
1992-05-31

Science Rev

Future Rev
1993-05-31

PNRA > Programma Nazionale di Ricerche in Antartide

PNRA-40

SUMMARY: Measured data concern the distribution of:

- 1) dissolved oxygen, nutrients and some major constituents of sea water at Terra Nova Bay during the 3rd Italian Antarctic Expedition 1987-88.
- 2) dissolved oxygen, nutrients, pH, and total alkalinity along a N-S direction between New Zealand and Ross Sea; the 5th Italian Antarctic Expedition 1989-90.
- 3) dissolved oxygen, nutrients, pH, total alkalinity and total inorganic carbon in the western part of the Ross Sea; the 5th Italian Antarctic Expedition 1989-90.
- 4) dissolved oxygen, nutrients, pH, total alkalinity and total inorganic carbon at Terra Nova Bay, longshore from Evans Cove to Campbell Ice Tongue; the 5th Italian Antarctic Expedition 1989-90.

All the data have been collected within an oceanographic program addressed to a biological study of Antarctic seas.

REFERENCES:

- Innamorati, M., Mori, G., Catalano, G. and Benedetti, F., (1989), Distribuzione della biomassa fitoplanctonica in rapporto ai fattori ambientali nel Mare di Ross, Baia di Terra Nova (Antartide). Università di Firenze, Dip.to di Biologia Vegetale. Resoconti dei Rilevamenti in Mare, 4: 1-58.
- Catalano, G. and Benedetti, F., (1990), Distribution of nutrients in the Terra Nova Bay and in the Ross Sea. In: Ministry for University and Scientific and Technological Research., Nat. Sc. Com. Ant., Ocean. Camp. 1987-88, Data Rep., 1: 61-83.
- Innamorati, M., Mori, G., Lazzara, L., Nuccio, C., Lici, L., Catalano, G. and Benedetti, F., (1990), Phytoplankton ecology in the Ross Sea. In: Ministry for University and Scientific and Technological Research., Nat. Sc. Com. Ant., Ocean. Camp. 1987-88, Data Rep., 2: 9-63.
- Catalano, G., Benedetti, F., Goffart, A. and Iorio, M., (1991), Distribution of Dissolved Oxygen, pH, Total Alkalinity, and Nutrients in Southern Ocean and Ross Sea (R/V "Cariboo" 1989-90 cruise). In: Ministry for University and Scientific and Technological Research., Nat. Sc. Com. Ant., Ocean. Camp. 1989-90, Data Rep., 1, 11-23.
- Catalano, G., Benedetti, F., Goffart, A. and Iorio, M., (1991), - Coastal Oceanography from Cape Russel to Campbell Ice Tongue (Terra Nova Bay). Dissolved Oxygen, Nutrients, pH, Total Alkalinity and Total Inorganic Carbon distribution. In: Ministry for University and Scientific and Technological Research., Nat. Sc. Com. Ant., Ocean Camp. 1989-90, Data Rep., 1: 25-32.
- Fabiano M., Povero P., Catalano G. and Benedetti F., (1991), - Hydrological data collected during the biological, chemical and geological sampling in Terra Nova bay. In: Ministry for University and Scientific and Technological Research, Nat. Sc. Com. Ant., Ocean. Camp. 1989-90, Data Rep., 1, 35-71. IN PRESS
- Catalano G., Benedetti F. and Boldrin, A., (in press), Le condizioni idrologiche a Baia di Terra Nova: ossigeno disciolto, nutrienti ed alcuni elementi maggiori nell'estate australe 1987-88. Atti IX Convegno Scientifico Nazionale dell'AIOL.
- Catalano, G., (in press), L'attività del gruppo di Oceanografia chimica nell'ambito delle campagne oceanografiche italiane in Antartide. Oceanografia in Antartide, Seminario Internazionale, Concepcion (Chile), 7-9 marzo 1991.
- Goffart, G., Catalano, G., Magazzo, G. and Hecq, J.H., (in press), Some examples of the influence of hydrodynamical constraints on the phytoplanktonic biomass and productivity in the Southern Ocean. Oceanografia in Antartide, Seminario Internazionale, Concepcion (Chile), 7-9 marzo 1991.

Title: "Study of glacial morphologies through techniques of elaborations
multispectral SPOT images"

Parameters: GEOGRAPHY AND LAND COVER
GEOGRAPHY AND LAND COVER > LANDFORMS
GEOGRAPHY AND LAND COVER > GLACIERS
EARTH RADIATIVE PROCESSES > ALBEDO
EARTH RADIATIVE PROCESSES > RADIANCE

Discipline: EARTH SCIENCE > LAND

Keywords: VICTORIA LAND
GLACIOLOGY
IMAGE PROCESSING
REMOTE SENSING
GEOMORPHOLOGY

Sensors: MSS > MULTI SPECTRAL SCANNER

Sources: SPOT > SYSTEM PROBATOIRE D'OBSERVATION DE LA TERRE
LANDSAT > LAND REMOTE SENSING SATELLITE

Location: ANTARCTICA

Coverage: Minimum_Latitude: 70S
Maximum_Latitude: 75S
Minimum_Longitude: 160E
Maximum_Longitude: 165E

Data Center: RME3AEI > ENEA CRE CASACCIA, DIGITAL IMAGERY

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Storage Medium: 4 MAGNETIC TAPES, 6250 BPI 1 SCENA SPOT CIRCA 9 MBYTES

Dates: Start
1988-12-01

Stop

Revision
1992-05-31

Science Rev

Future Rev

PNRA > Programma Nazionale di Ricerche in Antartide

PNRA-41

"Study of glacial morphologies through techniques of elaborations
multispectral SPOT images"

SUMMARY: Resolution 20m/pxl - 3 spectral bands: xs1 = 0.50-0.59 micro-m; xs2 = 0.61-0.68 micro-m; xs3 = 0.79-0.89 micro-m. Elaboration level of the "raw" data: 1B: radiometric and geometric corrections (spacecraft trim).
Elaborations carried out by the current O.U.:
- reconstruction of information on saturated zones, 4.5 and 6 bands by Landsat Mss.
- application of high-pass and directional filters to Mss, SPOT and LADSAT TM data.
- acquisition of photomosaic of the Victoria Land region in Lambert projection (Landsat Mss band 7). Spectral analysis from multispectral images.

REFERENCES:

Bianchi, R., Casacchia, R., Poscolieri, M., Lucchitta, B.K. and Picchiotti, A.,
Image processing techniques applied to landsat Mss
Images of Victoria Land, Antarctica. Mem. Soc. Geol. It., 34, 151-160, 1988.

Title: "Geophysical study of the Ross Sea (Antarctica)"

Parameters: GEODYNAMIC FEATURES > SEISMIC
GEODYNAMIC FEATURES > GRAVITY FIELDS

Discipline: EARTH SCIENCE > INTERIOR AND CRUST

Keywords: BALLENY ISLANDS
GEOPHYSICS
GEOLOGY
SOLID EARTH
GEODYNAMICS
SEISMIC EXPLORATION
ROSS SEA

Sensors: MSMREC > MULTICHANNEL SEISMIC RECORDER, REFLECTION DATA
SNDB > SONOBUOYS
GV > GRAVIMETER
MAG > MAGNETOMETER

Sources: RVOGS > RESEARCH VESSEL, OGS EXPLORA

Location: ANTARCTICA

Coverage:

Data Center: TSAOGS > OBSERVATORY FOR EXPER. GEOPHYSICS, TS

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Storage Medium: 1100 MAGNETIC TAPES, HD, 6250 BPI

Dates: Start
1988-01-15

Stop
1992-12-31

Revision
1992-05-31

Science Rev

Future Rev
1993-05-31

PNRA > Programma Nazionale di Ricerche in Antartide

PNRA-42

"Geophysical study of the Ross Sea (Antarctica)"

SUMMARY: The data set contains multichannel seismic reflection data, magnetic and gravity data collected by the R/V OGS-EXPLORA, during the first and second geophysical exploration cruises to the Ross Sea (1988-1989) as part of the Italian Antarctic research program (PNRA). The seismic data have been recorded using a 96-channel streamer and a sampling interval of 4 ms. The maximum data length is 24 s. The data are available through: Osservatorio Geofisico Sperimentale, Borgo Grotta Gigante, 34010 - Trieste. The data are stored on tape and are not available on computer system.

REFERENCES:

Eittreim, S.L. and Hampton, M.A. (ed.), 1987, - The Antarctic Continental Margin Geology and Geophysics of Offshore Wilkes Land; published by Circum-Pacific Council for Energy and Mineral Resources Houston, Texas, U.S.A..

Craddock, C. (ed), 1982, - Antarctic Geoscience; I.U.G.S., The University of Wisconsin Press Madison, Wisconsin. The Antarctic continental margin: geology and geophysics of the western Ross sea; Circum-Pacific Council for Energy and Mineral Resources, Earth Science Series 5b, 1987.

Hinz, K., Kristoffersen, Y., Antarctica Recent Advances in the understanding of the continental shelf; Geologique Jahrbuch Reihe E., Heft 37, 1987.

Title: "Research for a limnological characterization of Antarctic lacustrine environments"

Parameters: BIOLOGICAL ENTITIES > MICROORGANISMS
BIOLOGICAL ENTITIES > OCEAN VEGETATION
OCEAN COMPOSITION > PHYTOPLANKTON
OCEAN COMPOSITION > ZOOPLANKTON

Discipline: EARTH SCIENCE > OCEAN

Keywords: BIOLOGY
AQUATIC BOTANY
LIMNOLOGY
GROUND WATER PHYTOPLANKTON
HYDROCHEMISTRY

Sensors: ALT1 > ALTIMETER, CSSP11
ECHORCV > ECHOGRAPHIC RECEIVER
TACH > TACHEOMETER
PHM > PHMETER
PHOT > PHOTOMETER

Sources: BTNITF > TARN FLAT, TERRA NOVA BAY INLAND

Location: ANTARCTICA

Coverage: Minimum_Latitude: 75S
Maximum_Latitude: 74S
Minimum_Longitude: 162E
Maximum_Longitude: 165E

Data Center: NORIII > ITALIAN INST. FOR HYDROBIOLOGY, NO

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Storage Medium: MAGNETIC DISK

Dates: Start
1988-12-31

Stop

Revision
1992-05-31

Science Rev

Future Rev

PNRA > Programma Nazionale di Ricerche in Antartide

PNRA-43

"Research for a limnological characterization of Antarctic
lacustrine environments"

SUMMARY: The main goal of the limnological study carried out during the 1988-89 expedition, was to formulate a first characterization, from a physical and chemical point of view, of the environments present in 4 areas, called Edmondson Point, Inexpressible Island, Tarn Flat and Italian Base. The biological data refer to phytoplankton and in a minor way, to zooplankton and macrobenthos. Among the 70 lakes that have been visited, 50 have been topographically surveyed, defining their dimension and shape. The hydrochemistry data (15 parameters) have been corrected because of the marine contribution, using chloride ion as an index. Samples of snowy precipitations have been analyzed. The research is mainly based on a first survey and a morphometric characterization of about 70 small water bodies. The study on the main chemical parameters have been sufficiently detailed. Its main goal was to define the ionic spectrum of lakes and their trophic level. Information on the biological component (phytoplankton, zooplankton and benthos) are still preliminary, because many of the visited lakes were covered with ice and thus impossible to be sampled in a proper way. Other samples of phytoplankton, collected in 1989-90, are now being studied.

REFERENCES: Guilizzoni, P. et al., 1990, Indagine per una caratterizzazione limnologica di ambienti lacustri antartici. Relazione finale. Università di Padova, pp. 55.

Title: "Copepods and larval Crustacean Decapods in the Terra Nova Bay and
in the Ross Sea"

Parameters: OCEAN COMPOSITION > BIOMASS
OCEAN COMPOSITION > ZOOPLANKTON
HYDROLOGIC PARAMETERS

Discipline: EARTH SCIENCE > OCEAN

Keywords: SOUTH PACIFIC OCEAN TROPHIC LEVELS
ROSS SEA PRIMARY PRODUCTION
TERRA NOVA BAY
PLANKTOLOGY
ZOOLOGY
ECOLOGY
BIOLOGICAL OCEANOGRAPHY
BIOGEOGRAPHY
GEOGRAPHICAL DISTRIBUTION
COPEPODS
LARVAL CRUSTACEAN DECAPODS
PECULIAR BIOTOPES

Sensors: MSC > MICROSCOPE
SMSC > MICROSCOPE, STEREO
PG > PHOTOGRAPHIC APPARATUS

Sources: GEUISAM2 > INST. FOR ENVIRONMENTAL MARINE SCIENCES, GE

Location: ANTARCTICA
PACIFIC OCEAN

Coverage: Minimum Latitude: 75S
Maximum Latitude: 74S
Minimum Longitude: 163E
Maximum Longitude: 168E

Data Center: GEUISAM1 > INST. FOR ENVIRONM. SEA SCIENCES, GE

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Storage Medium: MAGNETIC DISK

Dates: Start
1988-01-01

Stop

Revision
1992-05-31

Science Rev

Future Rev

PNRA > Programma Nazionale di Ricerche in Antartide

PNRA-44

SUMMARY: The qualitative and quantitative study concerning copepods and larval crustacean decapods has been fitted out with hydrological parameters (temperature, salinity), collected by means of specific apparatus. The data refers to the periods: 12/1-2/2/88 (obtained by examining samples collected in 12 stations placed in Terra Nova Bay and in other 4 stations located in the sea area before the Bay - (Ross Sea); and 25/11/89 - 12/1/90

Minimum Latitude: 50 55 20 S (89-90)
Maximum Latitude: 75 01 90 S (89-90)
Minimum Longitude: 164 08 40 E (89-90)
Maximum Longitude: 179 58 40 W (89-90)

(obtained by examining samples collected during the navigation course from New Zealand to Terra Nova Bay, in the Ross Sea, and in Terra Nova Bay). Densities /m³ of found (as a function of sampling depths) were calculated. The various developmental stages, including the biometric study of *Metridia gerlachei* (copepod) and *Notocrangon antarcticus* (decapod) have been recognized. The data have been registered in the archives of the ISAM (Planktonology Chair). The data elaboration and recording have been effected by computer. Reprints of the published works are available.

REFERENCES:

- Carli, A., Mariottini, G.L. and Pane, L., 1989, Bibliografia: Copepodi e larve di Crostacei Decapodi. Programma Nazionale di Ricerche in Antartide. Università di Genova, Cattedra di Planctologia, Facoltà di Scienze Matematiche, Fisiche e Naturali. 1-31. Stampato in proprio.
- Carli, A. and Pane, L., 1990, Contribution to the study of larval crustacean Decapods in the Terra Nova Bay (Ross Sea): *Notocrangon antarcticus* (Pfeffer 1887). Nat. Sc. Com. Ant., Ocean. Camp. 1987-88. Data Rep., II, 161-167
- Carli, A., Mariottini, G.L. and Pane, L., 1990, Contribution to the study of Copepods collected in Terra Nova Bay (Ross Sea). Nat. Sc. Com. Ant., Ocean. Camp. 1987-88. Data Rep., II, 129-159.
- Carli, A., Feletti, M., Mariottini, G.L. and Pane, L., 1990, Distribuzione di *Metridia gerlachei* Giesbrecht, 1902 (Copepoda Calanoida) nella Baia di Terra Nova (Mare di Ross). IX Congr. A.I.O.L., S. Margherita Ligure, 20-23. 11. 90 (abstracts), 37.
- Carli, A., Feletti, M., Mariottini, G.L. and Pane, L., Distribuzione di *Metridia gerlachei* Giesbrecht, 1902 (Copepoda Calanoida) nella Baia di Terra Nova (Mare di Ross). IX Congr. A.I.O.L., S. Margherita Ligure, 20-23/11/1989. (in press).
- Carli, A., Feletti, M., Mariottini, G.L. and Pane, L., Contribution to the study of Copepods collected during the Italian Oceanographic Campaign 1989-90. Nat. Sc. Com. Ant. Data Rep., (in press).

Title: "Atmospheric and ozone measurements using Lidar system"

Parameters: ATMOSPHERIC COMPOSITION > AEROSOLS
ATMOSPHERIC COMPOSITION > CLOUDS
ATMOSPHERIC COMPOSITION > OZONE
ATMOSPHERIC DYNAMICS > ATMOSPHERIC TEMPERATURE
ATMOSPHERIC DYNAMICS > WINDS

Discipline: EARTH SCIENCE > ATMOSPHERE

Keywords: ROSS SEA
TERRA NOVA BAY
TETHYS BAY
ADELIE COVE
DUMONT D'URVILLE
POLAR OZONE
GEOPHYSICS
CLIMATIC CHANGE
STRATOSPHERE CHEMISTRY
ATMOSPHERIC PHYSICS
STRATOSPHERIC POLAR CLOUDS
LIDAR
CLOUD PHYSICS

Sensors: LIDAR > LIGHT DETECTION AND RANGING
EBSLR > ELASTIC BACKSCATTERING LASER RADAR SYSTEM
DIAL > DIFFERENTIAL ABSORPTION LIDAR

Sources:

Location: ANTARCTICA

Coverage: Minimum Latitude: 71S
Maximum Latitude: 66S
Minimum Longitude: 140E
Maximum Longitude: 164E

Data Center: FIRIROE > INST. FOR E.M. WAVES RESEARCH, FI

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Storage Medium: 1 OPTICAL DISK, 180 MBYTES

Dates: Start
1988-01-01

Stop

Revision
1992-05-31

Science Rev

Future Rev
1993-05-31

PNRA > Programma Nazionale di Ricerche in Antartide

PNRA-45

SUMMARY: The 1988 data set are from 1st of January through the end of February. These data have been collected at the Italian Base of Terra Nova Bay by means of an elastic backscattering lidar. Measures of cloud top and base, cloud depolarization and stratospheric aerosols up to 30 km are made. The 1989 and 1990 data sets cover all the years with the system placed at the French Base of Dumont D'Urville. Measures of polar stratospheric clouds are added to the preceding ones. The vertical height resolution is about 5 mt. at 8 bits for tropospheric clouds and up to 30 mt. at 12 bits for stratospheric measures. Some of cloud measures are included in ECLIPS project (Experimental Cloud Lidar Pilot Study) for a global investigation on clouds characteristics. From 1991 ozone vertical profiles are obtained with a Dial. The vertical distributions are from 4 to 30 Km. The vertical resolutions are from 200 m. to 1 Km. Data can be distributed on different media: optical disks; magnetic cassettes; magnetic tapes; 3.5 and 5 floppies.

REFERENCES:

- Sacco, V.M., Castagnoli, F., Morandi, M. and Stefanutti, L., Elastic backscattering lidar system for atmospheric measurements in Antarctica, Opt. and Quant. Elect., 21, 215-226, 1989. Sistema dial per il sondaggio dell'ozono in Antartide, Proc. of 1. Convegno Nazionale "Strumentazione e Metodi di Misura Elettronici", 313-317, 1990.
- Stefanutti, L., Del Guasta, M., Morandi, M., Castagnoli, F. and Sacco, V.M., L'applicazione del lidar e del dial nello studio dell'atmosfera Antartica, Il nuovo Saggiatore, 5(2), 46-62, 1989.
- Stefanutti, L., Morandi, M., Del Guasta, M., Godin, S., Megie, G., Brechet, J. and Piquard, J., Polar stratospheric cloud observations over the Antarctic Continent at Dumont D'Urville, J. Geophys. Res., Vol. 96, n. D7, pp.12975-87, July 20, 1991.

Title: "Techniques for the acquisition and elaboration of the images of
clasts"

Parameters: GEOLOGICAL PARAMETERS > PETROLOGY

Discipline: EARTH SCIENCE > INTERIOR AND CRUST

Keywords:

Sensors:

Sources:

Location: ANTARCTICA

Coverage:

Data Center: GEUDIBE > DEPT. OF BIOPHYS. ELECTRON. ENGINRG., GE

Originating Center: GEUDIBE

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Storage Medium:

Dates: Start

Stop

Revision
1992-05-31

Science Rev

Future Rev

PNRA > Programma Nazionale di Ricerche in Antartide

PNRA-46

"Techniques for the acquisition and elaboration of the images of clasts"

SUMMARY: Synthetic description of the scientific problem.
The shape and superficial characteristics of clasts reflect the sedimentary processes, they underwent during the transportation. As a matter of fact, each transporting agent determines in the clasts particular shapes, that well distinguish them. Until today, the classification of clasts, according to these properties, has been done by geologists, who visually value the parameters and qualitatively confront them with comparative tables. To avoid a repetitive analysis, which is also very subjective from the side of the human operator, it would be better to have a quantitative instrumentation to analyze, measure and classify in a "repetitive" way, the considerable mass of clasts, both fine and coarse, obtained through the acquisition campaigns in Antarctica and the study of possible microfossils present in the sample. From this quantitative analysis, data on procedures of standardization and identifying of discriminating parameters could emerge. Synthetic description of the research program. In the current research, a mechanism of acquisition of clasts images (of grains, of pebbles and for microscope) will be studied; therefore various techniques for the elaboration of these images will be carried out. In particular, programs able to identify single clasts present in an image and to measure their characteristic parameters, will be elaborated. Therefore morphometric quantities will be measured, such as: axis of elongation, rounding off, sphericity, composition of the surface, etc. Procedures of the parameters measurement will refer to the traditional analysis of the same samples. A statistical analysis to select the most significant parameters for the classification will also be developed with the collaboration of experts from Univ. of Trieste and Ferrara. A decision - making system, equipped with a data base, where to memorize the predefined classes and the rules, used by geologists in the current classification, will finally be created.
Goals of the program.
The research will provide a set of programs, organized in a modular system, which will serve as support for decision to the geologist, who is classifying the clasts. Particularly, in 1989 some typical samples, that have been "preclassified" by an expert, will be examined, so as to create a first reference data bank; therefore techniques of automatic measurements of some characteristic parameters of clasts will be developed using innovatory methodologies, such as fractal analysis and mathematical morphology. Through these techniques, it will be possible to have a very accurate measurements system of the grains and pebbles form and superficial structure.
Software and data availability:
The system is currently under development on Sun4 workstation (C language).
The algorithms of image processing already available are the following and may be request to DIBE:
Segmentation algorithm: of the thresholds types, to transform the images from the numeric to symbolic level and make the clasts characterizable.
Geometric algorithm: able to extract the main geometric features (area, perimeter, ingumbrance) for the clast. Clast images of Antarctic sand are also available at DIBE.

