

NASA Contractor Report 3922(11)

# USSR Space Life Sciences Digest

*Index to Issues 5-9*

Lydia Razran Hooke

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NASA Contractor Report 3922(11)

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Lydia Razran Hooke

*Management and Technical Services Company  
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USSR SPACE LIFE SCIENCES DIGEST: INDEX (ISSUES 5-9)

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## TOPIC AREA LISTING FOR USSR SPACE LIFE SCIENCES DIGEST ISSUES 5-9

The following pages give bibliographic citations and key words for abstracts published in issues 5-9 of the USSR Space Life Sciences Digest grouped according to the topic area categories under which they were originally included. Topic area categories are listed in alphabetical order. Within categories, abstracts are grouped according to the Digest issue in which they appeared. At the beginning of each topic area there is a set of cross references referring the reader to abstracts within other relevant topic areas. For example, the cross reference "Adaptation 4" under the topic area "ENDOCRINOLOGY" indicates that the fourth abstract listed under the topic area "ADAPTATION," is also relevant to the field of endocrinology.

Following this section is a key word index; numbers in this index refer to page numbers in this topic area listing.

## ADAPTATION

See also Biological Rhythms 3; Body Fluids 6; Cardiovascular and Respiratory Systems 18; Endocrinology 2, 3, 5; Hematology 4; Human Performance 2, 9, 13; Immunology 1; Life Support Systems 11; Metabolism 2, 11; Morphology and Cytology 1; Musculoskeletal System 5, 13; Neurophysiology 12, 16; Psychology 1.

### ISSUE 5

#### PAPER:

1. P264(4/86) Sten'ko YuM, Vinogradov SA, Filatova TA.

**The combined effects of climatic factors and ship conditions on psychophysiological functions in seamen of the Arctic fleet.**

Gigiyena Truda i Professional'nyye Zabolevaniya.

1986(1): 28-31.

[8 references; none in English]

Scientific Research Institute for Hygiene in Shipping, USSR Ministry of Health, Moscow

Adaptation, Long-term Service, Seasonal Variations; Psychology, Social Adjustment, Information Processing; Thermal Regulation; Cardiovascular and Respiratory Systems, Functional Parameters

Humans, Seamen

Environmental Conditions, Long-term Cruise, Optimal Cruise Length, Arctic, Cold

### ISSUE 7

#### PAPER:

2. P303(6/86)• Alyakrinskiy BS.

**Philosophical aspects of the theory of adaptation.**

Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.

20(2):6-15; 1986.

[40 references; 1 in English]

Adaptation; Biological Rhythms

Theoretical Article

Philosophy, Dialectics

### ISSUE 8

#### MONOGRAPH:

3. M87(8/86) Agadzhanyan NA, editor.

Adaptatsiya cheloveka i zhivotnykh k ekstremal'nyim usloviyam vneshney sredy: Sb. nauchnykh trudov

**[Adaptation of humans and animals to extreme environmental conditions].**

Moscow: Isdatel'stvo Universiteta druzhby narodov; 1985.

[184 pages; 13 tables; 61 figures; 255 references; 91 in English]

Affiliation: University of Friendship Among Peoples, Moscow

**Key Words:** Adaptation, Biological rhythms, Hypoxia, Hyperthermia, Physical Exertion, Cardiovascular System

## ISSUE 9

## PAPER:

4. P403(9/86) Khitrov NK, Toloknov AV, Bolshakova TD, Vinnitskaya KB, Panteleymonov VA.

**Mechanisms of adaptation to physical exertion and the effect of excess CO<sub>2</sub> [on its formation.]**

Byulleten'' Eksperimental'noy Biologii i Meditsiny.

CI(6): 655-658; 1986.

[11 references; 2 in English]

Affiliation: I. M. Sechenov Medical Institute of Moscow, (Departments of Pathophysiology and Problems of Laboratory Biochemistry of Tissue Hormones)

Adaptation; Cardiovascular System; Endocrinology, Norepinephrine;  
Neurophysiology, Acetylcholine

Rats, Male

Physical Exercise, Maximum Exercise Capacity, Training; Hypercapnia

## BOOK REVIEW:

5. BR10(9/86) Isabayeva VA, Slonim AD.

Review of: Nespetsificheskiye Mekhanizmy Adaptatsii Cheloveka

[**Non-specific mechanisms of human adaptation**].

Leningrad: Nauka; 1984, 146 pages.

Fiziologiya Cheloveka.

12(4): 695-696; 1986.

**Key Words:** Adaptation, Human, Long-term, General; Hematology, Leukocytes;  
Biological Rhythms

## BIOLOGICAL RHYTHMS

See also Adaptation 3, 5; Biospherics 1; Cardiovascular and Respiratory Systems 36, Operational Medicine 3; Psychology 3.

