



INTERDISCIPLINARY COMMUNICATIONS PROGRAM

• SMITHSONIAN INSTITUTION

1025 FIFTEENTH STREET, N.W. • SUITE 700 • WASHINGTON, D.C. 20005 • (202) 381-5577

M. C. SHELESNYAK, Ph.D., Director

Contract No. NSR-09-015-044

CASE FILE
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"ANNUAL" REPORT FOR PERIOD ENDING DECEMBER 31, 1970
[This Report Covers the Entire 15-Month Contract Year Beginning
10/01/69.]

A. CONFERENCES HELD IN THIS PERIOD

1) Population--

The Second Conference in this series was held October 26-29, 1969, at the Belmont Conference Center, Elkridge, Maryland, also under the Chairmanship of Professor Sir Solly Zuckerman, OM, KCB, FRS. The emphasis of this conference was on population regulation, including fertility control, by other than conventional family planning techniques. The Agenda and Participants List are attached as Appendix A.

The Third Conference in the Population series was held November 8 through 11, 1970, again at the Belmont Conference Center and under the Chairmanship of Sir Solly Zuckerman, OM, KCB, FRS, the Chief Scientific Advisor to the British Cabinet. This third conference centered on the theme governmental policies and ranged from constraints on effective population policies to a discussion of new strategies and how they could be implemented, and monitoring the effect of population policies. The international character of the group contributed heavily to a highly effective discussion of this topic. The actual Participants List and the Agenda are attached as Appendix B.

2) Space Technology Utilization--

The First Conference on Space Biosciences, or Space Technology Utilization, was held November 28 to 30, 1969, at Belmont, under the Chairmanship of Professor Joshua Lederberg. This conference focused on Health Services and Medical Practice. The overall objective of this new series is to create a better appreciation

and realization of the capabilities of the Space Program among biologists and ecologists, bio-medical and health service personnel, and professionals concerned with technical augmentation of instruction. See Appendix C for Agenda and List of Participants.

The Second Conference on Space Technology Utilization, subtitled "Improving the Quality of the Environment", was held April 28 to 30, 1970, at Belmont under the Chairmanship of Dr. Mark D. Hollis, Chief, Department of Engineering and Environmental Science, Pan American Health Organization in Washington, D.C. This conference dealt with the problems, particularly the damage to environmental quality, caused by the rapid population growth and accelerating technological advances in our urbanizing society. The Participants List and the Agenda for discussion are both attached hereto as Appendix D.

3) Origins of Life--

The Third Conference in the Origins of Life series was held February 27 to March 1, 1970, at the Santa Ynez Inn, Pacific Palisades, California, with Dr. Norman Horowitz as Chairman. Attention was focused on information obtained from the Apollo 11 lunar exploration and the Mars and Venus probes. Attached hereto as Appendix E is the final List of Participants and Agenda.

4) Other Conferences--

Further conferences in the Space Technology Utilization series as well as the initial conference in a new series on Biochronology, were also planned for the fall of 1970. Due to the impossibility of getting together the appropriate people within the firm dates that were still available at Belmont, these conferences were postponed until early 1971.

B. STATUS OF CONFERENCE PLANNING

- 1) The Fourth Conference on Population Growth scheduled for January 24-26, 1971, at Belmont will have a slightly different emphasis, specifically involved with information

transfer and communication. A detailed Agenda and Participants List are attached hereto as Appendix F.

- 2) The First Conference on Biochronology, a series that promises to be very exciting, has finally been set for February 7-10, 1971, at Belmont under the Chairmanship of Professor Colin S. Pittendrigh of Stanford University. Professor Pittendrigh and fellow participants Professor Juergen Aschoff of the Max-Planck-Institut of West Germany and Professor Michel Jouvet of France, are the pioneers and, in fact, the very top leaders in this new scientific field which deals with biological clocks. A complete List of Participants (no Agenda) is attached hereto as Appendix G.
- 3) The Fourth Conference on the Origins of Life series has been definitely set for April 13-16 at the Belmont Conference Center in nearby Maryland, with Dr. Stanley Miller and Dr. Leslie Orgel serving as Co-Chairmen. Major themes will be: New Prebiotic Syntheses, Contamination and Identification of Organic Compounds, Sources of Energy, Limitations Due to Instability of Organic Compounds, Geology and Atmospheric Constituents, and Organic Molecules in Interstellar Space.
- 4) In addition to formal conferences, a number of smaller, ad hoc meetings are contemplated in order to make preliminary investigations of additional subject matter and participants for possible future missions.