Title: "Major and trace element geochemistry from the Ross Sea, Antarctica"

Parameters: OCEAN COMPOSITION > SEDIMENTS
GEOLOGICAL PARAMETERS > GEOCHEMICAL ANALYSIS

Discipline: EARTH SCIENCE > OCEAN
EARTH SCIENCE > INTERIOR AND CRUST

Keywords: ROSS SEA
MARINE SEDIMENTS
MINING SCIENCE
GEOCHEMISTRY
ROSS SEA SEDIMENTS

Sensors: GFAAS > ATOMIC ABSORPTION SPECTROMETER, GRAPHITE FURNACE
THAN > SIMULTANEOUS THERMAL ANALYZER

Sources: VEUDSA > DEPT. OF ENVIRONM. SCIENCES GEOMIN. SECT., VE

Location: ANTARCTICA

Coverage: Minimum Latitude: 73S
Maximum Latitude: 75N
Minimum Longitude: 164W
Maximum Longitude: 173E

Data Center: VEUDSA > DEPT. OF ENVIRONM. SCIENCES GEOMIN. SECT., VE

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Dates: Start
1988-05-01

Stop
1988-12-10

Revision
1992-05-31

Science Rev

Future Rev

PNRA > Programma Nazionale di Ricerche in Antartide

PNRA-47

SUMMARY: Major, minor and loss on ignition concentrations have been determined in glacial marine surface and bottom sediments collected from the Italian Antarctic Expedition 1987-88 in the Ross Sea. The geochemical investigations have shown that SiO₂ and Al₂O₃ are the prevailing oxides. In decreasing order of abundance are the oxides of Fe, Ca, Mg, Na and K, and L.O.I. is extremely variable. The geochemical data clearly indicate the silicate composition of the examined sediments. The different concentration of the major elements, their geographical distribution and inter-relations allowed the distinction of three population of samples with specific geochemical characteristics and location. Concentrations of eight trace elements (Cr, Ni, Co, V, Cu, Pb, Zn, Cd) were also determined. The geochemical investigations gave the following average contents and range (in ppm): 47 for Cr(11-97), 23 for Ni(2-40), 63 for Co(20-135), 49 for V(10-75), 25 for Cd(0.04-0.72). Cobalt and Pb showed anomalous behaviour with respect to other metals with similar geochemical properties. Peculiar geochemical characteristics, different inter-element relations, different geographic distribution of the concentrations allowed the identification of five groups of sediments with peculiar location and water depth range. A statistical analysis of the geochemical variables using the cluster method shows that Si is independent of the other elements, which group in associations. A multivariate statistical analysis based on geochemical, granulometric and environmental parameters identifies five distinct sediment groups located in different areas of sedimentation and with peculiar geochemical characteristics. Group 1, in the external platform, composed by very fine sediments, is characterized by highest content both of Mg, L.O.I. and Cr, Ni, V and Zn. Group 2, from banks, formed by pelitic sands, is distinguished by lower Cu, Zn and higher Cr and Si. Group 3, of the internal platform consists of sandy sediments with high value of Na, Al, Ca, Pb, and low of Zn, V. Group 5 formed by materials with different grain-size distribution located south of Coulman Island, is distinguished by very high content of Zn, Fe, Ti, Na while Cr, Co, Pb and Si are scarcer. The materials are glacial detritic, are derived from the rocky hinterland formations, and are more or less reworked by transport and deposition processes depending on the energy level of the marine-sedimentary environments. It is difficult to establish the parent rocks of these glaciomarine sediments on the basis of geochemical data alone, given the scarcity of comparison data from the hinterland rocks. Only in the case of the sediments south of Coulman Island can one be certain of a contribution from the McMurdo volcanics. For the external platform sediments, the highest contents of Si and L.O.I. confirm the input of material from biogenic neoformation.

REFERENCES:

- Hieke Merlin, O., Longo Salvador, G., Menegazzo Vitturi, L., Molinaroli, E., Pistolato, M., and Rampazzo, G., Major element geochemistry of sediments from the Ross Sea, Antarctica, Boll. Oceanol. Teor. ed Applic. Vol. VII, N. 1-2, 83-96, 1989.
- Hieke Merlin, O., Longo Salvador, G., Menegazzo Vitturi, L., Pistolato, M., and Rampazzo, G., Preliminary results on trace element geochemistry of sediments from Ross Sea, Antarctica, Boll. Oceanol. Teor. ed Applic., Vol. VII, N. 1-2, 97-108, 1989.
- Hieke Merlin, O., Longo Salvador, G., Menegazzo Vitturi, L., Pistolato, M. and Rampazzo, G., Geochemical characteristics of western Ross Sea (Antarctica) sediments, submitted for publication to Marine Geology.

Title: "Major, Minor, and trace element concentration of meltwaters,
streams and lakes at Terra Nova Bay (Victoria Land, Ross Sea, Antarctica)"

Parameters: GEOLOGICAL PARAMETERS > GEOCHEMICAL ANALYSIS Discipline: EARTH SCIENCE > LAND
HYDROLOGIC PARAMETERS > GROUND WATER
HYDROLOGIC PARAMETERS > SURFACE WATER

Keywords: ROSS SEA
ENVIRONMENTAL IMPACT
NATURAL ELEMENTS
POLLUTION
GEOCHEMISTRY
TERRA NOVA BAY
MAJOR ELEMENTS
MINOR ELEMENTS
TRACE ELEMENTS
ENVIRONMENTAL IMPACT

Sensors: GFAASPH > ATOMIC ABSORPTION SPECTROPHOTOMETER, GRAPHITE FURNACE
ICP > INDUCTIVELY COUPLED PLASMA
IC > ION CHROMATOGRAPH

Sources: RME3AEAS > ENEA CRE CASACCIA

Location: ANTARCTICA

Coverage: Minimum_Latitude: 76S
Maximum_Latitude: 72S
Minimum_Longitude: 170E
Maximum_Longitude: 162E

Data Center: RME3AEAS > ENEA CRE CASACCIA, DATA ANAL. CNTR.

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Storage Medium: 100 Kb MAGNETIC TAPES

Dates: Start Stop
 1987-01-04

Revision
1992-05-31

Science Rev

Future Rev

PNRA > Programma Nazionale di Ricerche in Antartide

PNRA-48

"Major, Minor, and trace element concentration of meltwaters, streams and lakes at Terra Nova Bay (Victoria Land, Ross Sea, Antarctica)"

SUMMARY: This data set contains major, minor and trace element concentrations of meltwaters, streams and lakes collected at the Terra Nova zone during three years period, January 1987, February 1989. The data set resides on IBM 3090 of C.E.D. (C.R.E. Casaccia) data are archived in scientific notation without blank between variables.

The waters sampled were generally from lakes in glacial valleys which have no definite inflow and outflow channels. The lakes are not generally very deep and results essentially from the melting of snow and ice. owing to the low level of deglaciation, these lakes do not produce sediments, nor do they significantly rework those already present. Water-rock interactions are very limited compared with situations in more temperate areas. The only activity that presumably exerts some influence on sedimentation is that of algal and bacterial origin: The water samples collected were preconcentrated on site using both specific extraction of organo-metallic complexes in organic solvents and chelating resins.

Complexing reagent were ammonium-pyrrolidine-dithiocarbamate (APDC) for preconcentrating trace metals (Zn, Cu, Cd, Pb, V, Mo, Ni, Cr, Co) and diphenylthiocarbazone (dithizone) for Zn, Cu, Cd, Pb, and Mg iron and manganese were preconcentrated by chelex 100 resin. The trace metals were back-extracted in aqueous solution and determined by atomic absorption spectrometry utilizing a Perkin-Elmer model 5000 spectrometer with Zeeman system. In this case the sensitivity attained under normal condition was around a few ng/l.

Every year the data set could be integrated and updated. Computer is not in line.

Copies of data are available only on request.

REFERENCES:

- Lyons, W.M. B., Spencer, M.J., Hinesand, M.E. and Gaudette, H.E., (1988), The trace metal geochemistry of pore water brines from two hypersaline lakes. *Geochimica et Cosmochimica Acta* - Vol. 52, pp 265-274.
- Green, W.J., Angle, M.P. and Chave, K.E., (1988), The geochemistry of Antarctic streams and their role in the evolution of four lakes of the McMurdo dry Valleys. *Geochimica et Cosmochimica Acta*, 52, 1265-1274.
- Heywood, R.B., (1984), Antarctic inland waters in : *Antarctic ecology*, vol. I, Academic press, London, 279-343.
- Osamu, Matsubaya, Hitoshi, Sakai, Tetsuya, Torii, Burton, H. and Knowles, K., (1979), Antarctic saline lakes. Stable isotopic ratios, chemical composition and evolution. *Geochimica et Cosmochimica Acta*, 43, 7-24.

Title: "Heavy metals speciation in sea water"

Parameters: OCEAN COMPOSITION > POLLUTANTS
OCEAN COMPOSITION > CHEMICAL TRACERS

Discipline: EARTH SCIENCE > OCEAN

Keywords: TERRA NOVA BAY
GERLACHE INLET
ROSS SEA
HEAVY METALS
SPECIATION MECHANISMS
ANODIC STRIPPING VOLTAMMETRY
ANALYTICAL CHEMISTRY
CHEMICAL METHODOLOGY
SEA ENVIRONMENTAL IMPACT
TRACE METALS

Sensors: MFCE > THIN MERCURY FILM ROTATING DISK GLASSY CARBON ELECTRODE
POLGAN > POLAROGRAPHIC ANALYSER

Sources:

Location: ANTARCTICA

Coverage: Minimum Latitude: 75S
Maximum Latitude: 76S
Minimum Longitude: 164E
Maximum Longitude: 168E

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Storage Medium: MAGNETIC DISK

Dates: Start
1988-01-05

Stop

Revision
1992-05-31

Science Rev

Future Rev

PNRA > Programma Nazionale di Ricerche in Antartide

PNRA-49

SUMMARY: This data set contains total concentration, the labile fraction, the ligand concentration and the relative conditional stability constant for lead cadmium and copper in surface samples of sea water collected in the Terra Nova Bay during the 1987-88 and 1988-89 expeditions. Total concentration is measured by anodic stripping voltammetry on acidified samples at pH 2. Specific parameters are obtained by titration of samples at natural pH following the measurements by anodic stripping voltammetry. Measurements are carried out using a thin mercury film rotating disk glassy carbon electrode as working electrode.

REFERENCES:

Capodaglio, G., Coale, K.H. and Bruland, K.W., Lead speciation in surface waters of the eastern north Pacific, *Mar. Chem.*, 29, 221-233, 1990.

Ruzic, I., Theoretical aspects of the direct titration of natural waters and its information yield for trace metal speciation, *Anal. Chim. ACTA*, 140, 99-113, 1982.

Bruland, K.W., Oceanic zinc speciation: complexation of zinc by natural organic ligands in the central north pacific, *Limnol. Oceanogr.*, 34, 267-283, 1989.

Van Den Berg, C.M.G., Determination of complexing capacity and conditional stability constant of complexes of copper (II) with natural organic ligands in sea water by cathodic stripping voltammetry of copper-catechol complex ions, *Mar. Chem.*, 15, 1-18, 1984.

Title: "Cytogenetics and physiomorphology of Antarctic fishes"

Parameters: BIOLOGICAL ENTITIES > OCEAN WILDLIFE

Discipline: EARTH SCIENCE > OCEAN

Keywords: ROSS SEA
TERRA NOVA BAY
COMPARATIVE PHYSIOLOGY
COMPARATIVE MORPHOLOGY
FISHES
CYTOGENETICS
OSMOREGULATION
NEUROTRANSMITTERS
EVOLUTIONARY CYTOGENETICS
MORPHOPHYSIOLOGY

Sensors: MSC > MICROSCOPE
CRY > CRYOSTATE
CYT > CYTOCHEMICAL RESEARCH INSTRUMENTS

Sources: GEUIAC > INST. FOR COMPARATIVE ANATOMY, GE

Location: ANTARCTICA

Coverage: Minimum_Latitude: 74S
Maximum_Latitude: 74S
Minimum_Longitude: 164E
Maximum_Longitude: 164E

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Storage Medium: PRINTED PAPERS
35 mm SLIDES

Dates: Start
1989-04-15

Stop

Revision
1992-05-31

Science Rev

Future Rev
1993-05-31

PNRA > Programma Nazionale di Ricerche in Antartide

PNRA-50

SUMMARY: We have collected karyological data - such as conventional and banded karyotype morphology, multiple sex-chromosome systems (X1XY1 - X1X1X2X2), genome size, G-C content of DNA, localization of NORs - in Notothenioid fish species of the families Channichthyidae and Nototheniidae from the Ross sea (Cryodraco antarcticus, Chionodraco hamatus, Pagetopsis macropterus; Pagothenia bernacchii, P. hansonii, Trematomus newnesi, T. centronotus). On some of these species we are collecting information on the osmoregulatory system, on the neuroendocrine substances localized in the central nervous system and in endocrine and paracrine cells distributed along the digestive tract, on the morphology of the reproductive organs. We have in program to extend our cytogenetics reports to new species in the next future and to deep our functional and structural study in the other fields improving methodological approaches. We have initiated this research early in 1990 and our data are the moment preliminary. Data base is stored in papers and typed tables and is not yet active on a computer system.

REFERENCES:

The following titles are actually (October 1990) in press:

Morescalchi, A., Pestarino, M., Pisano, E., Stanyion, R., Stingo, V. and Morescalchi, M.A., Preliminary data on the cytogenetics of notothenioid fishes. 1st Biol. Meeting of the PRNA, ROME, 1989.

Morescalchi, A., Pisano, E. and Stingo, V., Cytogenetics of Antarctic ice-fishes. Act. XXXVI Convegno G.E.I., Pavia 1990 - Bas.Appl. Histochem., 35.

Stingo, V. and Pisano, E., Genome size in some Nototheioid Fishes. Abstr. 2nd Intern. Conf.: Biology of Antarctic Fishes, Ravello 1990, p. 83.

Vallarino, M., Pestarino, M. and Pisano, E., Immunocytochemical investigations of peptidergic activities in the brain of the Antarctic fish, Chionodraco hamatus. Identification and distribution of FMRF-amide-like peptides. ibidem, 88-89.

Uva, B., Ghiani, P., Masini, M.A., Devecchi, M. and Napoli, L., A renin-angiotensin system in the Antarctic fish Pagothenia bernacchii and Chionodraco hamatus. J. Endocrinology, Nov. 1990: Abstr. 181 Meeting Soc. Endocrin.

Title: "Distribution of polychlorinated biphenylic compounds (PCB) in sediments and soil"

Parameters: OCEAN COMPOSITION > POLLUTANTS
OCEAN COMPOSITION > ORGANIC MATTER
OCEAN COMPOSITION > SEDIMENTS

Discipline: EARTH SCIENCE > OCEAN

Keywords: VICTORIA LAND
TERRA NOVA BAY
ROSS SEA
ENVIRONMENTAL IMPACT
ORGANIC COMPOUNDS
SEA WATER
SOIL
SEDIMENT
PCB

Sensors: GC1 > GAS CHROMATOGRAPH, CARLO ERBA MEGA 5160
FTIRS1 > SPECTROMETER, FT-IR NICOLET 740
LC1 > LIQUID CHROMATOGRAPH, PERKIN ELMER 410
SFEX > SUPERCRITICAL FLUID EXTRACTION
SFC > SUPERCRITICAL FLUID CHROMATOGRAPH
FTIRCS > CHROMATOGRAPH SPECTROM., FT-IR GAS INTERF. (PROTOT.)

Sources: PIRICAS > INST. FOR INSTR. ANAL. CHEMSTR., PI

Location: ANTARCTICA

Coverage: Minimum_Latitude: 74S
Maximum_Latitude: 75S
Minimum_Longitude: 163E
Maximum_Longitude: 167E

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Storage Medium: SCIENTIFIC JOURNALS
CONGRESS PROCEEDINGS
LOG BOOKS

Dates: Start
1988-01-01

Stop

Revision
1992-05-31

Science Rev

Future Rev

PNRA > Programma Nazionale di Ricerche in Antartide

PNRA-51

"Distribution of polychlorinated biphenylic compounds (PCB) in sediments and soil"

SUMMARY: TABLE II: Total PCBs and 28,54,101 and 180 PCB congeners concentrations (ng/L) found in three Antarctic sea water samples

Sampling Stations	1SW	3SW	5SW
Total PCBs (HPLC)	1.3	1.9	1.1
Total PCBs (HRGC)	1.5	0.5	1.7
28	0.02	0.02	0.04
54	0.06	0.03	0.05
101	0.09	0.03	0.04
180	n.d.	n.d.	n.d.

In Table II, the preliminary results for three analyzed samples are reported. These results show that:

- total PCB concentrations between 0.5 and 2 ng/L (results from both HPLC and HRGC measurements are in quite good agreement);

- the equivalent Aroclor mixture used for the PCB calibration is 1242+1254+1260 in the percentage of 50, 40 and 10 respectively.

This mixture gave a chromatographic pattern comparable with that of the sample;

- the distribution among congeners classes shows a chlorination level typical for natural waters and is centred on three to penta substituted isomers;

- as expected, only three to penta chlorinated isomers were over the detection limit. At present only four of them (IUPAC numbers: 28, 52, 101, 180) have been individually determined by the standard addition method and GC/FT-IR identification. The relevant concentrations range between 0.02-0.04, 0.06-0.15, and 0.03-0.09 ng/L respectively, since the 180 isomer was not detectable.

Analysis carried out on particulate matter showed that only about ten percent of the total PCB content was associated with it. In conclusion, the area under observation shows low PCB contamination, which is typical of oceanic waters(3). The total PCB concentration obtained is comparable with those reported by other authors for the same areas (5) and about 10 times higher than the values obtained by Tanabe

(4). Work is in progress for analyzing other sea water and sediment samples. These results will allow us to show whether there is a pack melting effect on the concentration of these pollutants and to better correlate the concentrations of the aqueous phase, suspended matter and sediments.

REFERENCES:

Colombini, M.P. and Fuoco, R., Evaluation of polychlorobiphenyl content in sea water samples from Terra Nova Bay-Ross Sea (Antarctica). Atti Convegno "Environmental impact in Antarctica". ROMA, 9-9 Giugno 1990.

Fuoco, R., Norton, K. and Griffiths, P.R., Application of SFE/SFC and FT-IR microspectrometry for organic pollutants analysis in soil samples. Atti della Conferenza europea in Chimica Analitica "Euroanalysis VII" Vienna, 26-31 Agosto 1990.

Colombini, M.P., Fuoco, R., Abete, C., Confronto di tecniche cromatografiche diverse per la determinazione di PCB in campioni ambientali. Atti del IX Congresso Nazionale di Chimica Analitica. Ferrara, 28 Ottobre - 1 Novembre 1990.

Title: "Characterization of aerosol at Terra Nova Bay. Condensation nuclei at Terra Nova Bay. Snow chemistry at Terra Nova Bay"

Parameters: ATMOSPHERIC COMPOSITION
ATMOSPHERIC COMPOSITION > AEROSOLS

Discipline: EARTH SCIENCE > ATMOSPHERE

Keywords: TERRA NOVA BAY
ATMOSPHERIC PHYSICS
CONDENSATION NUCLEI
SNOW CHEMISTRY
CONDENSATION NUCLEI

Sensors: IS > INERTIAL SPECTROMETER
PCNT1 > ALCOHOL BASED PARTICLE COUNTER, TSI 3020

Sources: BTN > GROUND STATION, TERRA NOVA BAY STATION

Location: ANTARCTICA

Coverage: Minimum Latitude: 74S
Maximum Latitude: 74S
Minimum Longitude: 164E
Maximum Longitude: 164E

Data Center: BORFISBA > INST. FOR HIGH/LOW ATM. PHYS. CHEM. PHENOM., BO Originating Center: BORFISBA

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Storage Medium: MAGNETIC DISK

Dates: Start
1988-01-01

Stop
1990-01-31

Revision
1992-05-31

Science Rev

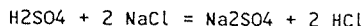
Future Rev

PNRA > Programma Nazionale di Ricerche in Antartide

PNRA-52

"Characterization of aerosol at Terra Nova Bay. Condensation nuclei at Terra Nova Bay. Snow chemistry at Terra Nova Bay"

SUMMARY: Antarctic aerosol was sampled at Terra Nova Bay using an inertial spectrometer at high flow rate. This instrument can sample aerosol and deposit particles on a membrane filter with size separation. The density of single particles and average density vs aerodynamic diameter has been evaluated. Chemical composition of aerosol particles was determined by analyzing samples taken on Millipore filters by scanning electron microscope and X-ray energy spectrometer. It results from this investigation that, for particles with radius > 0.5 microm., frequency of sea-salts increases when aerodynamic diameter decreases. An opposite behaviour is displayed by crustal elements. A chlorine loss in sea-salt particles has been observed. The suggested mechanism for this loss is:



Condensation nuclei (CN) concentrations were measured at Terra Nova Bay with an alcohol-based particle counter. In January 1989 the mean value for CN was 490. Aerosol particles were sampled by a high flow-rate inertial spectrometer and their number concentration, size distribution and chemical composition were determined. The two filters analyzed showed particle number concentration in the 0.1-1 microm radius range to be 50 and 180 cm⁻³ and Junge distribution exponent 3.7 and 3.9. The concentrations of eight major ions (Cl⁻, NO₃⁻, SO₄⁼, Na⁺, K⁺, Ca⁺⁺, Mg⁺⁺, H⁺) were determined from fresh snow samples. These showed that precipitation origin of some ions is discussed.

REFERENCES:

- Andreae, M.O., Andersen, N.R., Balzer, W., Bingemer, H.G., Brinckman, F.E., Bruner, F., Ehhalt, D.H., Hallberg, R.O., Jorgensen, B.B., Liss, P.S., Lovelock J.E. and Schmidt, U., Biogenic contribution to atmospheric chemistry, group report. Atmospheric Chemistry, E.D. Goldberg, Ed., New York, Springer-Verlag, pp. 251-272., 1982.
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"Characterization of aerosol at Terra Nova Bay. Condensation nuclei at Terra Nova Bay. Snow chemistry at Terra Nova Bay"

Sadavisan, S., Trace elements in size separated aerosols over sea, Atmos. Environ., 12, 1677-1683, 1978.