### ISSUE 7

#### PAPER:

1. P282(6/86) Krivoshchekov SG, Divert GM, Domakhina GM.  
**Mechanisms regulating muscle activity as a function of human biological rhythm type.**

Fiziologiya Cheloveka.

12(2): 258-262.

[19 references; 3 in English]

Institute of Physiology, Siberian Department, USSR Academy of Medicine

Biological Rhythms, Typology; Human Performance, Work Capacity  
Humans, Males and Females  
Musculoskeletal System, Muscle Activity

### ISSUE 9

#### PAPER:

2. P405(9/86) Kazin EM, El'bert VE, Grishayeva VS, Shorin YuP.

**Diurnal and seasonal rhythms of physiological functions in adrenalectomized rats.**

Problemy Endokrinologii.

XXXII(2): 63-67; 1986.

[15 references; 2 in English]

Authors' affiliation: Kemerov University (Department of Human Physiology and Anatomy); Institute of Clinical Experimental Medicine (Laboratory of Endocrinology)

Biological Rhythms, Diurnal and Seasonal;  
Rats, Male  
Endocrinology, Adrenalectomy, Thymus, Liver, 11-Oxycorticoids, Glucose,  
Glycogen, Free Fatty Acids, Nucleus Containing Cells

#### MONOGRAPH:

3. M97(9/86) Stepanova SI.

Bioritmologicheskiye aspekty problemy adaptatsii

[**Biological rhythm aspects of the problem of adaptation**].

Moscow: Nauka; 1986.

[244 pages; 5 tables; 56 figures; 31 pages of references; ca. 200 in English]

Affiliation: [Book] Interagency Scientific Council of the USSR Academy of Sciences and USSR Academy of Medical Sciences on the Fundamental Problems of Medicine

**Key Words:** Biological Rhythms; Adaptation; Personnel Selection,  
Cosmonauts

## BIOSPHERICS

See also Exobiology 3, 11; Microbiology 1.

### ISSUE 5

#### MONOGRAPHS:

1. M58(2/86) Sidyakin VG, Temur'yants NA, Makeyev VB, Vladimirskiy BM.  
Kosmicheskaya ekologiya.

**[Space ecology].**

Kiev: Naukova Dumka; 1985.

[176 pages; 59 figures; 24 tables; 539 references]

N.G. Kholodnyy Botanical Institute, Ukrainian Academy of Sciences

**Key Words:** Biospherics, Solar Activity; Radiobiology, Ionizing Radiation, Magnetic Fields; Physiochemistry; Microbiology; Botany; Neurophysiology; Cardiovascular and Respiratory Systems; Hematology; Morphology and Cytology; Psychology; Immunology; Biological Rhythms.

2. M64(2/86) Grigor'yev AA.

Antropogennyye vozdeystviya na prirodnyuyu sredu po nablyudeniya iz kosmosa  
**[Using observations from space to study anthropogenic effects on the environment].**

Leningrad: Nauka; 1985.

[239 pages, 39 figures, no tables; 277 references; 125 in English].

USSR Geographical Society, USSR Academy of Sciences

**Key Words:** Biospherics, Space Surveys, Remote Sensing, Human Impact, Forest, Plant Cover, Land Use, Ecology, Archaeology

### ISSUE 6

#### PAPERS:

3. P260(4/86) Sukhotin YuV, Kudryatsev VS.

**Evaluation of the cost effectiveness of using remote sensing data in forest management**

Issledovaniye zemli iz kosmosa.

1986(1): 57-63.

[3 references; none in English]

"Lesproyekt" All-Union Aerial Photography Forest Management Association, Moscow; Central Mathematical Economics Institute, USSR Academy of Sciences, Moscow

Biospherics, Remote Sensing Data  
Forests, Forest Management  
Cost Effectiveness Estimation

## BIOSPHERICS

### ISSUE 6

4. P277(4/86) Kanevskiy VA, Ryazantsev VF, Perekrest ON, Il'in VP, Movchan YaI, Perekrest OI, Bekh LT, Dariy VP.

**On the potential for using remote laser data to assess the state of agricultural crops on the basis of their luminescence.**

Issledovaniye Zemli iz Kosmosa

1985(6): 37-39.

[3 references; none in English]

N.G. Kholodnyy Institute of Botany, Ukrainian Academy of Sciences, Kiev  
Center for Automated Scientific Research and Meteorology, Moldavian  
Academy of Sciences

Biospherics, Laser-induced Luminescence

Wheat, Rye

Chlorophyll Content, Fertilization, Biomass

### MONOGRAPHS:

5. M69(4/86) Svirezhev YuM.

Matematicheskoye modelirovaniye biogeotsenoticheskikh protsessov  
[**Mathematical modeling of ecological (literally, biogeocoenotic) processes**].