C. STATUS OF PUBLICATION OF CONFERENCE PROCEEDINGS

(For continuity, the information relevant to the preparation of manuscripts and to publication is cumulative, and includes changes in status during the contract period reported.)

In addition to the conference series listed below and funded through the contract here reported on (NSR-09-015-044), the ICP has seen to the publication of several other conferences which NASA earlier supported. This work has been carried out in accordance with letter dated October 14, 1968, addressed to ICP by the Bioscience Programs Division of NASA, and by

which ICP was requested to assume responsibility for publication of these proceedings. These include: Fifth Conference on Marine Biology, published in 1969; and Third Conference on Learning, Remembering and Forgetting, published early in 1970; and, the Fifth Conference on Cellular Dynamics, which had been completed and is ready for distribution. The ICP was able to handle publication of these proceedings without the benefit of NASA funds for that purpose, through collaboration with the Interdisciplinary Communication Associates, Inc.

Gordon & Breach, Science Publishers, New York, is continuing to publish and distribute the proceedings of conferences financed by the National Aeronautics and Space Administration, under commercial arrangements. Interdisciplinary Communication Associates, Inc., is now participating with ICP in the assumption of its publication responsibilities. The following report on the current status of the publication of various conference series is divided into, first, those series which have been concluded, and, secondly, those series which are ongoing. All of the ongoing series will have additional conferences during 1971.

Conference Series Completed

1) Information and Control Processes in Living Systems--

Scientific Editor: Dr. Diane M. Ramsey-Klee

- (a) First Conference. Published under title of "Molecular Coding Problems" in 1967.
- (b) Second Conference. Published under title of "Systems In Biological Communication" in 1970.
- (c) Third Conference. Scientific editing and ICP in-house copy editing almost completed.
- (d) Fourth Conference. Manuscript is being copy edited in ICP.
- (e) Fifth Conference. Manuscript is being copy edited in ICP.

2) Biology of Hard Tissue--

Scientific Editor: Dr. Ann M. Budy

- (a) First Conference. Published in 1967.
- (b) Second Conference. Edited by NASA and published by the GPO in 1968
- (c) Third Conference. Published in 1970.
- (d) Fourth Conference. Both scientific editing and in-house copy editing completed; ready for camera ready copy.
- (e) Fifth Conference. Manuscript ready for scientific editing.

Current Conference Series

1) Origins of Life--

Scientific Editor: Dr. Lynn Margulis

- (a) First Conference. At publisher, ready for printing.
- (b) Second Conference. Scientific and inhouse copy editing completed; manuscript ready for camera ready copy.
- (c) Third Conference. Manuscript is under review and condensation by scientific editor.

2) Population--

Scientific Editor: Dr. M. C. Shelesnyak

- (a) First Conference. Published under the title of "Growth of Population" in 1969.
- (b) Second Conference. Report on proceedings has been prepared and edited inhouse. Sir Solly Zuckerman and Dr. Shelesnyak are reviewing material for editing and publication.
- (c) Third Conference. Scientific editing underway.

3) Space Biosciences (Space Technology Utilization)--

Scientific Editor: Dr. Diane M. Ramsey-Klee

- (a) First Conference. Scientific editing and inhouse copy editing completed; to be published during Spring 1971 by ICA.

(b) Second Conference. Scientific editing underway.

D. CONTRACT ADMINISTRATION

The continuation and renewal of the prime contract No. NSR-09-015-044 to cover the period January 1, 1971 through December 31, 1971, was approved by NASA December 28, 1970. The next contract year, 1971, will see the initiation of the new conference series on Biochronology in addition to further conferences in Population and the Origins of Life series.