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Title: "Aquatic environments fungi: a) marine fungi (and from intertidal waters). b) fungi of silt from internal ponds in the P.N.R.A."

Parameters: BIOLOGICAL ENTITIES > MICROORGANISMS
BIOLOGICAL ENTITIES > SURFACE VEGETATION

Discipline: EARTH SCIENCE > LAND

Keywords: SKUA LAKE 2
ENEIDE POOL LAKE 1
CAREZZA LAKE 3
GONDWANA LAKE 17
VEGETATION ISLAND LAKE 6
INEXPRESSIBLE ISLAND LAKE 9
INEXPRESSIBLE ISLAND LAKE 10a
INEXPRESSIBLE ISLAND LAKE 10b
GERLACHE MOUNTAIN
TARN FLAT LAKE 20
TARN FLAT LAKE 21
EDMONSON POINT LAKE 14
EDMONSON POINT LAKE 15
EDMONSON POINT LAKE 16
TEALL NUNATAK
BAKER ROCKS LAKE
CRATER CIRQUE LAKES
ICARO CAMP
SYSTEMATIC MYCOLOGY
BOTANY
BIOGEOGRAPHY
ECOLOGY
BIOCLIMATOLOGY
FRESH WATER
SEA WATER
FLORA
BIOLOGY
BIOTOPES
FUNGI
INTERSTITIAL WATERS
METEOROLOGICAL RANGE
SILT PONDS
THELEBOLUS MICROSPORUS
HOMOTHALLISM
BIOMETRICS
VARIABILITY

Sensors: TH > THERMOMETER
PHM > PHMETER
CTD > CONDUCTIVITY, TEMPERATURE, DEPTH

Sources: BTN > GROUND STATION, TERRA NOVA BAY STATION
GEUIBHOB > INST. FOR BOTANIC SCIENCES, GE

Location: ANTARCTICA

Coverage: Minimum Latitude: 72S
Maximum Latitude: 75S
Minimum Longitude: 162E
Maximum Longitude: 169E

Data Center: GEUIBHOB > INST. FOR BOTANIC SCIENCES, GE

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35 mm SLIDES
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Dates: Start
1987-11-01

Stop
1991-12-31

Revision
1992-05-31

Science Rev

Future Rev
1993-05-31

PNRA > Programma Nazionale di Ricerche in Antartide

PNRA-53

"Aquatic environments fungi: a) marine fungi (and from intertidal waters). b) fungi of silt from internal ponds in the P.N.R.A."

SUMMARY: Fungi found in intertidal waters, 1987-88 campaign > species so far not signaled in Antarctica: *Pecilomyces farinosus*, *Ulocladium consortiale* > Taxa already signaled in soil (Tubaki and others): *Cladosporium* sp., *Acremonium* sp., *Geomyces pannorum* var., *pannorum Acremonium murorum* var., *felina*. > Species not signaled in doubtful value: *Penicillium brevicompactum*, *Chaetomium cochlioides*.
Fungi found in ponds silt, 1987-88 campaign > *Aureobasidium pullulans* var. *pullulans*, *Thelebolus microsporus*, *Ulocladium consortiale*, yeasts and other species (see above) already signaled or in doubtful value (Antarctic pollution). These data are included in my published works (see 18). Regarding the unpublished ones and partially also the published ones, see 10.

REFERENCES:

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- Montemartini Corte, A., Funghi di ambienti acquatici. 1st Biological Meeting of the PNRA, Rome, June 1989. Biology of an Antarctic *Thelebolus*, Intern. Mycol. Congress 4. Abstract, 141, 1990.
- Montemartini Corte, A., Modificazioni fisionomiche di *Hyphomycetes* (*Penicillium* spp. e *Cladosporium* sp.) in Antartide. *Giorn. Bot. Ital.*, 125 (3), 163-164, 1991.

Title: "Mechanisms of adaptation to low temperatures of Antarctic teleosts"

Parameters: BIOLOGICAL ENTITIES > OCEAN WILDLIFE
BIOLOGICAL ENTITIES > MINOR SPECIES

Discipline: EARTH SCIENCE > OCEAN

Keywords: ROSS SEA
TERRA NOVA BAY
NOTOTHENIOIDS
ADAPTATION
PROTEINS
ENZYME
PHYSIOLOGY
BIOCHEMISTRY

Sensors: SPH1 > SPECTROPHOTOMETER, BECKMAN TRACE III
LS1 > LUMINESCENCE SPECTROMETER, PERKIN ELMER LS-5
GC2 > GAS CHROMATOGRAPH, PERKIN ELMER SIGMA 38

Sources: LEUDBIOL > DEPT. OF BIOLOGY, LE

Location: ANTARCTICA

Coverage:

Data Center: LEUDBIOL > DEPT. OF BIOLOGY, LE

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HARDCOPY PLOTS

Dates: Start
1988-01-15

Stop

Revision
1992-05-31

Science Rev

Future Rev

PNRA > Programma Nazionale di Ricerche in Antartide

PNRA-54

SUMMARY: This data set, obtained in the Laboratory of General Physiology, Department of Biology, University of Lecce, covers a four years period October 1988 to December 1991. Enzymatic activities values of the intestinal mucosa have been investigated both in the Antarctic fish *Pagothenia bernacchii* and in the temperate fish *Anguilla anguilla*. The activities of three enzymes located on the intestinal brush border membrane (leucine aminopeptidase, alkaline phosphatase and maltase) were measured, by a Beckman spectrophotometer Trace III, between 4 and 37 C-degree and they always resulted much higher in *Pagothenia bernacchii* than in *Anguilla anguilla*. The activation energy (Ea) values of leucine aminopeptidase, alkaline phosphatase and maltase were 7.3 Kcal/(mole x K-degree) then in the eel (14.4, 6.8 and 16.8 Kcal/(mole x K-degree) respectively). The apparent affinity constant (Km) values of leucine aminopeptidase and alkaline phosphatase (at 1.5 C-degree) were 0.33 and 0.22 mM in *P. bernacchii* and 0.8 and 0.64 mM in the eel. Both Ea and Km values were obtained by regression analysis programs running on personal computer Olivetti M-28. A different phospholipid composition of the scraped intestines *Anguilla anguilla*. These particular phosphatidylethanolamine and sphingomyelin were 39.9 % and 3.5 % of total phospholipid in *Pagothenia bernacchii* and 24.7 % and 11.8 % respectively in *Anguilla anguilla*. Also a different fatty acid composition of the intestinal brush border membrane was found in the antarctic fish *C. hamatus* and the eel, being in the first a higher amount of monounsaturated fatty acids (16: 1 and 18: 1). These results stress that (1) the increase of enzymatic rates, (2) the decrease of activation energies (3) the decrease of affinity constants and (4) the modification of membrane cellular lipid bilayer are important adaptive aspects of the physiology of these Antarctic fishes. That permits adequate metabolic rate and membrane fluidity in the subzero thermal antarctic environment. These data are stored on 5 FLOPPY DISKS running on IBM-compatible personal computer. Copies are available for the cost of reproduction. There are not restrictions on the distribution of these data.

REFERENCES:

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Title: "Aerosol particle optical depths and atmospheric turbidity
parameters from sun-photometric measurements (0.32 - 1.1 micro-m)"

Parameters: ATMOSPHERIC COMPOSITION > AEROSOLS
RADIANCE AND IMAGERY > ULTRAVIOLET
RADIANCE AND IMAGERY > INFRARED
RADIANCE AND IMAGERY > VISIBLE

Discipline: EARTH SCIENCE > ATMOSPHERE

Keywords: TERRA NOVA BAY
ICARO CAMP
OPTICAL THICKNESS
METEOROLOGY
ATMOSPHERIC PHYSICS
ATMOSPHERIC TURBIDITY
CLIMATOLOGY
AEROSOLS
OPTICAL DEPTH
PHOTOMETRY
MULTISPECTRAL ANALYSIS

Sensors: MWP1 > MULTIWAVELENGTH SUN PHOTOMETER, 0.3-1.1 MICRO-M

Sources: ICARO > ICARO GROUND STATION, TERRA NOVA BAY STATION

Location: ANTARCTICA

Coverage: Minimum Latitude: 75S
Maximum Latitude: 75S
Minimum Longitude: 164W
Maximum Longitude: 164W

Data Center: BORFISBA > INST. FOR HIGH/LOW ATM. PHYS. CHEM. PHENOM., BO Originating Center: BORFISBA

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Storage Medium: MAGNETIC DISK

Dates: Start
1987-12-30

Stop
1991-03-02

Revision
1992-05-31

Science Rev

Future Rev

PNRA > Programma Nazionale di Ricerche in Antartide

PNRA-55

SUMMARY: The data set contains the value of aerosol particle optical thicknesses, obtained at eight window wavelengths, in the spectral range 0.4 - 1.1 micro-m, from the solar direct irradiance measurements taken with the sun-photometer, model UVISIR. From this spectral series of aerosol optical thickness, through a best-fit procedure, the Angstrom's parameters of atmospheric turbidity were determined. Moreover, reliable evaluations of precipitable water can be obtained from these sun-photometric measurements using empirical calibration curves. In addition, a procedure giving realistic evaluations of the ozone vertical content from the near ultraviolet measurements has been proposed (cfr. references).

REFERENCES:

- Tomasi, C., Vitale, V. and Tagliazucca, M., Atmospheric turbidity measurements at Terra Nova Bay during January and February 1988, Sif Conference Proceedings, 20, 1989, 67-77.
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- Tomasi, C., Vitale, V. and Zibordi, G., Antarctic sky diffuse radiance in sun-photometric measurements. Sif Conference Proceedings, 27, 1990, 105-119.
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- Tomasi, C., Vitale, V., Gasperoni, L., and Marani, S., Ozone absorption and rayleigh scattering features in sun-photometric measurements taken at ultraviolet wavelengths, Sif Conference Proceedings, in press.
- Tomasi, C., Zibordi, G. and Vitale, V., Multiwavelength sun-photometric measurements of the atmospheric turbidity parameters at Terra Nova Bay during January 90, Sif Conference Proceedings, in press.

Title: "Flora and fauna of the Antarctic waters. Preservation and sorting"

Parameters: OCEAN COMPOSITION > ZOOPLANKTON
BIOLOGICAL ENTITIES > MINOR SPECIES

Discipline: EARTH SCIENCE > OCEAN

Keywords: PLANKTON
BIOLOGY
ZOOPLANKTON
ZOOBENTHOS
PHYTOTAXONOMY
ICHTHYOLOGY
BIOLOGICAL OCEANOGRAPHY
ROSS SEA
SOUTH PACIFIC OCEAN
NEKTON
BENTHOS

Sensors: STSC1 > STEREOSCOPE, ZEISS STEMI DV4
STSC2 > STEREOSCOPE, ZEISS STEMI SR
MSC1 > MICROSCOPE, ZEISS STANDARD JUNIOR
MSC2 > MICROSCOPE, ZEISS STANDARD KK0422/2
PG1 > PHOTOGRAPHIC APPARATUS, ZEISS M35
MPG1 > MICROPHOTOGRAPH APPARATUS, ZEISS C35

Sources: RVPQ > RESEARCH VESSEL, POLAR QUEEN
RVCB > RESEARCH VESSEL, CARIBOO

Location: ANTARCTICA
PACIFIC OCEAN
SOUTHERN OCEAN

Coverage: Minimum Latitude: 50S
Maximum Latitude: 75S
Minimum Longitude: 161E
Maximum Longitude: 177W

Data Center: MSC1 > MARINE SORTING CENTER ITALIA

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Storage Medium: MAGNETIC DISK

Dates: Start 1987-11-01

Stop

Revision 1992-05-31

Science Rev

Future Rev

PNRA > Programma Nazionale di Ricerche in Antartide

PNRA-56

SUMMARY: The Marine Sorting Center Italia is made up of various sections in which specialized personnel deal with the biological material collected as plankton, benthos, nekton and process the relative data. The stages of work are planned as follows: registration and indexation of the biological material collected during the oceanographic expedition in the Antarctic regions. The samples arriving at MSCI are inspected in regard to their state of conservation and completeness of data. They are catalogued and distributed to the various sections. Here the original is subdivided into a "reference sample" and a "sorting sample". Data are stored on MAGNETIC DISK and copies are available at cost price. Data distribution should be approved by the National Coordinator of Oceanography of Antarctic Program.

REFERENCES:

Della Croce, N. and Zunini Sertorio, T., Lo "Smithsonian Oceanografic Sorting Center", Istituto di Scienze Ambientali Marine, Univ. Genova, rapp. tecn. 30, 20 p., 1989.

Della Croce, N. and Zunini Sertorio, T., "Antarctic 1987-88" National Program Oceanographic Campaign 1988 Sorting Center, Nat. Sc. Com. Ant., Ocean., Camp., 1987-88, data rep., I, 401-404, 1990.

Zunini Sertorio, T., Salemi Picone, P., Bernat, P., Cattini, E., and Ossola, C., Copepodes collected in sixteen stations during the Italian antarctic expedition 1987-1988, Nat. Sc. Com. Ant., Ocean Camp., 1987-88, Data Rep., II, 67-125, 1990.

Title: "Ecological and evolutionary genetics of marine invertebrates from
Antarctic and sub-Antarctic regions"

Parameters: BIOLOGICAL ENTITIES
BIOLOGICAL ENTITIES > MICROORGANISMS
BIOLOGICAL ENTITIES > MINOR SPECIES

Discipline: EARTH SCIENCE > OCEAN

Keywords: ROSS SEA
TERRA NOVA BAY
ADELIE COVE
EDMONSON POINT
INEXPRESSIBLE ISLAND
WEDDELL SEA
MAGELLANIC STRAIT
KERGUELEN ISLAND
CROZET ISLAND
ECOLOGY
BIOGEOGRAPHY
GENETIC
EVOLUTION
ENZYMATIC ACTIVITIES
KARIOTYPE
GENETIC ADAPTATION MECHANISMS
ENZYMATIC POLYMORPHISMS
MARINE ENVIRONMENT
CRUSTACEANS
ANPHIPODI
EUPHAUSIIDS
SPECIATION MECHANISMS

Sensors: EPSS > ELECTROPHORESIS, SARTOPHOR SYSTEM
UVVISS > UV/VIS SPECTROMETER
UCF > ULTRACENTRIFUGE

Sources: PDUDBIOL > DEPT. OF BIOLOGY, PD

Location: ANTARCTICA
PACIFIC OCEAN
SOUTHERN OCEAN
INDIAN OCEAN

Coverage:

Data Center: PDUDBIOL > DEPT. OF BIOLOGY, PD

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Storage Medium: MAGNETIC DISK

Dates: Start
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Revision
1992-05-31

Science Rev

Future Rev
1993-05-31

PNRA > Programma Nazionale di Ricerche in Antartide

PNRA-57

SUMMARY: This data set contains the results of studies on the pattern of genetic differentiations and speciation mechanisms in Antarctic and sub-Antarctic regions. The analyses have been conducted on samples of amphipods, isopods, copepods, and euphausiids the genetic structure of populations has been investigated by utilising electrophoretic techniques on several gene-enzyme systems.

REFERENCES:

- Battaglia, B., Bisol, P.M., Fava, G., Rodino', E. and Varotto, V., Misure di variabilita' genetica in invertebrati marini di un'area sub-Antartica. Scienza e Cultura, Informazione dell'Universita' di Padova, E.U.P., 7, 67-70, 1984.
- Battaglia, B., Bisol, P.M., Fava, G., Rodino', E. and Varotto, V., Genetic variability and geographic differentiation in some benthic invertebrates from Kerguelen region. In "Marine Biology of Polar Regions and Effects of Stress on Marine Organisms" J.S. Gray and M.E. Christiansen Eds., John Wiley and Sons Ltd., 299-311, 1985.
- Battaglia, B. and Bisol, P.M., Environmental factors, genetic differentiation, and adaptive strategies in marine animals. In "Toward on Theory Biological Physical Interactions in the World Ocean", B.J. Rothschild Ed., Kluwer Academic Publisher, 393-410, 1988.
- Patarnello, T., Bisol, P.M., Fuser, V., Varotto, V. and Battaglia, B. Variabilita' genetica in anfipodi antartici della specie *Paramoera walkeri* Stebbing. Oebalia, in stampa.
- Patarnello, T., Bisol, P.M., Fuser, V., Varotto, V. and Battaglia, A A study of enzyme polymorphism in the Antarctic amphipod *Paramoera walkeri* Stebbing. Polar Biology: 10, 495-498, 1990.
- Battaglia, B., Bisol, P.M., Patarnello, T., and Varotto, V., Ricerche di biologia evoluzionistica in aree antartiche e sub-antartiche. Atti del primo Convegno di Biologia Antartica. Scienza e Cultura, numero speciale, 157-172.

Title: "Identification and analysis of Petrology and Geochemistry of
Beacon Sands tones (Beacon Supergroup), Victoria Land Antarctica"

Parameters: GEOLOGICAL PARAMETERS > STRATIGRAPHY
GEOLOGICAL PARAMETERS > PALEONTOLOGY
GEOLOGICAL PARAMETERS > PETROLOGY
GEOLOGICAL PARAMETERS > GEOCHEMICAL ANALYSIS

Discipline: EARTH SCIENCE > INTERIOR AND CRUST

Keywords: ROSS SEA
PETROLOGY
MINING SCIENCE
GEOLOGY
SEDIMENTARY ROCKS
SANDSTONES
BEACON VALLEY
GEOCHEMISTRY
STRATIGRAPHY
LATE PALEOZOIC
CENTRAL VICTORIA LAND

Sensors: MSC > MICROSCOPE
XRDFC > X RAY DIFFRACTOMETER
XRFLS1 > X RAY FLUORESCENCE SPECTROMETER, PHILIPS PW14-80
EMPB > ELECTRON MICROPROBE

Sources: MOUIMP > INST. FOR MINERALOGY PETROLOGY, MO

Location: ANTARCTICA

Coverage:

Data Center: MOUIMP > INST. FOR MINERALOGY PETROLOGY, MO

Originating Center: MOUIMP

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Storage Medium: MAGNETIC DISK

Dates: Start 1990-11-29

Stop

Revision 1992-05-31

Science Rev

Future Rev

PNRA > Programma Nazionale di Ricerche in Antartide

PNRA-58

"Identification and analysis of Petrology and Geochemistry of
Beacon Sands tones (Beacon Supergroup), Victoria Land Antarctica"

SUMMARY: This study includes compositional research, such as mineralogic, petrologic, geochemical and stratigraphic surveys, on samples obtained from series of sediments, belonging to the Beacon Sandstones. The collected data will be compared to that of similar lithotypes, collected during the 1982-83 expedition of GANOVEX III.
The sampled materials come from the central-northern part of the medium Priestley Glacier, from the Eisenhower Range and from the central-northern Deep Reeves Range. During the 1990-91 Italian expedition, it has not been possible to reach the Rennick Glacier region, were the outcropping sediments could serve as the connection between the deposits studied in the North, by the GANOVEX III researchers and the ones studied by the Italians.

REFERENCES: Tessensohn, F and Roland, N.W., German Antarctic North Victoria Land; expedition 1982-83, Ganovex III, Geol. Jahr. R. B., 1-324, 1987.

Title: "Structural geology and dynamics of sedimentation in the Ross Sea"

Parameters: OCEAN DYNAMICS > TEMPERATURE
OCEAN DYNAMICS > PRESSURE
OCEAN DYNAMICS > SEDIMENTATION
OCEAN COMPOSITION > PH
OCEAN COMPOSITION > OXYGEN
OCEAN COMPOSITION > CONDUCTIVITY

Discipline: EARTH SCIENCE > OCEAN

Keywords: TERRA NOVA BAY
REFLECTION SHOOTING PROFILING
DEPTH MORPHOLOGY
TEMPERATURE
PRESSURE
PH
ROSS SEA
MARINE GEOLOGY
SEDIMENTOLOGY
PHYSICAL OCEANOGRAPHY
STRUCTURAL GEOLOGY
GEOMORPHOLOGY

Sensors: CTD > CONDUCTIVITY, TEMPERATURE, DEPTH
WANI > WATER SAMPLER ANALYZER, ACQUA ME-ROSETTE
MSCNT > COULTER COUNTER, MULTISIZER
CHNAN > CARBON HYDROGEN NITROGEN ANALYZER

Sources: RVPQ > RESEARCH VESSEL, POLAR QUEEN
RVCB > RESEARCH VESSEL, CARIBOO

Location: ANTARCTICA

Coverage: Minimum Latitude: 75S
Maximum Latitude: 70S
Minimum Longitude: 164E
Maximum Longitude: 178E

Data Center: GEUDST2 > DEPT. OF EARTH SCIENCES GEOLOGY SECT., GE

Originating Center: GEUDST2

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Storage Medium: MAGNETIC DISK

Dates: Start
1987-06-01

Stop

Revision
1992-05-31

Science Rev

Future Rev

PNRA > Programma Nazionale di Ricerche in Antartide

PNRA-59

SUMMARY: Some structural lineaments of the Ross Sea continental margin have been identified. A survey of morphological emergencies has been carried out and some predominant sedimentation processes have been outlined, in order to achieve a model system:

- a) of the structure and of the geodynamic evolution of the area;
- b) of the platform and slope modelling;
- c) of the genesis of the main sedimentary corpuses.

The stratigraphic and structural interpretation of the documents of reflection shooting is being carried out. The documents have been obtained during the 1990-91 cruise, making their calibration and using the results of the analysis conducted on the direct samplings of explored sedimentary sequences. In particular, seismostratigraphic and structural reconstruction, regarding the zones of Cape Adare and Joides Basin, will be carried out. The Cape Adare zone in particular, though still almost unknown, is of great importance, due to the presence of large structures, that link the continental margin to the trasformings of the southern pacific ridge.

Regarding the current processes of the sediments dispersion, the different phenomenologies responsible for the sediments dispersion, are being pointed out and the state of the prevalent processes are being specified in detail; the close relations with the dynamics of water, are being defined, pointing out the physical characteristics of the waters themselves, which are linked to costal dynamics, influenced by secondary circulations. In order to do that, we are having a close collaboration with the Institute of Oceanography and Meteorology from Naples.

And lastely, the suspended substanses are being characterized, from a quantitative and qualitative point of view, through surveys on the organic fraction in collaboration with the Department of Chemistery from the Univ. of Rome and on the inorganic fraction in collaboration with the Department of Earth Science from Pavia.

REFERENCES:

- Anderson, J.B. et al., Sedimentation of the Ross Sea continental shelf, Antarctica. *Marine Geology*, 57, 295-333, 1984.
- Borman, P. et al., Structure and development of the passive continental margin across tra Princess Astrid Coast, East Antarctica. *Journal of Geodinamics*, 6, 347-373, 1989.
- Cooper, A.K. and Davey, F.J. Ed., The Antarctic continental margin: geology and geophysics of the western Ross Sea. Circum- Pacific Council for Energy and Natural Resources, Earth Science Series, Vol. 58. Houston, Texas, USA, 1987.
- Fanucci, F. et al., A morphological and geological outline of the Western Ros Sea, Antarctica. *Boll. Oceanol.*, VII (1-2), 71-76, 1989.
- Singer, J.H. and Anderson, J.B., Use of total grain-size distributions to define bed erosion and transport for poorly sorted sediment undergoing simulated bioturbation. *Marine Geology*, 57, 335-339, 1984.
- Vanney, J.R., Falconer, R.K.H. and Johnson, G.L., Geomorphology of the Ross Sea and adjacent oceanic provinces. *Marine Geology*, 41, 73-102, 1981.

Title: "Study on the presence and distribution of natural and artificial radioactivity in environmental terrestrial and marine matrixes"

Parameters: HYDROLOGIC PARAMETERS > CONTAMINATION
HYDROLOGIC PARAMETERS > SURFACE WATER
HYDROLOGIC PARAMETERS > GROUND WATER
HYDROLOGIC PARAMETERS > SEDIMENTATION
OCEAN COMPOSITION > SEDIMENTS
OCEAN COMPOSITION > POLLUTANTS

Discipline: EARTH SCIENCE > LAND
EARTH SCIENCE > OCEAN

Keywords: ROSS SEA
TERRA NOVA BAY
TERRA NOVA BAY INLAND
CAESIUM 137
POTASSIUM 40
BISMUTH 214
URANIUM 238
TELLURIUM 208
THORIUM 232
COBALT
NITROGEN
POTASSIUM
STABLE ELEMENTS
ELEMENT CONCENTRATION
NATURAL RADIONUCLIDES
ARTIFICIAL RADIONUCLIDES
WATER
BENTHONIC ORGANISMS
SEDIMENT
LAKE VEGETABLES
RADIOECOLOGY
RADIOCHEMISTRY
RADIOACTIVITY

Sensors: LCDTC1 > LEAD CHESTED DETECTOR, GELI PGT

Sources: RV > RESEARCH VESSEL
PRUDBFG > DEPT. OF BIOLOGY PHYSIOLOGY, PR

Location: ANTARCTICA

Coverage: Minimum Latitude: 75S
Maximum Latitude: 73S
Minimum Longitude: 162E
Maximum Longitude: 173E

Data Center: PRUDBFG > DEPT. OF BIOLOGY PHYSIOLOGY, PR

Originating Center: PRUDBFG

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Storage Medium:

Dates: Start
1987-10-01

Stop

Revision
1992-05-31

Science Rev

Future Rev

PNRA > Programma Nazionale di Ricerche in Antartide

PNRA-60

SUMMARY: Environmental samples of marine and terrestrial ecosystems (water, sediment, animal and vegetable organisms, soil, snow, ice) have been analyzed. These samples have been collected during the 1987-88, 1988-89, 1989-90 and 1990-91 scientific campaigns carried out in the Ross Sea and in the Terra Nova Bay hinterland.

Regarding the sea water samples, some phases of the treatments of radiochemical separation CS-AMP and of extraction through NCFC and MnO₂ columns, have been carried out by the personnel present in the Italian Base in Antarctica and on the oceanographic ship Cariboo. Other radiochemical separations and treatments relevant to all the other environmental matrixes (biometric analysis, dissection of anatomical components, drying process, homogenization, valuation of apparent density and dry/humid relation) have been carried out in the laboratory of Radioecology from the Univ. of Parma.

All the sources, put in plexiglass containers of precise geometry, have been subjected to an analysis of spectrometry gamma, through 2 GeLi (PGT Silena) and GeHp (Silena) detectors, interfaced with PC IBM AT, which is equipped with the "EG and G Maestro-Omnigam" program, suitable for data acquisition and elaboration.

The time for measurement varies between 80.100 and 234.000 seconds, in relation to the limits of the revelation of radioactivity in the sample. Data, in particular radioactive isotopes of Caesium, Bi-214 (U-238), Tl-208 (Th-232) and K-40, have been subsequently compared to the ones obtained by other Italian and Foreign O.U. in the same area and in nearby areas. The obtained data have been also compared to the ones concerning similar matrixes, collected in the northern hemisphere, before and after the accident at the Chernobyl nuclear power station.

Part of the study also regards the valuation of the concentration of stable elements, mainly U, Th, K, Ca, Mg, N, P, organic and inorganic C, present in the considered environmental matrixes.

1. Spectrometry gamma line n. 1:
Lead chested GeLi PGT Silena detector, Amplifier Ortec 572, MCB Ortec 918A and Multiplexer Ortec 476-4.
2. Spectrometry gamma line n. 2:
Lead chested GeHp Silena detector, Amplifier Ortec 571, MCB Ortec 918A and Multiplexer Ortec 476-4.
3. Personal Computer IBM AT connected to a printer Mannesmann Tally, interfaced with lines of spectrometry gamma n. 1 and n. 2, provided with the proper "EG and G Omnigam-Maestro" program for the data acquisition and elaboration.
4. Spectrometry gamma line n. 3:
Lead chested NaI 3"X 3" Quarz E Silice detector, Amplifier Silena 7610, MCA Silena 7934 (4000 channels, 4 entries) with parallel printer and magnetic cassette, connected to plotter X-Y Hewlett Packard.
5. Double line of spectrometry alpha Dual Port Ortec 576 connected to the data acquisition system MCA Silena 7934 (see point 4).
6. Spectrometry alpha:
Ionization chamber with grid, CISE model, High voltage for the cathode and grid, Amplifier Ortec 452, MCA Silena 7934 (see point 4).
7. Two ZnS scintillators for Gross-Alpha analysis, Amplifier SELO AA2, Scaler and Timer SELO STS.
8. Plastic scintillator ASPN for Gross-Beta analysis, Amplifier, Timer and Scaler ASPN 2016.
9. Two samplers/concentrators for Radeco water with Fluxmeter and columns of NCFC for Cs-137 and MnO₂ for Pu-239 (ENEA invent). One samplers/concentrators for Radeco air-water with Fluxmeter and columns of NCFC and MnO₂.
10. Equipment for the precipitation of Cs-Cs137-Cs134 spike-AMP, complete with 50 liters tanks, shovels, stirring starter Havy Stirrer and pump Lutz for the siphoning of the clarified supernatant.

REFERENCES:

- De Negri, P. and Mori, A., (1988), Ricerca bibliografica sulla radioattività artificiale e naturale nell'ambiente marino e terrestre dell'Antartide. Rapporto Iatri - O Università di Parma.
- Triulzi, C., Mangia, A., Casoli, A., Albertazzi, S., Mori, A., Nonnis Marzano, F. and Vaghi, M., (1989), Radioattività naturale ed artificiale in matrici ambientali terrestri e marine (spedizione 1987-88) - Rapporto Iatri - 1 Univ. Parma.
- Triulzi, C., Mangia, A., Casoli, A., Albertazzi, S. and Nonnis Marzano, F., (1989), Artificial and natural radionuclides alkaline and earth alkaline elements in some environmental abiotic samples of Antarctica - Annali di Chimica, 79, 723-733.
- Triulzi, C., Mangia, A., Mori, A., and Nonnis Marzano, F., (1990), Radioactivity in some environmental marine and terrestrial matrixes collected around the Italian Base in Antarctica. Atti Convegno CNR "Environmental impact in Antarctica" Roma 8-9 Giugno, 133-141.
- Triulzi, C., Nonnis Marzano, F. and Mori, A., (1990), Aspetti radioecologici della Baia di Terra Nova in Antartide - in stampa su atti IX. Congresso A.I.O.L., S. Margherita L, 20-23/11/1990.
- Triulzi, C., Nonnis Marzano, F., Mori, A., Casoli, A. and Vaghi, M., (1991), Presence of radionuclides in biotic and abiotic matrixes collected in the

"Study on the presence and distribution of natural and
artificial radioactivity in environmental terrestrial and marine matrixes"

environment around the Italian Base in Antarctica. Annali di Chimica 81, 1991,
by Societa' Chimica Italiana.

Title: "Wind and thermal structure of the planetary layer obtained with a
sodar system in Terra Nova Bay"

Parameters: ATMOSPHERIC DYNAMICS > WINDS

Discipline: EARTH SCIENCE > ATMOSPHERE

Keywords: TERRA NOVA BAY
NANSEN ICE SHEET
WIND PROFILE
ATMOSPHERIC PHYSICS
THERMAL STRUCTURE
SODAR
BOUNDARY LAYER
KATABATIC WINDS

Sensors: SODAR > SOUND DETECTION AND RANGING

Sources: NIS > NANSEN ICE SHEET

Location: ANTARCTICA

Coverage: Minimum Latitude: 74S
Maximum Latitude: 74S
Minimum Longitude: 163E
Maximum Longitude: 164E

Data Center: RMRIFA2 > INST. FOR ATMOSPHERIC PHYSICS, FRA/RM

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Storage_Medium: MAGNETIC TAPES
MAGNETIC DISK

Dates: Start
1987-01-07

Stop
1989-02-04

Revision
1992-05-31

Science Rev

Future Rev

PNRA > Programma Nazionale di Ricerche in Antartide

PNRA-61

SUMMARY: This data set contains sodar data obtained during three Antarctic Summer campaigns. The data include wind profiles and echo intensity profiles obtained each six seconds with a height resolution of approximately 30 meters, up to 1000 meters, if scatterers are present at all heights. The data error is a function of the signal to noise ratio of the echo.

REFERENCES:

- Mastrantonio, G. and Fiocco, G., Accuracy of wind velocity determinations with Doppler Sodar, J. Appl. Met., 21, 820-830, 1982.
- Mastrantonio, G., Fiocco, G. and Marzorati, A., Simultaneous operation of a sodar system in monostatic and bistatic modes: preliminary results, Atmos. Res., 20, 213-223, 1986.
- Greenhut, G.K. and Mastrantonio, G., Turbulence Kinetic Energy Budget Profiles Derived from Doppler Sodar Measurements, J. Appl. Meteor., 28, 99-106, 1989.
- Mastrantonio, G., Ocone, R., Fiocco, G. and Pellegrini, A., Sodar observations of the Antarctic Boundary Layer in a deglaciated area: preliminary results, Il Nuovo Cimento C, 13, 589-597, 1990.
- Fiocco, G., Mastrantonio, G., Ocone, R. and Argentini, S., Acoustic Sounder Experimentation in Victoria Land, Antarctica, Proceedings Fifth International Symposium on Acoustic Remote Sensing of the Atmosphere and Oceans, New Delhi, India (6-9 February, 1990).

Title: "Petrology and geochronology of Plutonic and metamorphic rocks of
Robertson bay area"

Parameters: GEOLOGICAL PARAMETERS > PETROLOGY
GEOLOGICAL PARAMETERS > GEOCHEMICAL ANALYSIS
GEOLOGICAL PARAMETERS > AGE DETERMINATIONS

Discipline: EARTH SCIENCE > INTERIOR AND CRUST

Keywords: NORTH VICTORIA LAND
TUCKER GLACIER
ROCKS ANALYSIS
ISOTOPICAL ANALYSIS
MODAL ANALYSIS
MICROPROBE ANALYSIS
CRYSTALLINE ROCKS
PETROLOGY
GEOCHRONOLOGY
GEOCHEMISTRY

Sensors:

Sources:

Location: ANTARCTICA

Coverage: Minimum Latitude: 72S
Maximum Latitude: 74S
Minimum Longitude: 166E
Maximum Longitude: 170E

Data Center: PDUDMP > DEPT. OF MINERALOGY PETROLOGY, PD

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Storage Medium: MAGNETIC DISK

Dates: Start
1989-12-01

Stop

Revision
1992-05-31

Science Rev

Future Rev

PNRA > Programma Nazionale di Ricerche in Antartide

PNRA-62

SUMMARY: The study is about the Tucker Pluton, as a member of an intrusive suite that, in Devonian time, has intruded RBT and BT tectonic units in NVL. The fundamental goal is to understand the geodynamic process which has produced such geochemical and geochronological studies. New available data are:

- Rb-Sr WR isochron (11 samples):
intrusion age = 394 ± 16 My
($^{87}\text{Sr}/^{86}\text{Sr}$)_i = 0.7074 ± 5
- Rb-Sr Bi-Wr isochrons (4 biotites):
cooling ages = $386 - 352$ My
- Chemical composition of 11 samples;
- modal composition of 24 samples
chemical compositions of the main mineralogical phases:

The results are:

- the Tucker Pluton is made of tonalites, granodiorites with minor granites and quartz-monzodiorites;
- the Tucker Pluton belongs to medium potassic I-type calcalkaline series;
- the litological variability is mostly due to fractional crystallization processes;
- magmatic source has mantellic as well as crustal features.

REFERENCES:

Armienti, P., Biagini, R., Bigioggero, B., Caironi, V., Cavazzini, G., Di Vincenzo, G., Ghezzi, C., Innocenti, F., Lombardo, B., Malorani, A., Manetti, P., Montrasio, A., Rocchi, S., Tonarini, S., Turi, B., Visonà, D. and Zantedeschi, C., (1991) - Geochronology, Isotope Geochemistry and Petrology of the Cambro-Ordovician, Devonian and Cretaceous Intrusives of North Victoria Land, Antarctica. - Sixth International Symposium on Antarctic Earth Sciences, 9-13 September 1991.

Title: "Earth Sciences. Petrological, geochemical and geochronological data-base of the igneous and metamorphic rocks of Victoria Land"

Parameters: GEOLOGICAL PARAMETERS > PETROLOGY

Discipline: EARTH SCIENCE > LAND

Keywords: VICTORIA LAND
PETROLOGY
GEOCHEMISTRY
GEOCHRONOLOGY
STRUCTURAL GEOLOGY
GEODYNAMICS

Sensors: PMSC > MICROSCOPE, PETROGRAPHICAL
XRDFC > X RAY DIFFRACTOMETER
SEMSC > ELECTRON MICROSCOPE, SCANNING
EMP81 > ELECTRON MICROPROBE, SEM-EDS WLD
XRFLS > X RAY FLUORESCENCE SPECTROMETER
MS > MASS SPECTROMETER

Sources: BTINV > NORTH VICTORIA LAND, TERRA NOVA BAY INLAND
SIUDST > DEPT. OF EARTH SCIENCES, SI
TOUDST > DEPT. OF EARTH SCIENCES, TO
PIRIGGI > INST. FOR ISOTOPE GEOCHRON. GEOCHEMSTR., PI

Location: ANTARCTICA

Coverage: Minimum Latitude: 77S
Maximum Latitude: 72S
Minimum Longitude: 158E
Maximum Longitude: 170E

Data Center: SIUDST > DEPT. OF EARTH SCIENCES, SI

Originating Center: SIUDST

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Storage Medium: MAGNETIC DISKS
CARTRIDGE 300MB AND 95 MB, 20 MB AND 54 MB ON PC
MAGNETIC TAPES 1600 6250 BPI
FLOPPY DISKS 5.25 AND 3.5 DOUBLE DEN. AND HIGH DEN.

Dates: Start
1985-12-24

Stop

Revision
1992-05-31

Science Rev

Future Rev
1993-05-31

PNRA > Programma Nazionale di Ricerche in Antartide

PNRA-63

"Earth Sciences. Petrological, geochemical and geochronological
data-base of the igneous and metamorphic rocks of Victoria Land"

SUMMARY: This data base includes field, petrographical, geochemical and geochronological data of igneous and metamorphic rocks which were sampled in Northern Victoria Land during six Italian antarctic expeditions in the period from 1985 to 1991. Analytical work has been carried out as part of the "Programma Nazionale di Ricerche in Antartide" (Sector: Earth Sciences, Research themes: A and B).

REFERENCES:

Carmignani, L., Ghezzo, C., Gosso, G., Lombardo, B., Meccheri, M., Montrasio, A., Pertusati, P.C. and Salvini, F., Geology of the Wilson Terrane in the area between David and Mariner Glaciers - Mem. Soc. Geol. It., 33, 69-76, 1989.
Lombardo, B. and 11 others, The metamorphic rocks of the Wilson Terrane between David and Mariner Glaciers, North Victoria Land, Antarctica - Mem. Soc. Geol. It., 33, 77-98, 1989.

Ghezzo, C. and 10 others, Granitoids from the David Glacier - Aviator Glacier segment of the Transantarctic Mountains, Victoria Land, Antarctica - Mem. Soc. Geol. It., 33, 143-160, 1989.

Borsi, L., Ferrara, G. and Tonarini, S., Rb-Sr and K-Ar data on Granite Harbour Intrusives from Terra Nova Bay and Priestley Glacier (Victoria Land, Antarctica) - Mem. Soc. Geol. It., 33, 161-170, 1989.

Title: "Organic compounds in Antarctic matrices (sea water - pack ice - sediments - snow)"

Parameters: OCEAN COMPOSITION > CHEMICAL TRACERS
OCEAN COMPOSITION > SEDIMENTS
OCEAN COMPOSITION > ORGANIC MATTER

Discipline: EARTH SCIENCE > OCEAN

Keywords: TERRA NOVA BAY PCB
ROSS SEA
OCEANIC COMPOUNDS
SEA WATER
PACK ICE
SEDIMENTS
ORGANIC COMPOUNDS
TRACE ELEMENTS
ALIPHATIC HYDROCARBONS
AROMATIC HYDROCARBONS
HETEROCOMPOUNDS
PESTICIDES

Sensors: GC > GAS CHROMATOGRAPH
IDTC > FLAME IONIZATION DETECTOR
ECDTC > ELECTRON CAPTURE DETECTOR
ITDTC > ION TRAP DETECTOR

Sources: BTN > GROUND STATION, TERRA NOVA BAY STATION
FIUDSPEC > DEPT. OF PUBLIC HEALTH ANAL. CHEMSTR., FI

Location: ANTARCTICA
PACIFIC OCEAN
SOUTHERN OCEAN

Coverage: Minimum Latitude: 70
Maximum Latitude: 74
Minimum Longitude: 177
Maximum Longitude: 164

Data Center: FIUDSPEC > DEPT. OF PUBLIC HEALTH ANAL. CHEMSTR., FI

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Storage Medium: MAGNETIC DISK

Dates: Start 1987-11-01

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Revision 1992-05-31

Science Rev

Future Rev

PNRA > Programma Nazionale di Ricerche in Antartide

PNRA-64

SUMMARY: The data on the concentration of organic compounds in Antarctic matrices are relative to the Italian Antarctic expeditions of the years 1987/88-1988/89-1989/90. They are mainly obtained from laboratory analyses in Florence, on frozen samples, and are relative to individual concentration of organic compounds in the analyzed matrix. The data are obtained with specific analytical procedure for each matrix, tested with reference standards, using chromatographic techniques. Up to now we have analyzed surface sea-water samples from Terra Nova Bay and adjacent sites and the water column up to 1500 m. depth in the Ross Sea; pack ice from Terra Nova Bay and adjacent sites; marine sediments from Terra Nova Bay and Ross Sea; snow from Terra Nova Bay. The data show the presence in the Antarctic environment of a great number of organic compounds of anthropogenic and biogenic origin as well: alkanes, aromatic hydrocarbons, steroids, alcohols, amides, lipids, phthalates, pesticides, pcbs. Concentration are in the ppt. range (ng/l). All data are published by "Annali di Chimica" (Roma). The 1988-89 expedition data are in press.

REFERENCES: Desideri, P.G., Lepri, L. and Checchini, L., Identification and determination of organic compounds in sea water, in Terra Nova Bay (Antarctica). Ann. Chim., 79, p. 587, (1989).

Title: "Fission track dating of apatite: the uplift of the
Transantarctic Mountains"

Parameters: GEOLOGICAL PARAMETERS > AGE DETERMINATIONS
GEOLOGICAL PARAMETERS > STRATIGRAPHY

Discipline: EARTH SCIENCE > INTERIOR AND CRUST

Keywords: VICTORIA LAND
TRANSANTARCTIC MOUNTAINS
GEOCHRONOLOGY
CRUST
MANTLE EVOLUTION
GEOLOGY
FISSION TRACKS
APATITE

Sensors: MSC > MICROSCOPE

Sources: PIRIGGI > INST. FOR ISOTOPE GEOCHRON. GEOCHEMSTR., PI

Location: ANTARCTICA

Coverage: Minimum Latitude: -76
Maximum Latitude: -73
Minimum Longitude: +162
Maximum Longitude: +166

Data Center: PIRIGGI > INST. FOR ISOTOPE GEOCHRON. GEOCHEMSTR., PI

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Storage Medium: VOLUME PRINTED TABLES

Dates: Start
1991-01-02

Stop

Revision
1992-05-31

Science Rev

Future Rev
1993-05-31

PNRA > Programma Nazionale di Ricerche in Antartide

PNRA-65

"Fission track dating of apatite: the uplift of the Transantarctic Mountains"

SUMMARY: Several apatite concentrates from samples collected in the area between the David and Mariner glaciers (Victoria Land) were prepared for FT dating. Preliminary measurements of spontaneous track densities are at moment available. Fission track ages will be ready in few months.

REFERENCES:

- Fitzgerald, P.G. and Gleadow, A.J.W., Fission track geochronology, tectonics and structure of Transantarctic Mountains in northern Victoria Land, Antarctica, Chem. Geol. (Isot. Geosci. Sect.), 73, 169-198, 1988.
- Fitzgerald, P.G., Sandiford, M., Barrett, P.T. and Gleadow, A. J. W., Asymmetric extension associated with uplift and subsidence of the Transantarctic Mountains and Ross Embayment, Earth Planet. Sci. Lett., 81, 67-78, 1986.
- Gleadow, A.J.W. and Fitzgerald, P.G., Uplift history and structure of the Transantarctic Mountains: new evidence from fission track dating of basement apatites in the Dry Valleys area, southern Victoria Land, Earth Planet. Sci. Lett., 82., 1-14, 1987.
- Wagner, G.A., Gleadow, A.J.W. and Fitzgerald, P.G., The significance of the partial annealing zone in apatite fission-track analysis: projected track length measurements and uplift chronology of the Transantarctic Mountains, Chem. Geol. (Isot. Geosci. Sect.), 79, 295-305, 1989.