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M. C. SHELESNYAK, Ph.D., Director

~~18 August 1969~~ 1 OCT 1969

CONFERENCE ON GROWTH OF POPULATION II: CONTROL

Belmont Conference Center, Elkridge, Maryland, October 26-29, 1969

Co-Chairmen-Dr. Hudson Hoagland and Professor Solly Zuckerman

COOK, Mr. Robert C., President
Population Reference Bureau, Inc.
1755 Massachusetts Avenue, N.W.
Washington, D.C. 20036

ENKE, Mr. Stephen, Manager
Economic Development Program
General Electric Company
P.O. Drawer QQ, 816 State Street
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GREGG, Dr. Dorothy, Assistant to
Director of Public Relations
U.S. Steel; 71 Broadway
New York, New York 10006

HARDIN, Professor Garrett
Department of Biology
U. of Calif., Santa Barbara 93106

HOAGLAND, Dr. Hudson, President
The Worcester Foundation for
Experimental Biology
Shrewsbury, Massachusetts 01545

JOHANN, Dr. Robert
Department of Philosophy
Holy Cross College
Worcester, Massachusetts 01610

KAPLAN, Dr. Sylvan J., Coordinator
Center for Population Research - NICHD
National Institutes of Health - Bldg. 31
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KETCHEL, Dr. Melvin
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Tufts University School of Medicine
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Boston, Massachusetts 02111

LEBENSOHN, Dr. Zigmond M.
Clinical Professor of Psychiatry
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ICP; 1025 15th Street, N.W.
Washington, D.C. 20005

SHULTZ, Dr. Carl S., Director
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Planning, HEW
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Washington, D.C. 20201

SUTHERLAND, Professor Arthur
Harvard Law School
Cambridge, Massachusetts 02138

*TYDINGS, The Honorable Joseph
6237 New Senate Office Building
Washington, D.C. 20510

ZUCKERMAN, Professor Solly, OM, KCB, FRS
Chief Scientific Advisor, H. M. Government
Cabinet Office
London, SW1, ENGLAND

STAFF

Mrs. Roslyn Shelesnyak-Conference Aid
Mr. Franklin Steinko, Sr.-Stenotypist
Mrs. S. J. Kaplan - Recorder

*Participation affirmed, but last minute
change in schedule prevented attendance.



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M. C. SHELESNYAK, Ph.D., Director

Belmont Conference Center
26 - 29 October 1969

SECOND CONFERENCE: GROWTH OF POPULATION - CONTROL

In this, the second conference of the series, emphasis will be placed on systems of population control, assuming a basic premise that a generalized approach to population regulation is essential to the solution of the global problem. The group will consider biological, social and political factors implicated in "an across-the-board reduction in fertility" and the requirements for the task of implementing such an approach. Variations in basic strategy, involving sociological, psychological and anthropological mechanisms, and the posture of governmental and para-governmental agencies, will receive special attention.

AGENDA

Reduction in Fertility - what potential as a means for growth control?

1. Scientific, Biomedical and Technological Readiness
2. Political Viability and Social Implication
3. Administrative Feasibility
4. Economic Capability
5. Moral, Legal, Ethical, and Philosophical Acceptance
6. Presumed Effectiveness
7. Summation

SCHEDULE

Sunday, 26 October	6:00 P.M.	Reception
	7:00 P.M.	Dinner
	8:15 P.M.	Introductory Session
<u>Monday, 27 and</u>	9:00 A.M. -	
<u>Tuesday, 28 October</u>	5:30 P.M.	Working Sessions
<u>Wednesday, 29 October</u>	9:00 A.M. -	
	12:30 P.M.	Working Sessions

Coffee, tea, and cola will be served at convenient breaks (about 10:30 a.m. and 3:30 p.m.) in the morning and afternoon sessions. Lunch will be served at 12:30 p.m. Apertifs will be served at 6:30 p.m. and dinner at 7:00 p.m. No formal sessions are planned for Monday or Tuesday evenings.



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M. C. SHELESNYAK, Ph.D., Director

2 NOVEMBER 1970

THIRD CONFERENCE ON POPULATION GROWTH:
GOVERNMENTAL POLICIES

Belmont Conference Center, Elkridge, Maryland
November 8 - 11, 1970

PARTICIPANTS

Chairman: Sir Solly Zuckerman

BERELSON, Dr. Bernard
The Population Council
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New York, New York 10017

BOURGEOIS-PICHAT, Mr. Jean
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Demographiques (INED)
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BRASS, Dr. William
London School of Hygiene
and Tropical Medicine
Keppel Street
London WC1, England

DEMENY, Dr. Paul
Director of East-West
Population Institute
East-West Center
University of Hawaii
Honolulu, Hawaii 96822