Title: "Geochemistry of sediments from the Ross Sea, Antarctica"

Parameters: OCEAN COMPOSITION > SEDIMENTS
OCEAN COMPOSITION > MAJOR ELEMENTS
OCEAN COMPOSITION > TRACE ELEMENTS

Discipline: EARTH SCIENCE > OCEAN

Keywords: OCEANOGRAPHY
GEOCHEMISTRY
ROSS SEA
SEDIMENTS
MAJOR ELEMENTS
TRACE ELEMENTS

Sensors: GFAASPH > ATOMIC ABSORPTION SPECTROPHOTOMETER, GRAPHITE FURNACE
THAN > SIMULTANEOUS THERMAL ANALYZER

Sources: VEUDSA > DEPT. OF ENVIRONM. SCIENCES GEOMIN. SECT., VE

Location: ANTARCTICA

Coverage: Minimum Latitude: 76S
Maximum Latitude: 73S
Minimum Longitude: 163E
Maximum Longitude: 174E

Data Center: VEUDSA > DEPT. OF ENVIRONM. SCIENCES GEOMIN. SECT., VE

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Storage Medium: MAGNETIC DISK

Dates: Start 1988-05-01

Stop

Revision 1992-05-31

Science Rev

Future Rev 1993-05-31

PNRA > Programma Nazionale di Ricerche in Antartide

PNRA-66

SUMMARY: Data set correspond to concentrations of elements determined on surface and bottom sediments collected from the Italian Antarctic expedition 1987/88 on the Ross Sea. Major elements (SiO_2 , Al_2O_3 , Fe_2O_3 , MgO , CaO , Na_2O , K_2O , TiO_2 , P_2O_5) and trace elements (Cr, Ni, Cu, V, Co, Pb, Zn, Cd) have been detected. Loss on ignition (L.O.I.) at 1000 degree C was also determined. Samples location, geographical distribution of the elements, their inter-relation have been reported in the papers of the references. Details on methodologies can also be found on the same papers. Geochemical analysis of bottom sediments collected in Terra Nova Bay during the Italian Antarctic expedition 1989/90 are in progress.

REFERENCES:

- Hieke Merlin, O., Longo, Salvador, G., Menegazzo Vitturi, L., Molinaroli, E., Pistolato, M. and Rampazzo, G., Major element geochemistry of sediments from the Ross Sea, Antarctica, Boll. Oceanol. Teor. ed Applic., vol VII, 1-2, 85-96, 1989.
- Hieke Merlin, O., Longo Salvador, G., Menegazzo Vitturi, L., Pistolato, M. and Rampazzo, G., Preliminary results on trace elements geochemistry of sediments from Ross Sea, Antarctica, Boll. Oceanol. Teor. ed Applic., VII, 1-2, 97-108, 1989.
- Hieke Merlin, O., Longo Salvador, G., Menegazzo Vitturi, L., Pistolato, M. and Rampazzo, G., Geochemical characteristics of western Ross Sea (Antarctica) sediments, Mar. Geol., 99, 1/2 209-222, 1991.

Title: "Crystal chemistry of zeolites from Terra Victoria Land
(Antarctica)"

Parameters: GEOLOGICAL PARAMETERS > PETROLOGY

Discipline: EARTH SCIENCE > INTERIOR AND CRUST

Keywords: VICTORIA LAND
MINERALOGY
ZEOLITES
CRYSTALLOGRAPHY

Sensors: GCMSC > MICROSCOPE, GANDOLFI CAMERA
EMPB > ELECTRON MICROPROBE

Sources:

Location: ANTARCTICA

Coverage: Minimum_Latitude: 74S
Maximum_Latitude: 74S
Minimum_Longitude: 164E
Maximum_Longitude: 164E

Data Center: MOUIMP > INST. FOR MINERALOGY PETROLOGY, MO

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Storage Medium: MAGNETIC TAPES
PHOTOGRAPHIC PRINTS

Dates: Start
1990-12-10

Stop

Revision
1992-05-31

Science Rev

Future Rev

PNRA > Programma Nazionale di Ricerche in Antartide

PNRA-67

"Crystal chemistry of zeolites from Terra Victoria Land
(Antarctica)"

SUMMARY: This study concerns the chemical and crystallographic characterization of natural zeolites occurring in and cavities of Jura Kirkpatrick basalts and Ferrar dolerites from Victoria Land (Antarctica). Mordenite, heulandite and erionite have already identified and analyzed by electron microscope and thermo-gravimetric analysis.

REFERENCES:

Gottardi, G. and Galli, E., Natural zeolites, Springer-Verlag Ed.
Berlin-Edelberg, 1985.

Title: "Structure and function of proteins from Antarctic organisms
(fishes, birds, seals, thermophilic bacteria)"

Parameters: BIOLOGICAL ENTITIES

Discipline: EARTH SCIENCE > OCEAN

Keywords: TERRA NOVA BAY COLD ADAPTATION
ROSS SEA HEMOGLOBIN
BIOCHEMISTRY ENZYME
PHYSIOLOGY
METABOLISM
FISHES
BIOLOGY
PROTEINS
EVOLUTION
SPECIATION MECHANISMS
BIRDS
THERMOPHILE

Sensors: AMACSEQ > AMINO ACID SEQUENCER
SPH > SPECTROPHOTOMETER

Sources: BTN > GROUND STATION, TERRA NOVA BAY STATION
NARIBPE > INST. FOR PROTEIN BIOCHEMSTR. ENZYMOLOGY, NA

Location: ANTARCTICA

Coverage:

Data Center: NARIBPE > INST. FOR PROTEIN BIOCHEMSTR. ENZYMOLOGY, NA

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Storage Medium:

Dates: Start
1982-01-01

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Revision
1992-05-31

Science Rev

Future Rev

PNRA > Programma Nazionale di Ricerche in Antartide

PNRA-68

SUMMARY:

1. The temperature of the Antarctic Ocean is constantly at -1.9°C. Fishes, isolated for over 40 million years, have followed pathways of evolution which allowed survival. Our research is on the investigation of the molecular basis of cold adaptation of fishes, focusing on the structure-function relationship of hemoglobin and enzymes.
 2. The physiology and biochemistry of respiration in diving bird and in seals will be studied in view of their capacity to stay under water for long periods of time. This implies comparative differences in the oxygen transport system.
 3. Several enzymes will be isolated and studied from strains of thermophilic and aliphilic bacteria, found in areas of geothermal activity, aiming at biotechnological developments.
- The results of these investigations are not fit to be stored in a data base. The experimental data are not a collection of figures or parameters. They are processed until a final conclusion is reached (e. g. the amino acid sequence of a protein).
A useful output can be the list of publications related to the research program.

REFERENCES:

- D'Avino, R. and di Prisco, G., (1985), Structural Studies on Hemoglobins from Antarctic Marine Organisms. *Ital J Biochem*, 34, 457-460
- di Prisco, G. (Invited Speaker) (1986), Antarctic Fishes and Cold Adaptation. *Proc 1st Symp on Marine Biochemistry*, *Ital Biochem Soc.*, 51-68. Editoriale Grasso, Bologna.
- di Prisco, G., D'Avino, R., Condo', S., Giardina, B. and Brunori, M., (1986), Regulatory Effects on Oxygen Binding in Antarctic Fish Hemoglobin. *Proc 1st Symp on Marine Biochemistry*, *Ital Biochem Soc.*, 113-115, Editoriale Grasso, Bologna.
- di Prisco, G., (1986), Functional Properties of Hemoglobin from Antarctic Fishes. *Antarct J US*, 21(5), 215-216.
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- di Prisco, G., (1988), A Study of Hemoglobin in Antarctic Fishes: Purification and Characterization of Hemoglobins from Four Species. In: G. di Prisco, B. Maresca, B. Tota (eds), *Proc. International Conference on Marine Biology of Antarctica*, Ravello, 1986. *Comp Biochem. Physiol.*, 90B, 631-637.
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- D'Avino, R. and di Prisco, G., (1989), Hemoglobin from the Antarctic Fish *Notothenia coriiceps neglecta*. - 1. Purification and Characterisation. *Eur J. Biochem.*, 179, 699-705
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- di Prisco, G., and D'Avino, R., (1989), Molecular Adaptation of the Blood of Antarctic Teleosts to Environmental Conditions. *Antarctic Science*, 1, 119-124
- D'Avino, R., Caruso, C., Schinina, M.E., Rutigliano, B., Romano, M., Camardella, L., Bossa, F., Barra, D. and di Prisco G., (1989), The Amino Acid Sequence of the alpha- and beta-Chains of the Two Hemoglobins of the Antarctic Fish *Notothenia coriiceps neglecta*. *FEBS Letters*, 250, 53-56
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Macdonald, J.A., Wells, R.M.G. and di Prisco, G., (1989), Thin Blooded Antarctic Fishes: Absence of Erythrocytes is a Major Factor Determining Low Blood Viscosity in Ice-Fishes. *Proceedings of the Physiological Society of New Zealand*, 9, p. 25

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di Prisco, G., D'Avino, R., Caruso, C., Romano, M., Camardella, L. and Rutigliano, B., (1989), The Oxygen Transport in Antarctic Fishes: Structure and Function of Hemoglobin. *Proceedings of the International Symposium on Antarctic Research*, Hangzhou, China 311-316

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Camardella, L., Carratore, V., Caruso, C., D'Avino, R., di Prisco, G., Romano, M., Rutigliano, B. and Tamburrini, M., (1991) Studies on the Molecular Bases of Adaptation to Low Temperatures in Antarctic Teleostea: Hemoglobins and Enzymes. *Proceedings of the 1st Meeting on Biology in Antarctica*, Rome, pp 231-273. *Scienza e Cultura*, Padova.

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D'Avino, R., Romano, M., Camardella, L., Caruso, C., Rutigliano, B. and di Prisco, G. (1987), Amino Acid Sequence of the Alpha-Chain of the Antarctic Teleost *Notothenia coriiceps neglecta* Proteine '87, Firenze, Abstr No P39, p. 123

D'Avino, R., Caruso, C., Schinina, M.E., Rutigliano, B., Camardella, L., Romano, M., Barra, D. and di Prisco, G., (1988), Hemoglobins of the Antarctic Teleost *Notothenia coriiceps neglecta*: Amino Acid Sequence of the alpha-Chain. Proteine ' 88 Napoli, Abstr No P47, 182-183.

di Prisco, G. and D'Avino, R., (1988), Biological Adaptation of Antarctic Teleosts to Environmental Conditions. Meeting: Origins and Evolution of the Antarctic Biota, London, Cambridge, p 35

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di Prisco, G., D'Avino, R., Camardella, L., Caruso, C., Romano, M. and Rutigliano, B., (1988), Molecular Structure of Antarctic Fish Hemoglobin and Evolutionary Implications. 5th SCAR Symp on Antarctic Biology, Hobart, Australia, p. 28.

di Prisco, G. (Invited Speaker), D'Avino, R., Caruso, C., Romano, M., Camardella, L. and Rutigliano, B., (1989), Antarctic Fish Haemoglobins: Molecular Structure and Regulatory Effects on Oxygen Binding. Symposium "The Root Effect - Myth or Physiological Reality?"; Society for Experimental Biology, Edinburgh Meeting, p. 91

di Prisco, G., D'Avino, R., Caruso, C., Romano, M., Camardella, L. and Rutigliano, B., (1989), The Oxygen Transport in Antarctic Fishes: Structure and Function of Hemoglobin. International Symposium on Antarctic Research, Hangzhou, China, Abstr No 1-28

Caruso, C., Rutigliano, B., Romano, M. and di Prisco, G., (1989), The Hemoglobins of the Antarctic Teleost *Cygnodraco mawsoni* 19th Meeting of the Federation of the European Biochemical Societies, Rome, Abstr No M0303

Nicolaus, B., Esposito, E., Trincone, A., De Rosa, M., White, D., Sharp, R. di Prisco, G. and Gambacorta, A., (1989), Isolation of Thermophilic Microbial

"Structure and function of proteins from Antarctic organisms
(fishes, birds, seals, thermophilic bacteria)"

Species in Antarctica. 19th Meeting of the Federation of the European
Biochemical Societies, Rome, Abstr No M0313

Title: "Balloon and groundbased observations of polar stratospheric clouds"

Parameters: ATMOSPHERIC COMPOSITION > AEROSOLS
ATMOSPHERIC COMPOSITION > CLOUDS

Discipline: EARTH SCIENCE > ATMOSPHERE

Keywords: ROSS ISLAND
MCMURDO STATION
ICE CRYSTALS
PHYSICS
GEOPHYSICS
POLAR CLOUDS
STRATOSPHERE

Sensors: CCDBB > CHARGED COUPLED DEVICE, AEROSOL BALLOON BORNE IMAGING
LIDAR > LIGHT DETECTION AND RANGING

Sources: BP > BALLOON BORNE PAYLOAD

Location: ANTARCTICA

Coverage: Minimum Latitude: 78S
Maximum Latitude: 78S
Minimum Longitude: 167E
Maximum Longitude: 167E

Data Center: RMRIFA2 > INST. FOR ATMOSPHERIC PHYSICS, FRA/RM

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Storage Medium: MAGNETIC DISK
VIDEO TAPE

Dates: Start
1990-08-28

Stop
1990-10-11

Revision
1992-05-31

Science Rev

Future Rev

PNRA > Programma Nazionale di Ricerche in Antartide

PNRA-69

SUMMARY: The experiment permits to get combined balloon and lidar data of Polar Stratospheric clouds (PSC II) composed by particles with diameters larger than 4 μ m. However, during the campaign, lidar measurements have been continuously taken on the stratosphere. So different kind of Polar Stratospheric Clouds (PSC I) and aerosol lidar profiles can be supplied. Particularly, during the 1990 campaign, no PSC II were present. The lidar operated overall the period and performed 86 measurements in a total time of 66 hours. The data reveal the presence of PSC I in the period September 5-10, but sporadic after that. Combined data are related to a test launch on a cirrus cloud on October 7. Cirrus particles were collected in the cloud profiles; vertical resolution: 60 m. BACI data are recorded on video MAGNETIC TAPES using standard CCIR.

REFERENCES:

- Deshler, T., Adriani, A., Hofmann, D.J. and Gobbi, G.P., Evidence for denitrification in the 1990 Antarctic spring stratosphere: II Aerosol. Geophys. Res. Let. 18, submitted, 1991.
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- Hofmann, D.J., Rosen, J.M., Harder, J.W., and Hereford, J.V., Balloon-borne measurements of aerosols, condensation nuclei, and clouds in the stratosphere at McMurdo station Antarctica, during the spring of 1987. J. Geophys. Res. 94D, 11253-11269, 1989.
- Hofmann, D.J. and Deshler, T., Stratospheric cloud observation during formation of the Antarctic ozone hole in 1989. J. Geophys. Res. 96D, 2897-2912, 1991.

Title: "Biological oceanography benthic communities (benthic
bionomy and zoobenthos) of Terra Nova Bay (Ross Sea)"

Parameters: BIOLOGICAL ENTITIES > MICROORGANISMS
BIOLOGICAL ENTITIES > MINOR SPECIES

Discipline: EARTH SCIENCE > OCEAN

Keywords: BIOLOGY
ECOLOGY
ZOOECOLOGY
TERRA NOVA BAY
BENTHONIC COMMUNITIES
POLYCHAETA
FORAMINIFERA
OSTRACODA
PYCNOGONIDS
MOLLUSCA
BRYOZOA
ROSS SEA

Sensors: GBM > GRAB MACHINE
DRG > DREDGE SYSTEM
ROTVC > VIDEO CAMERA, REMOTELY OPERATED

Sources: AV > AUXILIARY VESSEL
RB > RUBBER BOAT
BTNS > ROSS SEA, TERRA NOVA BAY

Location: ANTARCTICA

Coverage: Minimum Latitude: 74S
Maximum Latitude: 76S
Minimum Longitude: 163E
Maximum Longitude: 168E

Data Center: CTUIPOP > INST. FOR OCEANOLOGY PALEOECOLOGY, CT

Originating Center: CTUIPOP

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Storage Medium: MAGNETIC DISK
35 mm SLIDES
VIDEO CASSETTE > U MATIC > PAL

Dates: Start
1988-01-01

Stop

Revision
1992-05-31

Science Rev

Future Rev
1993-05-31

PNRA > Programma Nazionale di Ricerche in Antartide

PNRA-70

SUMMARY: Two oceanographic benthic expeditions have been carried out during the austral
summers 1987/88 and 1989/90.
More than 200 stations, from the sea level to about 1100 metres depth have
been sampled by means of a Van Veen grab and a Picard dredge or by diving.
Videocassette filmed by means of a roV have been used to recognize the
relations between the benthic communities and the type of substratum and the
ecotons. The study of the benthic communities has been carried out following
the Peres and Picard benthic model. The final aim of the benthic research at
Terra Nova Bay (Ross Sea, Antarctica) consists in: 1) drawing up a systematic
list of the benthic fauna; 2) recognition of the benthic communities, both of
hard and soft bottoms; 3) drawing up a preliminary map of the benthic
communities.

REFERENCES:

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Ross Sea, Antarctica. Benthos: a preliminary report, Nat. Sc. Com. Ant.,
Ocean. Camp. 1987-88, Data Rep., (1990) I, 407-421, 1990.
- Rosso, A., Bryozoan Community of IB3 station (Ross Sea, Antarctica). Nat. Sc.
Com. Ant. Ocean. Camp. 1987-88, Data Rep., (1990) I, 423-438, 1990.
- Violanti, D., Distribution of living benthic foraminifera from Terra Nova Bay
(Antarctica) - Preliminary Report, Nat. Sc. Com. Ant., Ocean. Camp., 1987-88,
Data Rep., (1990) II, 233-237, 1990.
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Antarctica (sample IB3). Nat. Sc. Com. Ant., Ocean. Camp. 1987-88, Data Rep.
(1990) I, 439-442, 1990.

Title: "Molecular adaptation to the Antarctic environment:
respiratory and serum proteins"

Parameters: BIOLOGICAL ENTITIES > MICROORGANISMS

Discipline: EARTH SCIENCE > OCEAN

Keywords: RESPIRATORY PROTEINS
ENZYME
EVOLUTION
BIOLOGY
MOLECULAR SPECTROGRAPHY
BIOCHEMISTRY
ENZYMOLGY
HEMOGLOBIN
SERUM PROTEINS
LIGANDS

Sensors: FPLC > LIQUID CHROMATOGRAPH, FAST PROTEIN
SPH > SPECTROPHOTOMETER
STPFL > STOPPED FLOW
PHLAN > FLASH PHOTOLYSIS ANALYZER

Sources: RV > RESEARCH VESSEL

Location:

Coverage:

Data Center: RMU1DGBM > DEPT. OF MOLECULAR BIOLOGY, RM1

Originating Center: RMU1DGBM

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Storage Medium: MAGNETIC DISK
CARTRIDGES

Dates: Start
1991-12-01

Stop

Revision
1992-05-31

Science Rev

Future Rev
1993-05-31

PNRA > Programma Nazionale di Ricerche in Antartide

PNRA-71

"Molecular adaptation to the Antarctic environment:
respiratory and serum proteins"

SUMMARY: Hemoglobin was purified from the blood of several Antarctic fishes of the genera *Notothenia* and *Trematomus* and its oxygen and carbon monoxide binding properties were studied with equilibrium and kinetic techniques.

REFERENCES:

Di Prisco, G., Giardina, B., D'Avino, R., Condo', S.G., Bellelli, A. and Brunori, M., *Comp. Biochem. Physiol.*, 90B (3), 585-591, 1988.

Title: "Marine corrosion of metal alloys of wide technological use in extreme environmental conditions"

Parameters: BIOLOGICAL ENTITIES > MICROORGANISMS
OCEAN COMPOSITION > CHLOROPHYLL

Discipline: EARTH SCIENCE > OCEAN

Keywords: ROSS SEA
TERRA NOVA BAY
PENGUIN BAY
CORROSION POTENTIALS
CORROSION CURRENTS
OCEANOGRAPHY
BACTERIAL STOCKS
BACTERIOLOGY
CHEMISTRY
ELECTROLYTES
ELECTROCHEMICAL PROCESSES
METAL PROTECTION

MARINE CORROSION
MICROBIAL INDUCED CORROSION
FOULING
MICROBIOLOGY
BACTERIA

Sensors: EM > ELECTROMETER
PTS > POTENZIOSTAT
FRDR > FREEZE DRYER

Sources: BTNSPB > PENGUIN BAY, TERRA NOVA BAY

Location: ANTARCTICA

Coverage: Minimum Latitude: 74S
Maximum Latitude: 75S
Minimum Longitude: 163W
Maximum Longitude: 171E

Data Center: TARISTAC > INST. FOR EXPER. TALASSOGRAPHY, TA

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Storage Medium: MAGNETIC DISK
35 mm SLIDES

Dates: Start
1989-12-30

Stop

Revision
1992-05-31

Science Rev

Future Rev

PNRA > Programma Nazionale di Ricerche in Antartide

PNRA-72

SUMMARY: These data refer about metal exposure tests to evaluate the Antarctic marine environment corrosivity on a series of metal alloys of wide industrial use. During the 89-90 PNRA Campaign a structure, loading 120 metallic samples, was immersed into the sea. The alloys tested were: stainless steels (AISI 304, AISI 316, 20Cr, 18Ni, 6Mo), brass, copper, cupronickel 70/30, monel, aluminium trade and peraluman alloy. Some of these samples were recovered during the 90/91 Campaign and the remaining part will be recovered during a future campaign. During the campaign 89-90 and 90-91 corrosion lab. tests at 2, 10, 20, 30 degree Celsius, were also carried out on stainless steels to establish the biofilm catalytic effects on corrosion. Electrochemical parameters, such as corrosion potentials and galvanic currents, were supported by the characterization of biofilm grown at different temperature conditions. At this purpose biofilm samples, grown at different temperature conditions on metal surface, were collected and freeze-dried. Their analytical characterization is now carried out in Italy by measuring proteins, carbohydrates, lipopolisaccarides, chlorophyll-a contents and reconstructing fatty acid profiles. Biofilm samples were also spread, in Antarctica, on to Marine Agar and incubated at 4 degree Celsius. In Italy the bacterial strains were isolated and purified for taxonomical purpose. Already processed data are stored, tabulated in Lotus, in MAGNETIC DISK. Concerning the 89/90 Campaign, 72 bacterial strains were isolated and purified. Contact chief researcher for data and strains availability.

REFERENCES:

- Delille, D., 1985, Influence of temperature of Antarctic and Subantarctic bacterial microflora. *Oceanis* 11, 1, 27-43.
- Smuga-Otto, I., 1986, Factors influencing the corrosion of vessels and offshore structure in Arctic sea water. *Corrosion* '86, 57.
- Lignau, D.G., The Canadian Beaufort - The corrosive extreme. *Corrosion* '86, 57.
- Madsen, A.C., Mueller, F.O., Geinsert, R., Lee, J.B. and Choi, J., 1987, Duplex stainless steel pipelines and piping on the North Slope. *Material Performances*, Feb. 87, 49-85.
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- Schillmoller, C.M., Craig, B.D., 1987, Nickel steels in Arctic service. *Material performances*, Oct. 87, 46-49.
- Edyvean, R.J., Terry, L.A. and Pichen, G.B., 1985, Marine fouling and its effects on offshore structures in the North Sea: A review. *Int. Biodeterior.*, 21, 4, Dec. 85, 277-284.
- Smith, G.A., Nichols, P.D. and White, D.C., 1986, Fatty acid composition and microbial activity of benthic marine sediment from McMurdo Sound, Antarctica. *Fems. Microbiol. Lett.*, 38, 4, Oct. 86, 219-231.
- Kaneko, T., Krichevsky, M.I. and Atlas, R.M., 1979, Numerical Taxonomy of Bacteria from the Beaufort Sea. *Journal of General Microbiology*. 110, 111-125.
- Alabiso, G., Montini, U., Scotto, V., Mollica, A., Marcenaro, G., Beggiato, M., Dellepiane, R., Bandelloni, R. and Tiberti, D., 1991, Marine corrosion of metal alloys of wide technological use in extreme environmental conditions. *MURST, Nat. Sc. Com. Ant., Ocean. Camp. 1989 - 90, Data Rep. 1*, 395-409.
- Scotto, V., Alabiso, G. and Marcenaro, G., 1986, An example of microbiologically influenced corrosion: the behaviour of stainless steel in natural sea water. *Bioelectrochemistry and Bioenergetics*, 16, 347-355.
- Mollica, A., Trevis, A., Traverso, A., Venture, G., De Carolis, G. and Delle Piane, R., 1989, Crevice Corrosion Resistance of stainless steels in Natural Seawater in the temperature range of 25 to 40 degree Celsius. *Corrosion, NACE*, Jan 89, 48.
- Alabiso, G., Montini, U., Mollica, A., Beggiato, M., Scotto, V., Marcenaro, G. and Delle Piane, R., 1991, Marine Corrosion test on metal alloys in Antarctica: Preliminary results. *Proc. Int. Symp. on Marine and Microbial Corrosion, Stockholm 1991-9-30*, 10-2. (in press).

Title: "3-components seismic events (from 1989-01-01 to 1989-02-08)
recorded at Baker Rocks Land Station (near by Melbourne Volcano)"

Parameters: GEODYNAMIC FEATURES > SEISMIC

Discipline: EARTH SCIENCE > INTERIOR AND CRUST

Keywords: VICTORIA LAND
MOUNT MELBOURNE
SEISMIC SOURCE STUDIES
SEISMIC EVENTS
GEODYNAMICS

Sensors: SMS1 > SEISMIC SENSOR, S13
SMS2 > SEISMIC SENSOR, BB13

Sources: BTNIBR > BAKER ROCKS, TERRA NOVA BAY INLAND

Location: ANTARCTICA

Coverage:

Data Center: NAUIUN2 > UNIVERSITY INST. FOR NAVAL RESEARCH, NA

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Storage Medium: MAGNETIC DISK

Dates: Start
 1989-01-01

 Stop
 1989-02-08

 Revision
 1992-05-31

 Science Rev

 Future Rev

PNRA > Programma Nazionale di Ricerche in Antartide

PNRA-73

SUMMARY: Data regarding the Baker Rocks seismic Land station (Lat: 74: 55: 20 S Long: 164: 00: 50: E, elevation: 650mt) about 3-components velocity seismometric recordings using short period (1 sec.) seismic sensors (S 13) and PDAS 100 acquisition system. Events, due to their low intensity, are not included in the NEIC and NOA international catalogs. E-W component cannot be used due to a poor functioning of the seismic sensor. Spectral analysis of same events show a range of 0-10 Hz frequency content. Low time separation between P and S phases, together with the small time duration of events, are imputable to small epicentral distance and low seismic intensity (ice fractures) as also suggested by synthetic modelling.

REFERENCES:

- Sileny, J. and Panza, G.F., 1991, Inversion of seismograms to determine simultaneously the moment tensor components and source time function for a point source buried in a horizontally layered medium. *Studia Geophysica et Geodaetica*, 35, 166-183.
- Sileny, J., Panza, G.F. and Campus, P., 1992, Waveform inversion for point source with moment tensor retrieval with variable hypocentral depth and structural model, *Geophys J. Int.*, 108, in press.
- Panza, G.F., Sileny, J., Campus, P., Nicolich, R. and Ranieri, G., Source studies in volcanic and geothermal area. 8th Course of International School of Applied Geophysics, Ettore Majorana Centre, EMC, 1992.

Title: "Geochemical data on fumaroles and thermal springs"

Parameters: GEODYNAMIC FEATURES > VOLCANOES

Discipline: EARTH SCIENCE > INTERIOR AND CRUST

Keywords: DECEPTION ISLAND
SOUTH SHETLANDS
VOLCANOLOGY
GEOCHEMISTRY
FLUIDS

Sensors: VACBOT > VACUUM VIALS GLASS BOTTLES
TH > THERMOMETER
PHM > PHMETER
TGC > GAS CHROMATOGRAPH, TITROPROCESSOR

Sources: BTN > GROUND STATION, TERRA NOVA BAY STATION

Location: ANTARCTICA

Coverage: Minimum Latitude: 62S
Maximum Latitude: 62S
Minimum Longitude: 60W
Maximum Longitude: 60W

Data Center: FIUDST > DEPT. OF EARTH SCIENCES, FI

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Storage Medium: MAGNETIC TAPES

<u>Dates:</u>	<u>Start</u>	<u>Stop</u>	<u>Revision</u>	<u>Science Rev</u>	<u>Future Rev</u>
	1988-01-03	1988-02-01	1992-05-31		

PNRA > Programma Nazionale di Ricerche in Antartide

PNRA-74

"Geochemical data on fumaroles and thermal springs"

SUMMARY: The most recent eruptive episodes on Deception Island date back to 1967-70, and low-temperature fumaroles and thermal springs are the present evidence of an active volcanic system. On the basis of the chemical compositions of these manifestations it has been possible to derive direct influence of an underlying magma body, especially in the northern portion of the island which, thus, appears as the most likely location of possible future activity.

REFERENCES:

Martini, M. and Giannini, L., Deception Island (south Shetlands): an area of active volcanisms in Antarctica. Mem. Soc. Geol. It. 43 (1988), 117-122.

Title: "Meteoclimatic Survey over Atlantic and Pacific Oceans from 53
North to 41 South"

Parameters: ATMOSPHERIC DYNAMICS > SOLAR RADIATION
ATMOSPHERIC DYNAMICS > ATMOSPHERIC TEMPERATURE
ATMOSPHERIC DYNAMICS > HUMIDITY
ATMOSPHERIC DYNAMICS > PRESSURE
ATMOSPHERIC DYNAMICS > WINDS
ATMOSPHERIC COMPOSITION > AEROSOLS
ATMOSPHERIC COMPOSITION > TRACE GASES
ATMOSPHERIC COMPOSITION > NITROGEN DIOXIDE
ATMOSPHERIC COMPOSITION > OZONE

Discipline: EARTH SCIENCE > ATMOSPHERE

Keywords: NORTH SEA CHANNEL
MINERAL FRACTION
OZONE
ANEMOMETRY
SEDIMENTATION
SEA WATER
SOLAR RADIATION
ATMOSPHERIC PHYSICS
MARINE METEOROLOGY
EOLIAN DUSTS

Sensors: O3AN1 > O3 ANALYZER, DASIBI 1003
SRDAN1 > SOLAR RADIATION ANALYZER, CM 5
NOXAN1 > NOX ANALYZER, DASIBI 2108
MSDIMP > HIGH VOL. AIR FILTRATION MULTISTADIAL IMPACTOR (ISO)

Sources: RVOGS > RESEARCH VESSEL, OGS EXPLORA

Location: ATLANTIC OCEAN
PACIFIC OCEAN

Coverage: Minimum Latitude: 48S
Maximum Latitude: 53N
Minimum Longitude: 08E
Maximum Longitude: 178E

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Storage Medium: HARDCOPY PLOTS
DATA LOGGER
MAGNETIC TAPES

Dates: Start
1990-10-25

Stop
1990-12-03

Revision
1992-05-31

Science Rev

Future Rev

PNRA > Programma Nazionale di Ricerche in Antartide

PNRA-75

"Meteoclimatic Survey over Atlantic and Pacific Oceans from 53
North to 41 South"

SUMMARY: During the Course of R/V OGS Explora, steered from Bremerhaven to Wellington; meteorological and climatological measures were carried continuously on board. The survey was concerning:
1) records of T, P, U% data
2) apparent and true wind direction and speed
3) total solar radiation
4) photometry
5) O₃, NO, NO₂ percentage
6) air filtration by serial impactor for determine the grain-size distribution of airborne particles 7) air filtration by isokinetic samplers for ISP estimate, soluble fraction percentage, elemental composition 8) eolian dusts sampling by impingement on meshes for mineralogical and sedimentological purposes.

REFERENCES:

Lenaz, R., Anav, A., Belardinelli, F., Bocci, E., Di Menno, I., Kruisz, C., Cova, G., Spaggiari, G., Vidmar, R. and Scocchi, T., Misure meteoclimatiche effettuate durante la navigazione della N/R OGS Explora da Bremerhaven a Wellington. Ministero Universita' Ricerca Scientifica e Tecnica, Programma Nazionale di Ricerche in Antartide, Rapporto sulla campagna Antartica 1990-91 (in press).

Lenaz, R., Giovanelli, G., Nevozzi, F. and Bonasoni, P., (1991), Preliminary Analysis of the latitudinal ozone surface distribution over Atlantic and Pacific Oceans. Conf. Proc. 4. Workshop "Italian Research on Antarctic Atmosphere", Porano, 1991, SIF ed. Comp. Bologna. (in press).

Title: "Oceanographic campaign 1987/88 and 1989/90"

Parameters: OCEAN COMPOSITION > PHYTOPLANKTON

Discipline: EARTH SCIENCE > OCEAN

Keywords: TERRA NOVA BAY
ROSS SEA
PRIMARY PRODUCTION
OCEANOGRAPHY
ECOLOGY
C14 ASSIMILATION
PHOTOSYNTHETIC PICOPLANKTON

Sensors: LSCNT > LIQUID SCINTILLATION COUNTER

Sources: RVPQ > RESEARCH VESSEL, POLAR QUEEN
RVCB > RESEARCH VESSEL, CARIBOO

Location: ANTARCTICA

Coverage: Minimum Latitude: 76S
Maximum Latitude: 51S
Minimum Longitude: 162E
Maximum Longitude: 178E

Data Center: LEUDBIOL > DEPT. OF BIOLOGY, LE

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Storage Medium: FLOPPY DISK
VOLUMES PRINTED TABLES
HARDCOPY PLOTS

Dates: Start
1988-01-08

Stop
1990-06-01

Revision
1992-05-31

Science Rev

Future Rev
1993-05-31

PNRA > Programma Nazionale di Ricerche in Antartide

PNRA-76

"Oceanographic campaign 1987/88 and 1989/90"

SUMMARY: Here we report on the results on primary production relative to the different size fractions of plankton obtained in the Antarctic Ocean during the 1987-88 and 1989-90 cruises of the National Antarctic Research Program. During the first cruise (Dec. 87 - Febr. 88) a sea section of the Ross Sea in front of Terra Nova Bay was studied. The horizontal distribution of the primary production shows a negative gradient across and the contribution of the picophytoplankton (2.0-0.5 μm) reaches about 60%. ^{14}C assimilation attains maximum values at the surface and minimum at 30 m which corresponds, on the average, to less than 1% surface light intensity. During the second cruise (Nov. 89 - Jan 90) sampling were performed from 55S Lat. to Terra Nova Bay (75S Lat.). The maximum primary production has been encountered around 66S with values of 2.77 $\text{mgC/m}^3/\text{h}$ coinciding with a probable thermohaline front as shown by an increase in salinity and a net decrease of temperature. Picophytoplankton attained 70%. Continuing to the south in the Ross Sea occurs a clear decrease in the assimilation of ^{14}C , while the picoplankton contribution increases (86%). In a third area defined by the stations placed on transect at the same latitude (75S) the values for carbon assimilation resulted slightly lower than those measured in the previous area with also a lower contribution of picophytoplankton (77%).

REFERENCES:

- Brokel, K. von, 1981, The importance of nanoplankton within the pelagic Antarctic ecosystem. *Kieler Meeresforsch Sonderh*, 5, 61-67.
- El-Sayed, S.Z. and Turner, J.T., 1977, Productivity of the Antarctic and subtropical regions: a comparative study. In: *Proc. SCOR/SCAR Polar Oceans Conference*, Montreal, Canada, May 1974 (ed. M.J. Dubar), 463-504. Arctic Institute of North America.
- El Sayed, S.Z., 1987, Biological productivity of Antarctic waters: present paradoxes and emerging paradigms. In: *Antarctic aquatic biology BIOMASS Scientific Series*, n.7, 1-21.
- Fay, R.R., 1973, Significance of nanoplankton in primary production of the Ross Sea, Antarctica during 1972 austral summer. Unpublished PhD Dissertation: Texas A and M University.
- Holm Hansen, O. and Huntley, M., 1984, Feeding requirements of krill in relation to food sources. *J. Crus. Biol.*, 4(1), 156-173.
- Magazu', G., Bruni, V., Decembrini, F. and Panella, S., 1987, La produzione primaria del picoplancton fotosintetico nei mari italiani. *SIBM XIX Congresso*. Napoli 24-28 settembre.
- Probyn, T.A. and Painting, S.J., 1985, Nitrogen uptake by size-fractionated phytoplankton populations in Antarctic surface waters. *Limnol. Oceanogr.*, 30(6), 1327-1332.
- Richards, F.A. and Thompson, T.G., 1952, The estimation and characterization of plankton populations by pigment analysis. 2, A spectrophotometer method for estimation of plankton pigment. *J. Mar. Res.*, 11, 156-172.
- Steemann Nielsen, E., 1952, The use of radio-active carbon for measuring organic production in the sea. *J. Conseil*, 18, 117-140.
- Strickland, J.D.H. and Parsons, T.R., 1972, A practical handbook of sea water analysis. *Fish. res. bd. Canada, Bull.*, 169.
- Waterbury, J.B., Watson, S.W., Valoids, F.W. and Franks, D.G., 1986, Biological and ecological characterization of marine unicellular Cyanobacteria *Synechococcus*. In: *Photosynthetic picoplankton*. Platt T. and Li W.K.W. (Ed). *Can. Bull. Fish. Aquat. Sci.*, 214, 71-120.
- Walsh, J.J., 1971, Relative importance of habitat variables in predicting distribution of phytoplankton at the ecotone of the Antarctic upwelling ecosystem. *Ecol. Monog.*, 41, 291-309.

Title: "Determination of metal traces in sea water and lakewater from
Terra Nova Bay (Antarctica)"

Parameters: OCEAN COMPOSITION > TRACE ELEMENTS
OCEAN COMPOSITION > SEDIMENTS
HYDROLOGIC PARAMETERS > SURFACE WATER

Discipline: EARTH SCIENCE > OCEAN
EARTH SCIENCE > LAND

Keywords: TERRA NOVA BAY
ULTRATRACE METALS
CHEMISTRY
ENVIRONMENTAL IMPACT
SEA WATER
LAKES
SPECIATION MECHANISMS

Sensors: AES > ATOMIC EMISSION SPECTROMETER
ICP > INDUCTIVELY COUPLED PLASMA
GFAAS > ATOMIC ABSORPTION SPECTROMETER, GRAPHITE FURNACE
CVAAS > ATOMIC ABSORPTION SPECTROMETER, COLD VAPORS
CSV > CATHODIC STRIPPING VOLTAMMETER

Sources: TODIPCA > DEPT. OF ANALYTICAL CHEMISTRY, TO

Location: ANTARCTICA

Coverage: Minimum_Latitude: 74S
Maximum_Latitude: 76S
Minimum_Longitude: 163E
Maximum_Longitude: 168E

Data Center: TOUDCA > DEPT. OF ANALYTICAL CHEMSTR., TO

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Storage Medium: MAGNETIC DISK

Dates: Start
1988-12-15

Stop
1989-07-31

Revision
1992-05-31

Science Rev

Future Rev

PNRA > Programma Nazionale di Ricerche in Antartide

PNRA-77

"Determination of metal traces in sea water and lakewater from
Terra Nova Bay (Antarctica)"

SUMMARY: Reported data refer to the determination of ultratrace and trace metals in various systems and samples such as: sea water, lake water, particulate, sediments, soils, algae. The metals determined are prevalently transition metals. Speciation data for Fe are reported. The development of analytical procedures for the off-line and on-line trace metal enrichment is also described.

REFERENCES:

- Mentasti, E., Porta, V., Abollino, O. and Sarzanini, C., Trace metal determination in Antarctic sea water. *Ann. Chim. (Rome)*, 79, 629-635, (1989).
- Mentasti, E., Porta, V., Abollino, O. and Sarzanini, C., Atti convegno "Environmental impact in Antarctica", Roma, CNR, 8-9 giugno, 1990, 31-36.
- Abollino, O., Mentasti, E., Sarzanini, C., Porta, V. and Vandenberg, C.M.G., Speciation of iron in Antarctic lakewater by absorptive cathodic stripping voltammetry". *Analyt. Proceedings*, 28, 72-73 (1991).

Title: "Chemistry of Antarctic ice - study of terrestrial and extraterrestrial constituents"

Parameters: GEOGRAPHY AND LAND COVER > ICE
GEOGRAPHY AND LAND COVER > LAKES
GEOGRAPHY AND LAND COVER > GLACIERS

Discipline: EARTH SCIENCE > LAND

Keywords: STRAND LINE GLACIER
BOOMERANG GLACIER
ENIGMA LAKE
ICE
GEOCHEMISTRY
GLACIOLOGY
PALEOENVIRONMENTS

Sensors: AASPH > ATOMIC ABSORPTION SPECTROPHOTOMETER
PS > PLASMA SPECTROMETER
MS > MASS SPECTROMETER
IC > ION CHROMATOGRAPH

Sources: BTNI > TERRANOVA BAY INLAND

Location: ANTARCTICA

Coverage:

Data Center: MOUOGEOF > OBSERVATORY FOR GEOPHYS. SCIENCES, MO

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Storage Medium: MAGNETIC TAPES
PHOTOGRAPHIC PRINTS

Dates: Start
1990-12-01

Stop

Revision
1992-05-31

Science Rev

Future Rev

PNRA > Programma Nazionale di Ricerche in Antartide

PNRA-78

"Chemistry of Antarctic ice - study of terrestrial and extraterrestrial constituents"

SUMMARY: A chemical and isotope study on Antarctic ice has been carried out in order to allow glaciological and paleoenvironmental reconstructions for different areas of Terra Nova Bay. The search has also considered some cosmochemical aspects through the analysis of the presumed cosmogenic component.

Title: "Main and trace components of snow and ice"

Parameters: GEOGRAPHY AND LAND COVER > ICE
GEOGRAPHY AND LAND COVER > SNOW

Discipline: EARTH SCIENCE > LAND

Keywords: VICTORIA LAND
TERRA NOVA BAY
PRIESLEY NEVE
SNOW
EQUILIBRIA IN SOLUTION
CHEMICAL ANALYSIS
MAJOR ELEMENTS
ENVIRONMENTAL IMPACT
PRECIPITATIONS
ICE CORES

Sensors: AASM > ATOMIC ABSORPTION SPECTROMETER
IC > ION CHROMATOGRAPH
POTTRA > POTENTIOMETRIC TITRATIONS
FL > FLUOROMETER

Sources: BTN > GROUND STATION, TERRA NOVA BAY STATION

Location: ANTARCTICA

Coverage: Minimum Latitude: 73S
Maximum Latitude: 77S
Minimum Longitude: 160E
Maximum Longitude: 165E

Data Center: FIUDSPEC > DEPT. OF PUBLIC HEALTH ANAL. CHEMSTR., FI

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Storage Medium: MAGNETIC DISK

Dates: Start
1987-12-01

Stop

Revision
1992-05-31

Science Rev

Future Rev

PNRA > Programma Nazionale di Ricerche in Antartide

PNRA-79

"Main and trace components of snow and ice"

SUMMARY: Some relevant inorganic ions (Na^+ , K^+ , Ca^{2+} , Mg^{2+} , H^+ , SO_4^{2-} , NO_3^- , Cl^-) are determined in surface snow collected during Antarctic summers 87/88, 88/89 and 89/90.
Procedures: ion chromatography, atomic absorption spectroscopy, potentiometric titrations. Flow Injection Analysis (FIA).
A ion chromatographic method for the determination of fluorides, acetates, propionates, formiates and methansulphonates is developed and applied to snow samples.
The source of these components may be ascribed to a rich aerosol of marine and crustal origin. The contribution of methanesulphonic acid, which is an index of marine biological activity to the natural cycle of sulphur compounds, has been evaluated.