HIS HIGHNESS THE MAHARAJA
GAEKWAR OF BARODA
Laxmi Vilas Palace
Baroda, India

GILLE, Mr. Halvor
Associate Director
United Nations Fund for
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New York, New York 10017

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Deputy Assistant Secretary for
Population Affairs
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Washington, D. C. 20201

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Veblen Professor of Sociology
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WILSON, Mr. David
Cabinet Office
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ZUCKERMAN, Sir Solly, OM, KCB, FRS
Chief Scientific Advisor
Cabinet Office
London SW1, England

ICP STAFF

Mrs. R. Shelesnyak - Conference Aide

Mrs. F. Swanson - Stenotypist

AND

Executive Director
National Commission on Population
Growth and the American Future
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M. C. SHELESNYAK, Ph.D., Director

29 OCTOBER 1970

THIRD CONFERENCE ON POPULATION GROWTH: GOVERNMENTAL POLICIES

Belmont Conference Center, Elkridge, Maryland
November 8 - 11, 1970

AGENDA

<u>TOPIC</u>	<u>DISCUSSION INITIATOR</u>
I. Framework for the Conference	Sir Solly Zuckerman
II. Constraints on any Effective Population Policies	Dr. A.E. Keir Nash
III. Expansionist and Restrictionist Policies	Mr. J. Bourgeois-Pichat
A. Reasons for Failure	
B. Conditions for Success	
IV. New Strategies	Dr. B. Berelson
A. Education - General and Specific	
B. Public Services	
C. Financial Incentives and Deterrents	
D. Social Incentives Deferments	
V. New Strategies: Can they be implemented and, if so, how?	Dr. Norman B. Ryder
VI. Monitoring and Assessment of Effect of Population Policies	Dr. W. Brass
VII. Review of Conference	



APPENDIX C
INTERDISCIPLINARY COMMUNICATIONS PROGRAM
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M. C. SHELESNYAK, Ph.D., Director

24 NOVEMBER 1969

PARTICIPANTS LIST

BELMONT CONFERENCE CENTER

CONFERENCE ON SPACE BIOSCIENCES

Chairman - Professor Joshua Lederberg

November 28-30, 1969

BROWN, Dr. J.H.U.
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Washington, D.C. 20560

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National Heart Institute
National Institutes of Health
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REYNOLDS, Dr. Orr E.
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CONFERENCE ON SPACE BIOSCIENCES
PARTICIPANTS LIST continued

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WAXMAN, Dr. Bruce, Director
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WILLIAMS, Mr. Thomas
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*Dr. Philips not attending - substitute
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Washington, D.C. 20546

**Participation affirmed, but last minute
change in schedule prevented attendance.

STAFF

Mrs. R. Shelesnyak - Conference Aide
Mrs. Floy Swanson - Stenotypist



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M. C. SHELESNYAK, Ph.D., Director

Belmont Conference Center
28-30 November 1969

SPACE BIOSCIENCES CONFERENCE

AGENDA

The general proposition to which we hope to direct our attention is the need for better utilization of scientific data, newer technologies, and bio-engineering capabilities, derived mainly, but not exclusively for NASA Biosciences activities. We plan to focus on improvement in three separate but interrelated problem areas:

1. Quality of the environment
2. Health Services and medical practice
3. Technology for augmentation of human cognition
for training and education

Our format excludes formal papers or lecturettes. However Discussion Initiators are selected to introduce and initiate dialogue on specific topics. The general areas will be:

1. Technology Utilization
2. Health Services
3. Ecology - Environment
4. Education & Training

The discourse shall encompass:

1. Ongoing Programs
2. Requirements for Increased Action
3. Program for Continuing of Interaction

SCHEDULE

<u>Friday, 28 November</u>	6:00 P.M.	Reception
	7:00 P.M.	Dinner
	8:15 P.M.	Introductory Session
<u>Saturday, 29 November</u>	9:00 A.M. - 12:00 P.M.	Working Sessions
	2:00 P.M. - 5:00 P.M.	
<u>Sunday, 30 November</u>	9:00 A.M. - 12:00 P.M.	Working Sessions
	2:00 P.M. - 4:30 P.M.	

Coffee, tea, and cola will be served at convenient breaks (about 10:30 a.m. and 3:30 p.m.) in the morning and afternoon sessions. Lunch will be served at 12:30 p.m. Apertifs will be served at 6:30 p.m. and dinner at 7:00 p.m.



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APPENDIX D

M. C. SHELESNYAK, Ph.D., Director

1 MAY 1970

PARTICIPANTS LIST

BELMONT CONFERENCE CENTER

SECOND CONFERENCE ON SPACE TECHNOLOGY UTILIZATION: IMPROVING THE QUALITY OF THE ENVIRONMENT

Chairman - Dr. Mark D. Hollis

April 28 - 30, 1970

BLACK, Mr. Ralph
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HOLLIS, Dr. Mark D.
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LORING, Dr. William C.
Research and Development Officer
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LUDWIG, Dr. Harvey F.
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NEILL, Captain Arthur H.
Deputy Planetary Quarantine
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RAMSEY-KLEE, Dr. Diane M.
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Malibu, California 90265

RENN, Professor Charles E.
The Department of Geography
and Environmental Engineering
The Johns Hopkins University
Baltimore, Maryland 21218

SALMON, Mr. William C.
Deputy Director
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SHELESNYAK, Dr. M. C.
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Earth Observations Programs
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PARTICIPANTS LIST (continued)

BELMONT CONFERENCE CENTER

SECOND CONFERENCE ON SPACE TECHNOLOGY UTILIZATION:
IMPROVING THE QUALITY OF THE ENVIRONMENT

Chairman - Dr. Mark D. Hollis

April 28 - 30, 1970

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STAFF

Mrs. R. Shelesnyak - Conference
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Mrs. F. Swanson - Stenotypist



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M. C. SHELESNYAK, Ph.D., Director

1 APRIL 1970

BELMONT CONFERENCE CENTER

APRIL 28 - 30, 1970

SECOND CONFERENCE ON SPACE TECHNOLOGY UTILIZATION: IMPROVING THE QUALITY OF THE ENVIRONMENT

AGENDA

Environmental factors to be considered for the 28-30 April Conference:

- I. Rapid population growth and accelerating technological advances in an urbanizing society are creating unprecedented changes in the physical environment of man. The speed, magnitude, and complexity of these changes intensify traditional problems; damage environmental quality; and create a host of stresses with new terms, new dimensions, and new equations.
 - A. Are such developments detrimental to the health and well-being of man? If so, when, where, and how are these effects manifest? At what point on the upsurging economic-development curve does the price of progress -- in terms of environmental deterioration -- exceed the value of economic progress -- in terms of consumer health, materials, and services?
 - B. Since by-product wastes from the development and use of industrial processes and industrial products create an array of intoxicants, resultant questions include: Which pollutants are toxic to humans? Which to animal and aquatic life? At what levels are they toxic? How toxic? How important are additive effects, combinations, and synergisms? What parameters need to be devised for recognizing the long-range, widely-separated cause-and-effect sequence?
 - C. What types of regional and international monitoring networks are required to observe environmental behavioral patterns in order to detect the desirable or undesirable changes that are natural or man-made? Specifically, what should be monitored in national and international systems -- physical and chemical properties, plant and animal distribution, transportation networks and their consequences, land and water uses, et cetera? What are the means for combining individual indices, appropriately weighted, into an overall environmental-quality index?

II. Remote-sensing technology is emerging as an environmental monitoring tool, with new dimensions and new vistas. What is the current state of the art and what are its potentials? What about international applications? Political issues?

III. Public-policy issues in terms of pollution areas:

A. Water pollution

1. present policies -- adequate or inadequate;
2. public understandings and misunderstandings;
3. prognosis for blunting deterioration of waterways;
4. policy of Federal subsidies;
5. waste-treatment technology.

B. Air pollution

(Apply the same general approach used above for water pollution.)

C. Land pollution

1. solid-wastes catastrophic situation;
2. what types of approaches appear ameliorative;
3. decomposable packaging materials;
4. disposal of spent bulk materials (automotive).

IV. The application of technological systems to the production of goods and services has become an established parameter for economic development and living standards. Such progress disrupts ecological balances and causes deterioration of natural environments.

A. The discussion of global implications of our present course of action under the concept that man now shapes not only his destiny, but the shape of nature itself -- for good or for evil.