REFERENCES:

- Piccardi, G., Udisti, R. and Barbolani, E., Analysis of the principal components of Antarctic precipitations, *Ann. Chim. (Rome)*, 79, 701-712, 1989.
- Udisti, R., Barbolani, E. and Piccardi, G., Determination of some organic and inorganic substances present at ppb level in Antarctic snow and ice by ion chromatography. *Ann. Chim. (Rome)*, 81, 325-341.
- Berresheim, H., Biogenic sulfur emission from the subantarctic and Antarctic Oceans, *J. Geophys. Res.*, 92 (d11), 13245-13262, 1987.
- Delmas, R., Briat, M. and Legrand, M., Chemistry of south polar snow, *J. Geophys. Res.*, 87 (C6), 4314-4318, 1982.

Title: "Elemental composition of airborne particulate matter at the
Antarctic Italian Base - Terra Nova Bay Station"

Parameters: ATMOSPHERIC COMPOSITION > TRACE ELEMENTS

Discipline: EARTH SCIENCE > ATMOSPHERE

Keywords: TERRA NOVA BAY
POLLUTANTS
ENVIRONMENTAL IMPACT
TRACE ELEMENTS
ORGANIC COMPOUNDS
POLLUTION
PAH
ATMOSPHERE

Sensors: APM > AIRBORNE PARTICLE MONITOR
HVSMP > SAMPLER, HIGH VOLUME
NAAN > INSTRUMENTAL NEUTRON ACTIVATION ANALYSIS
HPLC > LIQUID CHROMATOGRAPH, HIGH PERFORMANCE

Sources: BTNISL > SKUA LAKE, TERRA NOVA BAY INLAND
BTN > GROUND STATION, TERRA NOVA BAY STATION

Location: ANTARCTICA

Coverage: Minimum Latitude: 75S
Maximum Latitude: 75S
Minimum Longitude: 164E
Maximum Longitude: 164E

Data Center: RME3PA > ENEA CRE CASACCIA, ANTARCTIC PROJECT

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Storage Medium: PAPER

Dates: Start
1986-12-31

Stop

Revision
1992-05-31

Science Rev

Future Rev
1993-05-31

PNRA > Programma Nazionale di Ricerche in Antartide

PNRA-80

"Elemental composition of airborne particulate matter at the
Antarctic Italian Base - Terra Nova Bay Station"

SUMMARY: Airborne particulate matter has been sampled and analyzed to determine its elemental composition by INAA.
Data related to the following expeditions are available: 1986-87, 1987-88, 1988-89.
Data elaborations related to the expeditions 1989-90, 1990-91 are in progress.
Accuracy and precision depend on the methodology adopted and are related to the low concentration levels.
Concentrations are expressed in weight/volume.

REFERENCES:

Michetti, I. and Testa, L., Impatto ambientale a Terra Nova Bay: composizione chimica del particolato atmosferico raccolto durante la campagna Antartica 1986-87, ENEA RT/AMB/90/11.

Michetti, I., Perini, A. and Testa, L.,
Environmental impact of the Italian Antarctic station Terra Nova Bay.
Proceedings of the meeting on Environmental Impact in Antarctica, 149-154, Rome 1990.

Perini, A., Caricchia, A.M., Pezza, M. and Chiavarini, S., PAH level in atmospheric particulate from Italian Antarctic scientific base, in press.

Title: "Surface viscoelasticity, fluorescence spectra, mass balance of
particulated matter from sea water and snow"

Parameters: ATMOSPHERIC COMPOSITION > AEROSOLS
ATMOSPHERIC DYNAMICS > PRECIPITATION
OCEAN COMPOSITION > ORGANIC MATTER
OCEAN COMPOSITION

Discipline: EARTH SCIENCE > ATMOSPHERE

Keywords: TERRA NOVA BAY
GERLACHE INLET
MOUNT MELBOURNE
CAMPBELL GLACIER
SURFACES
CHEMISTRY
FLUORESCENCE
ENVIRONMENTAL IMPACT
SEA WATER
SPECTRA
PRECIPITATIONS

Sensors: SVIEL > TIME RESOLVED SURFACE VISCOELASTOMETER
FLSPH > FLUORESCENCE SPECTROPHOTOMETER
VACEB > VACUUM ELECTROBALANCE

Sources: BTN > GROUND STATION, TERRA NOVA BAY STATION
FIUDCOUS > DEPT. OF ORGANIC CHEMSTR., FI

Location: ANTARCTICA

Coverage: Minimum Latitude: 74S
Maximum Latitude: 76S
Minimum Longitude: 164E
Maximum Longitude: 168E

Data Center: FIUDCOUS > DEPT. OF ORGANIC CHEMSTR., FI

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Storage Medium:

Dates: Start 1987-12-01

Stop

Revision
1992-05-31

Science Rev

Future Rev
1993-05-31

PNRA > Programma Nazionale di Ricerche in Antartide

PNRA-81

"Surface viscoelasticity, fluorescence spectra, mass balance of
particulated matter from sea water and snow"

SUMMARY: All the data are available in the papers listed in field 20 except where indicated.
This data set contains three types of data:
1) Fluorescence spectra of natural Antarctic sea water. They are all corrected and were recorded by means of a Perkin-Elmer MPF44A Fluorescence Spectrophotometer. The maximum normalized intensity is reported in the published papers, whereas the complete spectra are available in our laboratory.
2) Mass Balance data. They were obtained by means of a Cahn 1000 Vacuum Electrobalance. See references in field 18.
3) Surface Viscoelasticity data. These measurements have been performed with a Time Resolved Surface Viscoelastometer build in our laboratory (see references in field 18). The surface thermodynamic parameters are reported in the publications, the complete measurements are available in our laboratory. These data are available in the following papers:

Loglio, G., Degli Innocenti, N., Tesei, U., Stortini, A.M., Cini, R.
"Surfactant and Particulated Matter Exchange at the air-water Interface in Antarctic Environment". Ann. Chim. Rome, 79, 571-587, 1989.

Loglio, G., Degli Innocenti, N., Stortini, A.M., Tesei, U., Mittner, P., Cini, R., Selective transport Phenomena at the Air-Water Interface on Coastal Antarctic Surface Water: Time Variability, Meeting "Environmental Impact in Antarctica" Rome 8-9 June 1990, Proceedings, 95-102, 1990.

We will be glad to send reprints upon request.
The data referred to 1980-90 campaign are present in a paper submitted to Ann. Chim. - Rome; the collection and elaboration of 1990-91 data are in progress.

REFERENCES:

Nyquist, G., Investigation of some optical properties of sea water with special reference to lignin sulfonates and humic substances. Ph. D. Thesis, Department of analytical and marine chemistry, Goteborg University, 1979.

Pocklington, R., Chemical processes and interactions involving marine organic matter. Mar. Chem., 5, 479-496, 1977.

Loglio, G., Tesei, U. and Cini, R., Dissolved organic compounds in marine waters: characterization of adsorption processes by means of surface dilatational properties, Boll. Oceanol. Teor. Appl. 4, 91-96, 1986.

Measurements of interfacial dilatational properties: a software-driven apparatus, Rev. Sci. Instr., 59, 2045-2050, 1988.

Spectral data of surface viscoelastic modulus acquired via Digital Fourier Transformation, J. Colloid Interface Sci., 71, 316-320, 1979.

Loglio, G., Tesei, U., Marilli, G., Ricci, C., Ieraci, G. and Cini, R., Physico-chemical aspects in the formation, enrichment and transfer of particulate matter in marine environment. III Nat. Conf. S.I.T.E., Siena, October 21-24 1987. In: S.I.T.E., Proceedings 7, (G. Montalenti, A. Renzoni, A. Anelli eds.), 619-624, 1987.

Title: "Cardiovascular adaptation in the Antarctic fishes"

Parameters: BIOLOGICAL ENTITIES > OCEAN WILDLIFE

Discipline: EARTH SCIENCE > OCEAN

Keywords: ROSS SEA
SOUTH ORKNEY ISLANDS
ICEFISHES
HEART
NOTOTHENIOIDS
COMPARATIVE CARDIOLOGY
CIRCULATION
FISHES
COMPARATIVE PHYSIOLOGY
ADAPTATION
ATRIAL NATRIURETIC PAPTIDES
AUTORADIOGRAPHY

Sensors: TEMSC > ELECTRON MICROSCOPE, TRANSMISSION
SEMSC > ELECTRON MICROSCOPE, SCANNING
HPA > HEART PERFUSION APPARATUS
PTRD > PRESSURE TRANSDUCER
BFW > BLOOD FLOWMETER
REC > CHART RECORDER
IMAN > IMAGE ANALYZER SYSTEM

Sources: BTN > GROUND STATION, TERRA NOVA BAY STATION
CSUDBC > DEPT. OF CELLULAR BIOLOGY, CS

Location: ANTARCTICA

Coverage:

Data Center: CSUDBC > DEPT. OF CELLULAR BIOLOGY, CS

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Storage Medium: CHART RECORDS
VOLUME PRINTED TABLES
VOLUME TEM AND SEM AND AUTORADIOGRAPHIC PHOTOS

Dates: Start
1982-01-01

Stop

Revision
1992-05-31

Science Rev

Future Rev

PNRA > Programma Nazionale di Ricerche in Antartide

PNRA-82

"Cardiovascular adaptation in the Antarctic fishes"

SUMMARY: This data set contains:

- 1) Ultrastructural data obtained by TEM and SEM of heart ventricle and bulbus from two species of the hemoglobinless icefish: *Chaenocephalus aceratus* and *Chionodraco hamatus* and the Notothenioid *Pagotenia bernacchi*. *C. aceratus* and *P. bernacchi* data are part of a common research project with prof. I.A. Johnston (Gatty Marine Lab., St Andrews, Scotland) and coworkers. Sampling during the summer from the South Orkney Island (courtesy of the British Antarctic Survey). *C. hamatus* data are part of a PNRA project (Unità Operativa Università della Calabria). Sampling during summer at Ross sea during the 5th (1989/90) Italian Antarctic Expeditions. These data allows a characterization of the ultrastructural basis of the cardiomegaly typical of these fish. Morphometric parameters (mitochondrial-myofibrils ratio) have been derived from this set of data.
- 2) Autoradiographic data describing ANF receptor distribution in ventricle and bulbus from *C. aceratus*. Sampling during summer at Ross Sea during the 5th (1989-90) and 6th (1990-91) Italian Antarctic Expeditions. These data are in the form of autoradiograms which have been analyzed with a Zeiss "IBAS 2000" image analyzer system to convert relative optical densities to fmol/mg wet tissue. These data demonstrate for the first time the existence of ANP receptors in the icefish heart, particularly in the bulbus.
- 3) Physiological data on the isolated and perfused *C. hamatus* heart, collected during the 5th Italian Antarctic Expedition. For the perfusion a specific apparatus set up in labs of the our Operative Unit (Unità Operativa Università della Calabria-PNRA) has been used. These data are subdivided in:
 - a) RHV (heart mass/body mass x100) and RVW (ventricle mass/body mass x100).
 - b) Heart performance parameters (heart rate, stroke volume, cardiac output, stroke work, power output) at variable preload (ranging from -0.06 to -0.04 kPa).
 - c) Heart performance parameters (see point b) at variable afterload (ranging from 2.2 to 3.8 kPa).
 - d) Heart performance parameters (see point b) at variable temperature (ranging from 0.4 to 5.8°C).The data indicated in the points b and c define the characteristics of the icefish heart as a volume pump.

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Title: "Micology of the soil. Mycoflora of the Victoria Land"

Parameters: BIOLOGICAL ENTITIES > MICROORGANISMS

Discipline: EARTH SCIENCE > LAND

Keywords: WOOD BAY
NORTH EDMONDSON POINT
SOUTH EDMONDSON POINT
TERRA NOVA BAY
CAREZZA LAKE
INEXPRESSIBLE ISLAND
BAKER ROCKS
DRY VALLEYS
BEACON VALLEY
UNIVERSITY VALLEY
TETHYS BAY
PENGUIN BAY
VEGETATION ISLAND
ICARO CAMP
CAPE SASTRUGI
MOUNT MELBOURNE
CRYPTOGAM RIDGE
BIOLOGY
BOTANY
ECOLOGY
MYCOFLORA
MICROFUNGI
COMMUNITY
DEGRADATION

Sensors: STI > STERILE INSTRUMENTS FOR SAMPLING
STM > STERILE MATERIALS FOR ISOLATION
AMSC > MICROSCOPE FOR SPECIMENS ANALYSIS
IDMSC > MICROSCOPE FOR SPECIES IDENTIFICATION
HBK > SPECIES IDENTIFICATION HANDBOOK

Sources: BTN > GROUND STATION, TERRA NOVA BAY STATION

Location: ANTARCTICA

Coverage: Minimum Latitude: 77S
Maximum Latitude: 72S
Minimum Longitude: 160E
Maximum Longitude: 166E

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Storage Medium: MAGNETIC DISK
PRINTED PAPER
TYPED PAPER

Dates: Start
1987-10-31

Stop

Revision
1992-05-31

Science Rev

Future Rev

PNRA > Programma Nazionale di Ricerche in Antartide

PNRA-83

"Micology of the soil. Mycoflora of the Victoria Land"

SUMMARY: The aim of the Program is to investigate on the mycoflora of the Victoria Land and possible associations with the bryophytic flora; moreover, it is to investigate on the temperature requirements and ecological role of the fungal species, on the rate of organic matter degradation and on the predaceous and parasite fungi. The presence microbiological life in environments that are not colonized by primary producers, like mosses and lichens, is also investigated. Morphological structures of microfungi and their relations with natural substrate are analyzed by SEM. Isolated strains are lyophilized and stored. The isolated species of microfungi belong to three classes in Ascomycotina and two in the Deuteromycotina. Some species, as *Byssoclamyx nivea* and *Polycoccum* sp. in the Ascomycotina, and *Acremonium charticola* in Deuteromycotina are new records for the Continental Antarctica. *Arthrobotrys ferox* is a new species.

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"Mycology of the soil. Mycoflora of the Victoria Land"

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Title: "Organic micropollutants (PAH) determinations in airborne particulate matter at the Antarctic Italian Base - Terra Nova Bay Station"

Parameters: ATMOSPHERIC COMPOSITION > TRACE ELEMENTS
ATMOSPHERIC COMPOSITION > CONTAMINANTS

Discipline: EARTH SCIENCE > ATMOSPHERE

Keywords: TERRA NOVA BAY
POLLUTANTS
POLLUTION
TRACE ELEMENTS
PAH
ATMOSPHERE

Sensors: HVSMP > SAMPLER, HIGH VOLUME
HPLC > LIQUID CHROMATOGRAPH, HIGH PERFORMANCE
GC > GAS CHROMATOGRAPH
MS > MASS SPECTROMETER

Sources: BTNISL > SKUA LAKE, TERRA NOVA BAY INLAND
BTN > GROUND STATION, TERRA NOVA BAY STATION

Location: ANTARCTICA

Coverage: Minimum Latitude: 75S
Maximum Latitude: 75S
Minimum Longitude: 164E
Maximum Longitude: 164E

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Storage Medium: PAPER

Dates: Start
1989-12-31

Stop

Revision
1992-05-31

Science Rev

Future Rev
1993-05-31

PNRA > Programma Nazionale di Ricerche in Antartide

PNRA-84

"Organic micropollutants (PAH) determinations in airborne
particulate matter at the Antarctic Italian Base - Terra Nova Bay Station"

SUMMARY: Airborne particulate matter has been sampled and analyzed to determine the organic micropollutant contents (PAH).
Data related to the following expeditions are available: 1986-87, 1987-88, 1988-89.
Data elaborations related to the expeditions 1989-90, 1990-91 are in progress.
A systematic study of PAH started during the campaign 1990-91.
Samples were analysed by HPLC for PAH.
Accuracy and precision depend on the methodology adopted and are related to the low concentration levels. Concentrations are expressed in weight/volume.

REFERENCES:

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Title: "Determination of cosmogenic, natural and fallout radionuclides in the Antarctic environment and application of radiodating models"

Parameters: ATMOSPHERIC COMPOSITION > CONTAMINANTS
GEOLOGICAL PARAMETERS > AGE DETERMINATIONS
GEOLOGICAL PARAMETERS > GEOCHEMICAL ANALYSIS
GEOLOGICAL PARAMETERS > SOILS
ATMOSPHERIC COMPOSITION > AEROSOLS

Discipline: EARTH SCIENCE > LAND
EARTH SCIENCE > ATMOSPHERE
EARTH SCIENCE > OCEAN

Keywords: TERRA NOVA BAY
ENVIRONMENTAL IMPACT
RADIONUCLIDES
ENVIRONMENT
SNOW
ICE
CHEMISTRY
RADIOISOTOPES
RADIOACTIVE TRACERS
GEOCHRONOLOGY
LAKE SEDIMENTS
SOIL

Sensors: GAMMAS > GAMMA SPECTROMETER
ALPHAS > ALPHA SPECTROMETER

Sources: BTN > GROUND STATION, TERRA NOVA BAY STATION

Location: ANTARCTICA

Coverage: Minimum Latitude: 74S
Maximum Latitude: 78S
Minimum Longitude: 163E
Maximum Longitude: 165E

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Storage Medium: MAGNETIC DISKS

Dates: Start
1987-12-15

Stop

Revision
1992-05-31

Science Rev

Future Rev
1993-05-31

PNRA > Programma Nazionale di Ricerche in Antartide

PNRA-85

"Determination of cosmogenic, natural and fallout radionuclides in the Antarctic environment and application of radiodating models"

SUMMARY: This data set includes activity data of ^{137}Cs , Uranium and Thorium series grand-daughters, ^{40}K from sea-bottom sediments, lake sediments and soil in samples collected in the area surrounding the Italian Antarctic base at Terra Nova Bay. The vertical distribution and the "Inventory" of ^{137}Cs have been evaluated in the soil pits and lake sediment cores of the same area.

REFERENCES:

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Title: "Atmospheric trace components (H2, CO, CO2) in polar areas
(Antarctica, Greenland)"

Parameters: ATMOSPHERIC COMPOSITION > CARBON DIOXIDE
ATMOSPHERIC COMPOSITION > TRACE GASES

Discipline: EARTH SCIENCE > ATMOSPHERE

Keywords: CARBON MONOXIDE
HYDROGEN
CARBON DIOXIDE
TROPOSPHERIC CHEMISTRY

Sensors: GC > GAS CHROMATOGRAPH
RGDTC > REDUCED GAS DETECTOR
IDTC > FLAME IONIZATION DETECTOR

Sources: OASI > ASTRONOMICAL STATION, TERRA NOVA BAY STATION

Location: ANTARCTICA
TROPOSPHERE

Coverage: Minimum Latitude: -74
Maximum Latitude: -74
Minimum Longitude: +164
Maximum Longitude: +164

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Storage Medium: MAGNETIC DISKS

Dates: Start
1990-01-08

Stop

Revision
1992-05-31

Science Rev

Future Rev
1993-05-31

PNRA > Programma Nazionale di Ricerche in Antartide

PNRA-86

"Atmospheric trace components (H₂, CO, CO₂) in polar areas
(Antarctica, Greenland)"

SUMMARY: Atmospheric trace components (H₂, CO, CO₂) were measured at the Italian "Terra Nova Bay" station (Antarctica) during the 1989-90 austral summer (Jan 8 - Feb 10), at three hour intervals, by an automatized gas-chromatograph equipped with RGD detector (for H₂ and CO), and by another GC with methanizer and FID ppbv and 354±3 ppbv respectively) are representative of the worldwide ones, reflecting their long lifetimes. CO is low (short lifetime) and comparable with high latitude, open sea, results (average 55±2 ppbv), with concentrations depending of origin of air masses: 51±2 ppbv for continental air, and 63±8 ppbv for sea-related air. These values are the result of a statistical treatment of analytical results, yielding a significant difference. Peak areas were obtained as the difference between experimental heights at 3 sec intervals and the best polynomial equation (left free to change its degree until R² > 99.9) fitting the experimental points of the baseline. The zero-baseline peak is then integrated by means of a cubic spline interpolation through the experimental points. The concentration found for all this components are close to the few available data for remote areas like oceans and Antarctica; in this work a one month span was scanned at short intervals (3 hours), and analysis were carried out in situ without any sample storage. The results obtained in the 1989-90 campaign can be considered a present background for the whole atmosphere, with implications regarding the atmospheric budget and circulation, in a period of artificial global changes. Analytical results are available on one floppy disk 3.5", 1.4 Mbyte ASCII files.

REFERENCES:

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Title: "Geophysical survey in the Ross sea"

Parameters: GEODYNAMIC FEATURES > MAGNETIC FIELDS
GEODYNAMIC FEATURES > GRAVITY FIELDS
GEODYNAMIC FEATURES > SEISMIC
GEOLOGICAL PARAMETERS > STRATIGRAPHY

Discipline: EARTH SCIENCE > INTERIOR AND CRUST
EARTH SCIENCE > OCEAN

Keywords: ROSS SEA
SEISMIC SURVEY
GEOPHYSICS

Sensors: ASTR1 > ANALOGIC STREAMER, PRAKLA
MSMREC1 > MULTICHANNEL SEISMIC RECORDER, SERCEL 358
BGV1 > GRAVIMETER BODENSEEWERK, KSS30
GMG1 > MAGNETOMETER GEOMETRICS, G801-803

Sources: RVOGS > RESEARCH VESSEL, OGS EXPLORA

Location: ANTARCTICA

Coverage: Minimum Latitude: 77S
Maximum Latitude: 72S
Minimum Longitude: 164W
Maximum Longitude: 174E

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Storage Medium: 460 MAGNETIC TAPES, 60 GB

Dates: Start
1988-01-26

Stop
1988-03-08

Revision
1992-05-31

Science Rev

Future Rev
1993-05-31

PNRA > Programma Nazionale di Ricerche in Antartide

PNRA-87

"Geophysical survey in the Ross sea"

SUMMARY: The collected informations consist in multichannel seismic lines, magnetic and gravimeter profiles.

The six lines (for a total of 2.300 Km.) were acquired with the following parameters:

- Streamer type : Analogic
- NR. of active groups : 96
- Arrey type : tuned airgun
- Active length : 3000 m.
- Total arrey volume : 45.16 l
- Operating pressure : 140 bars
- Total guns number : 28
- Firing interval : 50 m and 75 m
- Sampling rate : 2 m/sec and 4 m/sec.
- Record length : 16 sec. and 24 sec.
- Nominal fold : 2400%

At the completion of the survey, all the data have been brought to the OGS data processing to be processed and analyzed. Further informations may be obtained from Mr. Giuliano Brancolini at OGS. Due to amount of collected data, these are stored on tapes that may be addressed following the names of the seismic lines to which they belong. Presently each entry in the data base refers to a complete geophysical campaign performed by OGS utilizing its research vessel OGS-Explora. During the first revision, all the informations will be further detailed and referred to the specific seismic lines.

REFERENCES:

Berger, P., Brancolini, G., De Cillia, C., Gantar, C., Marchetti, A., Nieto, D. and Ramella, R., Acquisition, processing, and preliminary results of the Antarctic 1987-88 Geophysical Survey, Memorie della Societa' Geologica italiana.

Title: "Geophysical survey in the South Pacific Ocean and in the Ross sea"

Parameters: GEODYNAMIC FEATURES > MAGNETIC FIELDS
GEODYNAMIC FEATURES > GRAVITY FIELDS
GEODYNAMIC FEATURES > SEISMIC
GEOLOGICAL PARAMETERS > STRATIGRAPHY

Discipline: EARTH SCIENCE > INTERIOR AND CRUST
EARTH SCIENCE > OCEAN

Keywords: ROSS SEA
SEISMIC SURVEY
GEOPHYSICS
SOUTH PACIFIC OCEAN

Sensors: ASTR1 > ANALOGIC STREAMER, PRAKLA
MSMREC1 > MULTICHANNEL SEISMIC RECORDER, SERCEL 358
BGV2 > GRAVIMETER BODENSEEWERK, KSS31
GMG1 > MAGNETOMETER GEOMETRICS, G801-803

Sources: RVOGS > RESEARCH VESSEL, OGS EXPLORA

Location: ANTARCTICA
PACIFIC OCEAN

Coverage: Minimum Latitude: 77S
Maximum Latitude: 60S
Minimum Longitude: 152W
Maximum Longitude: 165E

Data Center: TSAOGS > OBSERVATORY FOR EXPER. GEOPHYSICS, TS

Originating_Center: TSAOGS

Data Center Contact: D'Adamo
Gloria

Investigator: Persoglia
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Storage Medium: 1500 MAGNETIC TAPES, 196 GB
4000 MAGNETIC TAPES

Dates: Start
1988-12-10

Stop
1989-02-27

Revision
1992-05-31

Science Rev

Future Rev
1993-05-31

PNRA > Programma Nazionale di Ricerche in Antartide

PNRA-88

"Geophysical survey in the South Pacific Ocean and in the Ross sea"

SUMMARY: The collected informations consist in multichannel seismic lines, magnetic and gravimeter profiles.

The 37 lines (for a total of 7.156 Km.) were acquired with the following parameters:

-Streamer type	: Analogic
-NR. of active groups	: 120
-Active length	: tuned airgun
-Arrey type	: 3000 m.
-Total arrey volume	: 45.16 l
-Operating pressure	: 140 bars
-Total guns number	: 28
-Firing interval	: 50 m.
-Sampling rate	: 4 m/sec.
-Record length	: 16 sec.
-Nominal fold	: 3000%

At the completion of the survey, all the data have been brought to the OGS data processing to be processed and analyzed. Further informations may be obtained from Mr. Giuliano Brancolini at OGS. Due to amount of collected data, these are stored on tapes that may be addressed following the names of the seismic lines to which they belong. Presently each entry in the data base refers to a complete geophysical campaign performed by OGS utilizing its research vessel OGS-Explora. During the first revision, all the informations will be further detailed and referred to the specific seismic lines.

REFERENCES:

Berger, P., Brancolini, G., De Cillia, C., Fanzutti, F., Gantar, C., Lodolo, E., Marchetti, A., Nieto, D., Persoglia, S., Pipan, M., Ramella, R. and Rodà, C., Acquisizione, processing e risultati preliminari della campagna geofisica in Antartide 1988-1989. Atti dell'8. Convegno Nazionale G. N. G. T. S.

Brancolini, G., Fais, S., Gantar, C., Lodolo, E. and Zanolla, C., 1989, Ross Sea geophysical study: two integrated sections, bollettino di geofisica teorica ed applicata.

Brancolini, G., Gantar, C., Lodolo, E. and Marchetti, A., 1991, Acquisition processing and preliminary results of the 1988-1989 antarctic Geophysical Survey. Mem. Soc. Geol. It., 46 pp. 543-560.

Title: "Geophysical survey in the Weddell, Admunsen and Bellingshausen
Seas, in the South Pacific Ocean and in the Ross sea"

Parameters: GEODYNAMIC FEATURES > MAGNETIC FIELDS
GEODYNAMIC FEATURES > GRAVITY FIELDS
GEODYNAMIC FEATURES > SEISMIC
GEOLOGICAL PARAMETERS > STRATIGRAPHY

Discipline: EARTH SCIENCE > INTERIOR AND CRUST
EARTH SCIENCE > OCEAN

Keywords: ROSS SEA
WEDDELL SEA
AMUNDSEN SEA
BELLINGSHAUSEN SEA
SEISMIC SURVEY
GEOPHYSICS
SOUTH PACIFIC OCEAN

Sensors: ASTR1 > ANALOGIC STREAMER, PRAKLA
MSMREC1 > MULTICHANNEL SEISMIC RECORDER, SERCEL 358
BGV2 > GRAVIMETER BODENSEEWERK, KSS31
GMG1 > MAGNETOMETER GEOMETRICS, G801-803
GMG2 > MAGNETOMETER GEOMETRICS, G811

Sources: RVOGS > RESEARCH VESSEL, OGS EXPLORA

Location: ANTARCTICA
PACIFIC OCEAN

Coverage: Minimum Latitude: 78S
Maximum Latitude: 59S
Minimum Longitude: 35W
Maximum Longitude: 163E

Data Center: TSAOGS > OBSERVATORY FOR EXPER. GEOPHYSICS, TS

Originating Center: TSAOGS

Data Center Contact: D'Adamo
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Investigator: Persoglia
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Author: Nieto
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Storage Medium: 1670 MAGNETIC TAPES, 218 GB
4000 MAGNETIC TAPES

Dates: Start
1989-11-26

Stop
1990-02-28

Revision
1992-05-31

Science Rev

Future Rev
1993-05-31

PNRA > Programma Nazionale di Ricerche in Antartide

PNRA-89

"Geophysical survey in the Weddell, Admunsen and Bellingshausen Seas, in the South Pacific Ocean and in the Ross sea"

SUMMARY: The collected informations consist in multichannel seismic lines, magnetic and gravimeter profiles.

The 53 lines (for a total of 7.347 Km.) were acquired with the following parameters:

-Streamer type	: Analogic
-NR. of active groups	: 120
-Active length	: tuned airgun
-Arrey type	: 3000 m.
-Total arrey volume	: 45.16 l
-Operating pressure	: 140 bars
-Total guns number	: 28
-Firing interval	: 50 m.
-Sampling rate	: 4 m/sec.
-Record length	: 14 sec.
-Nominal fold	: 3000%

At the completion of the survey, all the data have been brought to the OGS data processing to be processed and analyzed. Further informations may be obtained from Mr. Giuliano Brancolini at OGS. Due to amount of collected data, these are stored on tapes that may be addressed following the names of the seismic lines to which they belong. Presently each entry in the data base refers to a complete geophysical campaign performed by OGS utilizing its research vessel OGS-Explora. During the first revision, all the informations will be further detailed and referred to the specific seismic lines.

REFERENCES:

Brancolini, G., Fais, S., Lodolo, E., Persoglia, S. and Vesnaver, A., 1990, Analisi integrata di Anomalie sismo-stratigrafiche e strutturali nel mare di Ross occidentale - Antartide. Atti Convegno Nazionale G.N.G.T.S.

Title: "Geophysical survey in the South Pacific Ocean and in the Ross sea"

Parameters: GEODYNAMIC FEATURES > MAGNETIC FIELDS
GEODYNAMIC FEATURES > GRAVITY FIELDS
GEODYNAMIC FEATURES > SEISMIC
GEOLOGICAL PARAMETERS > STRATIGRAPHY

Discipline: EARTH SCIENCE > INTERIOR AND CRUST
EARTH SCIENCE > OCEAN

Keywords: ROSS SEA
WEDDELL SEA
STRATIGRAPHY
GEODYNAMICS
GEOTECTONICS
GEOPHYSICS
SOUTH PACIFIC OCEAN
GEOMAGNETISM
GRAVITY

Sensors: ASTR1 > ANALOGIC STREAMER, PRAKLA
MSMREC1 > MULTICHANNEL SEISMIC RECORDER, SERCEL 358
BGV2 > GRAVIMETER BODENSEEWERK, KSS31
GMG1 > MAGNETOMETER GEOMETRICS, G801-803
GMG2 > MAGNETOMETER GEOMETRICS, G811

Sources: RVOGS > RESEARCH VESSEL, OGS EXPLORA

Location: ANTARCTICA
PACIFIC OCEAN

Coverage: Minimum Latitude: 73S
Maximum Latitude: 56S
Minimum Longitude: 36W
Maximum Longitude: 150E

Data Center: TSAOGS > OBSERVATORY FOR EXPER. GEOPHYSICS, TS

Originating Center: TSAOGS

Data Center Contact: D'Adamo
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Storage Medium: 1080 MAGNETIC TAPES, 141 GB

Dates: Start
1990-12-17

Stop
1991-03-15

Revision
1992-05-31

Science Rev

Future Rev
1993-05-31

PNRA > Programma Nazionale di Ricerche in Antartide

PNRA-90

"Geophysical survey in the South Pacific Ocean and in the Ross sea"

SUMMARY: The collected informations consist in multichannel seismic lines, magnetic and gravimeter profiles.

The 53 lines (for a total of 7.347 Km.) were acquired with the following parameters:

-Streamer type	: Analogic
-NR. of active groups	: 120
-Active length	: tuned airgun
-Arrey type	: 3000 m.
-Total arrey volume	: 45.16 l
-Operating pressure	: 140 bars
-Total guns number	: 28
-Firing interval	: 50 m.
-Sampling rate	: 4 m/sec.
-Record length	: 14 sec.
-Nominal fold	: 3000%

At the completion of the survey, all the data have been brought to the OGS data processing to be processed and analyzed. Further informations may be obtained from Mr. Giuliano Brancolini at OGS. Due to amount of collected data, these are stored on tapes that may be addressed following the names of the seismic lines to which they belong. Presently each entry in the data base refers to a complete geophysical campaign performed by OGS utilizing its research vessel OGS-Explora. During the first revision, all the informations will be further detailed and referred to the specific seismic lines.

REFERENCES:

Brancolini, G. and Davey, F., 1991, Analisi di siti per l'ubicazione di sondaggi nel mare di Ross. (Antartide).

De Santis, L., Busetti, M., De Cillia, C., Polonia and A., Rebesco, M., 1991, Sequenze sismiche sul margine continentale del mare di Ross (Antartide). Atti del 10. Convegno G.N.G.T.S.

Lodolo, E. and Christoffel, D.A., 1991, Studio geofisico della dorsale Australo-Antartica a sud del 60. parallelo. Atti del 10. Convegno G.N.G.T.S.

Marchetti, A., Baroni, C., Gantar, C., Orombelli, G. and Stefanon, A., 1991, Caratteristiche morfologiche del mare di Ross (Antartide). Atti del 10. Convegno G.N.G.T.S.

Marchetti, A., Gantar, C., Lodolo, E., Orombelli, G. and Stefanon, A., 1991, Sea bottom morphology of the Ross sea area antarctica. Proceedings of 6th International Symposium on Antarctic Earth Sciences, Tokio.

Marchetti, A., Baroni, C. and Gantar, C., Postpiscal, 1991, Triplejunction Point Area: Results of the first three OGS geophysical surveys. Proceedings of 6th International Symposium on Antarctic Earth Sciences, Tokio.

Title: "Trace metals distribution in particulate matter and sediment"

Parameters: OCEAN COMPOSITION > SEDIMENTS
OCEAN COMPOSITION > TRACE ELEMENTS

Discipline: EARTH SCIENCE > LAND
EARTH SCIENCE > OCEAN

Keywords: ROSS SEA
SEA WATER
PARTICULATE MATTER
SEDIMENT
HEAVY METALS
SPECTROCHEMISTRY
ANALYTICAL CHEMISTRY
ENVIRONMENTAL IMPACT

Sensors: AASM > ATOMIC ABSORPTION SPECTROMETER
HPLC > LIQUID CHROMATOGRAPH, HIGH PERFORMANCE
ICP > INDUCTIVELY COUPLED PLASMA

Sources: BTN > GROUND STATION, TERRA NOVA BAY STATION

Location: ANTARCTICA

Coverage: Minimum Latitude: 60S
Maximum Latitude: 75S
Minimum Longitude: 162E
Maximum Longitude: 179E

Data Center: GEUICGI > DEPT. OF GENERAL INORGAN. CHEMSTR., GE

Originating Center: GEUICGI

Data Center Contact: Frache
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Investigator: Frache
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Storage Medium: Paper

Dates: Start
1987-12-01

Stop

Revision
1992-05-31

Science Rev

Future Rev

PNRA > Programma Nazionale di Ricerche in Antartide

PNRA-91

"Trace metals distribution in particulate matter and sediment"

SUMMARY: Trace metals distribution in sea water, particulate matter and sediments were examined during the Italian Antarctic expedition in 1987-88, 1988-89 and 1989-90. The samples of sediments were collected both offshore (Ross Sea) and in shore (Terra Nova Bay); Then Cu, Pb, Zn, Cd, Cr, Ni, Co and Mn together with some major elements (Fe and Al) were analyzed (using three different selective methods of solubilization and total attack) by ICP-AES and AAS-ETA. The samples of sea water were collected at different depths both offshore and inshore in Ross Sea. Sea water was filtered and after chelex-100 preconcentration it was analyzed by AAS-ETA for the following elements: Cu, Cd, Fe and Ni. Cd, Ni, Fe, Cr, Cu and Al were analyzed in suspended particulate samples collected in the above mentioned stations and analyzed by ICP-AES.

REFERENCES:

Mazzucotelli, A., Cosma, B. and Soggia, F., Trace metals distribution in Antarctic sediments (Terra Nova Bay - Ross Sea) by inductively coupled plasma emission spectroscopy, *Annali di Chimica*, 79, 617-628, 1989.

Baffi, F., Soggia, F., Frache, R. and Cardinale, A., Distribution of heavy metals in the water and in suspended particulate matter in the Ross Sea (Antarctica), *Annali di Chimica*, 79, 607-616, 1989.

Cosma, B., Frache, R. Mazzucotelli, A. and Soggia, F., Trace metals in sediments from Terra Nova Bay Ross Sea (Antarctica), *Annali di Chimica*, 81, 371-381, 1991.

Baffi, F., Cardinale, A., Soggia, F. and Frache, R., Heavy metals distribution in suspended matter in coasta and offshore waters in Ross Sea (Antarctica), *Annali di Chimica*, 91, 523-531, 1991.

Title: "OASI - Infrared and Submillimetric Antarctic Observatory"

Parameters: RADIANCE AND IMAGERY > INFRARED
RADIANCE AND IMAGERY > MICROWAVE
ASTRONOMICAL PARAMETERS > PHOTOMETRY

Discipline: EARTH SCIENCE > ATMOSPHERE
ASTRONOMY > INFRARED ASTRONOMY
ASTRONOMY > MICROWAVE ASTRONOMY

Keywords: COSMOLOGY
SUBMILLIMETER ASTRONOMY
ASTROPHYSICS
INTERSTELLAR DUST
MAGELLANIC CLOUDS

Sensors: HE3B > HE3 BOLOMETERS

Sources:

Location: ANTARCTICA
EXTENDED OBJECTS (ASTRONOMY)
INTERSTELLAR MEDIUM
LOCAL GROUP OF GALAXIES
MILKY WAY GALAXY

Coverage: Minimum RA: 4H
Maximum RA: 18H
Minimum Dec: 75S
Maximum Dec: 59S

Originating Center: RMU1DFIS

Data Center: RMU1DFIS > DEPT. OF PHYSICS, RM1

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Author: Pizzo
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FAX : +39 6 4957697

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P.le Aldo Moro 2
I-00185 Roma (ITALY)

Storage Medium: MAGNETIC TAPES

Dates: Start
1986-03-01

Stop

Revision
1992-05-31

Science Rev

Future Rev
1993-05-31

PNRA > Programma Nazionale di Ricerche in Antartide

PNRA-92

"OASI - Infrared and Submillimetric Antarctic Observatory"

SUMMARY: During the early phase of the Italian Program for Antarctic Research, an astronomical Observatory has been built close to the Terra Nova Bay Station (Lat: 74° 41' .61S, Long: 164° 06' .89E). The Observatory is equipped with a 2.5 m submm-telescope in an altazimuthal mounting, equipped with He3 bolometers. Research goal concerns:

- * the detection of CBR anisotropies in the range of submillimetric wavelengths
- * observation of Magellanic Clouds and diffuse Galactic emission
- * submillimetric map of the Southern-Sky.

Main results till now obtained are published in the references. Rough data may be obtained on request.

REFERENCES:

- Piccirillo, L., Andreani, P., Dall'Oglio, G., Martinis, L., Pizzo, L., Rossi, L. and Venturino, C., (1988), Search for CBR Anisotropies and Observations of the Magellanic Clouds at Millimetric Wavelengths. 3rd ESO-CERN Symposium on Astronomy, Cosmology and Fundamental Physics. Bologna (Italy), May 16-20. Conf. Abstr., 155, 456.
- Andreani, P., Dall'Oglio, G., Di Bari, M., Martinis, L., Piccirillo, L., Pizzo, L., and Santillo, L., (1989), CBR Anisotropy and Galactic Emission Observations from Antarctica. AIP Conf. Proc. 198 "Astrophysics in Antarctica", Newark, Delaware (USA). Mullan D.J., Pomerantz M.A., Stanev T. (eds), 79.
- Andreani, P., Ceccarelli, C., Dall'Oglio, G., Martinis, L., Piccirillo, L., Pizzo, L., Rossi, L. and Venturino, C., (1990), Millimeter Observations of Magellanic Clouds. The Astrophysical J., 348, 467.
- Andreani, P., Dall'Oglio, G., Martinis, L., Piccirillo, L., Pizzo, L., and Rossi, L., (1990), CBR Anisotropy and Cold Dust Observations from Antarctica. 3rd Nat. Meeting of Infrared Astronomy, Gallipoli (Italy), September 1989 Mem. S. A. It., 61, 169.
- Andreani, P., Dall'Oglio, G., Martinis, L., Piccirillo, L., Pizzo, L., and Rossi, L., (1990), Millimetric Flux Densities as a Test of Atmospheric Turbulence. Infrared Physics, 30, 479.
- Calisse, P., Dall'Oglio, G., Di Bari, M., Iacoangeli, A., Martinis, L., Merluzzi, P., Piccirillo, L., Pizzo, L., and Rossi, L. and Santillo, C., (1990), The OASI Observatory in Antarctica. Proc. 29th Liege Int. Astrophysical Colloquium "From Ground-based to Space-born Sub-mm Astronomy", Liege (Belgium), July 3-5. ESA SP-314, 311.
- Andreani, P., Dall'Oglio, G., Martinis, L., Piccirillo, L., Pizzo, L., Rossi, L. and Venturino, C., (1991), Diffuse Galactic emission at millimetric wavelengths. The Astrophysical J., 375, 171.
- Andreani, P., Ceccarelli, C., Dall'Oglio, G., Martinis, L., Piccirillo, L., Pizzo, L., Rossi, L. and Venturino, C., (1991), Are the intermediate scale CBR anisotropies constrained from thermal emission of a very cold dust? Astronomy and Astrophysics, 249, 299.
- Dall'Oglio, G., Pizzo, L., Piccirillo, L. and Martinis, L., (1991), A new He3 refrigerator. Cryogenics, 31, 61.
- Dall'Oglio, G., Ade, P., Calisse, P., Iacoangeli, A., Martinis, L., Piccirillo, L. and Rossi, L., (1991), The Italian OASI Observatory XXVI Rencontres de Moriond, Proc. XI Moriond Astrophysics Meeting "The early Observable Universe from Diffuse Backgrounds", Les Arcs, Savoie, France, 10-17 March.
- Dall'Oglio, G., (1991), Italian Observatory in Antarctica. The Infrared and Submillimetric OASI Telescope. XXI General Assembly IAU, Buenos Aires, Argentina, Jul. 23-Aug. 1.

Title: "Determination of chlorofluorocarbons and other volatile
chlorinated organic compounds in the troposphere"

Parameters: ATMOSPHERIC COMPOSITION > CHLOROFLUOROCARBONS Discipline: EARTH SCIENCE > ATMOSPHERE
ATMOSPHERIC COMPOSITION > TRACE GASES

Keywords: NORTH VICTORIA LAND
GLOBAL AIR POLLUTION
ENVIRONMENTAL IMPACT
CHLOROFLUOROCARBONS
TRACE ELEMENTS
TROPOSPHERE
OZONE DEPLETION

Sensors: GC > GAS CHROMATOGRAPH
ECDTC > ELECTRON CAPTURE DETECTOR
HRMS > MASS SPECTROMETER, HIGH RESOLUTION
PTB > CALIBRATION SYSTEM USING PERMEATION TUBES

Sources: OASI > ASTRONOMICAL STATION, TERRA NOVA BAY STATION
URUISC > INST. FOR CHEMICAL SCIENCES, UR

Location: ANTARCTICA

Coverage: Minimum Latitude: 74S
Maximum Latitude: 75S
Minimum Longitude: 162E
Maximum Longitude: 165E

Data Center: URUISC > INST. FOR CHEMICAL SCIENCES, UR

Originating Center: URUISC

Data Center Contact: Bruner
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"Determination of chlorofluorocarbons and other volatile
chlorinated organic compounds in the troposphere"

SUMMARY: This data set contains data on halocarbon concentration levels at Terra Nova Bay and other sampling sites in Northern Victoria Land obtained from December 1989 to February 1991. Measurements were carried out "in situ", by GC-ECD analysis of 50 mL of air sampled on line, and in the laboratory by GC-HRMS analysis of 1-2 L samples collected in Antarctica. These data are archived at the Institute of Chemical Sciences of the University of Urbino and copies are available without any restrictions.

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