V. Role of international agencies:

A. Developing regulatory responsibilities

B. UN Conference on the Human Environment (1972)

C. Expanding international bureaucracies



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M. C. SHELESNYAK, Ph.D., Director

4 MARCH 1970

PARTICIPANTS LIST

SANTA YNEZ INN, CALIFORNIA

THIRD CONFERENCE ON ORIGINS OF LIFE

Chairman - Dr. Norman H. Horowitz

27 February - 2 March 1970

HOROWITZ, Dr. Norman H.
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ORGEL, Dr. Leslie E.
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Moffett Field
Mountain View, California 94035

OWEN, Professor Tobias C.
Division of Geology
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Pasadena, California 91109

LEOVY, Professor Conway B.
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Chairman - Dr. Norman H. Horowitz

27 February - 2 March 1970

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INTERDISCIPLINARY COMMUNICATIONS PROGRAM

• SMITHSONIAN INSTITUTION

1025 FIFTEENTH STREET, N.W. • SUITE 700 • WASHINGTON, D.C. 20005 • (202) 381-5577

Santa Ynez Inn, California

27 February - 2 March 1970

THIRD CONFERENCE ON ORIGINS OF LIFE

AGENDA

Friday, 27 February

Introductory Session

Saturday, 28 February

The Moon

Discussion Initiator: Shoemaker

A. Results from Apollo 11

1. Age of the lunar surface material
2. Origin of the lunar regolith
3. Chemical differentiation on the moon
4. Organic analysis of lunar surface material
5. Biological experiments on lunar material

B. Significance of data for questions relating to the origin of life

C. Biological questions for Apollo 12 and later missions

Sunday, 1 March

Mars

Discussion Initiator: Murray

A. Results from Mariner 6 and Mariner 7

1. Atmosphere

- (a) Pressure
- (b) Composition
- (c) Clouds
- (d) Blue haze

2. Surface

- (a) The Martian terrains
- (b) Age of the Martian surface
- (c) Geological evidence of past history: Did Mars ever have an ocean?
- (d) Present status and distribution of water on Mars
 - (d.1) Polar collar
 - (d.2) Diurnal brightenings
 - (d.3) Geothermal areas
- (e) Dark vs. bright areas

B. Discussion of biological significance of Mariner 6 and Mariner 7 data

Sunday eve., 1 March

Mars (cont.)

Chairman: Young

C. Future prospects and strategy in the search for extraterrestrial life.

The relevance of Mariner 6 and Mariner 7 for:

1. The 1971 Mars orbiters
2. A 1975 Mars lander
3. Other planets



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6 JANUARY 1971

FOURTH CONFERENCE ON POPULATION GROWTH:
 INFORMATION TRANSFER AND COMMUNICATION
 Belmont Conference Center, Elkridge, Maryland
 January 24-26, 1971

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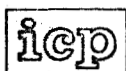
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M. C. SHELESNYAK, Ph.D., Director

19 JANUARY 1971

FOURTH CONFERENCE ON POPULATION GROWTH: INFORMATION TRANSFER AND COMMUNICATION Belmont Conference Center, Elkridge, Maryland January 24-26, 1971

AGENDA

Opening:

The Problem; and Objectives of the Conference - Chairman
Self Introductions

Viewpoints on Communication from the "Population Problem" Professionals

Cook, Hammer, Lyons, Shultz

Communication Problems in Population Problem

Overloads - Shilling, Casey

Technology - Binning

Barriers - Lebensohn

Research in Reproduction Biology and Contraception

Biological Information - "Prostaglandin" A Case History - Shilling, Pulliam, Casey

Research Investigators: Needs - Casey, Mishell, Marcus, Shelesnyak

Education and Training

General Propositions: Range, Levels, Impact - Cook, Hammer

Developing Countries - Goldstein

College and Community - Alfred

Advanced Special Levels

College Curricula - Binning

Professions and Professional Societies - Reynolds, Lebensohn

Medical Training - Mishell

Field Operation Training - Hammer

Policy Level Information - Lyons

Dissemination, Impact, and New Directions - Lyons, Hammer, Shultz

Summation - Chairman



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M. C. SHELESNYAK, Ph.D., Director

FIRST CONFERENCE ON BIOCHRONOLOGY

Belmont Conference Center, Elkridge, Maryland

February 7-10, 1971

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