Moscow: Nauka; 1985.

[126 pages]

Scientific Council on Problems in Ecology and Conservation and A.N.  
Severtsov Institute of Evolutionary Morphology and Animal Ecology, USSR  
Academy of Sciences.

**Key Words:** Biospherics, Ecological Processes and Prediction;  
Mathematical Modeling, Ecosystems; Oxygen Cycle, Forests, Swamps,  
Cotton

6. M72(4/86) Izrael' YuA, Bugrovskiy VV, Novikov YuV, editors.

Kosmicheskiy monitoring biosfery

[**Monitoring the biosphere from space**].

Leningrad: Gidrometeoizdat; 1985.

[ca. 145 pages; 8 tables; 46 illustrations; 109 references]

Working Group on Monitoring of the Biosphere from Space, Monitoring  
Section, Council on Biospheric Problems, USSR Academy of Sciences

**Key Words:** Biospherics, Remote Sensing, Ecological Monitoring,  
Ecosystems, Anthropogenic Effects; Cybernetics and Data Processing,  
Automated Remote Sensing Data Processing

ISSUE 7

MONOGRAPHS:

7. M77(6/86) Moyseyev NN, Aleksandrov VV, Tarko AM.  
Chelovek i biosfera: Opyt systemnogo analiza i eksperimenty s modelyami  
[**Man and the biosphere: Case studies in systems analysis and simulation**].  
Moscow: Nauka; 1985.  
[272 pages; 83 illustrations; 190 references; 102 in English]  
Computer Center, USSR Academy of Sciences

**Key Words:** Biospherics, Anthropogenic Effects, Nuclear War, Climate,  
Biogeochemical Cycles; Mathematical Models, Simulations

8. M82(6/86) Vinogradov BV.  
Aerokosmicheskiy monitoring ekosistem  
[**Aerospace monitoring of ecosystems**].  
Moscow: Nauka; 1984.  
[320 pages]  
Section on the Chemical Engineering and Biological Sciences, USSR Academy  
of Sciences, Soviet Committee for the UNESCO "Man and the Biosphere"  
Program

**Key Words:** Biospherics, Aerospace Monitoring, Remote Sensing, Vegetation,  
Soil, Wildlife, Ecosystems, Nature Preserves

9. M83(6/86) Vladimirskiy BM, Kislovskiy LD.  
Kosmicheskiye vozdeystviya i evolyutsiya biosfery  
[**The influence of space on the evolution of the biosphere.**]  
Part of popular series: Kosmonavtika, Astronomiya  
Moscow: Znaniye; 1986.  
[64 pages]

**Key Words:** Biospherics, Evolution of the Biosphere, Space Factors,  
Anthropogenic Effects, Ecology; Radiobiology

Translation of concluding chapter, "The Biosphere and Space," pp. 59-64.

ISSUE 8

MONOGRAPHS:

10. M95(8/86) Gerasimov IP.  
**Geographical Prognostication: Problems and Prospects.**  
Moscow: Progress; 1986.  
Affiliation: USSR Academy of Sciences.

**Key Words:** Biospherics, Geographical Predictions, Climate, Ecology

**CONFERENCE REPORT:**

11. CR3(8/86)Vedeshin LA, Yegorov VV.

**International collaboration in the "Interkosmos" Program for the study of the Earth from space** (in honor of the 10th anniversary of the working group of socialist nations on remote sensing of the Earth)

In: Issledovaniye Zemli iz Kosmosa.

1986(3): 117-119.

**Key Words:** Biospherics, Interkosmos, Remote Sensing, Multispectral Photographs, Salyut-6, Salyut-7

## BODY FLUIDS

See also Life Support Systems 8.

### ISSUE 5

#### PAPER:

1. P218 (2/86) Pyshnyak EI, Sokolova LS, Rodionova MA, Fel'dkoren BI, Cherenina SV, Kuzemskii VV, Kotsegub TP.  
**Energy production, electrolyte balance and hormonal regulation during maximum physical exercise.**

Teoriya i praktika fizicheskoy kul'tury.

1985(9): 16-17.

[9 references; 1 in English]

Leningrad Scientific Research Institute of Physical Culture

Body Fluids, Fluid Electrolyte Balance; Also Endocrinology, Hormonal Regulation; Metabolism  
Humans, Athletes  
Physical Exercise, Endurance Limits

### ISSUE 6

#### PAPERS:

2. P255(4/86) Kozlova VG, Aleksandrova YeA.  
**Change in electrical conductivity of blood under conditions of immersion.**

Fiziologiya Cheloveka.

11(6): 1028-1030; 1985.

[10 references; 2 in English]

Body Fluids, Fluid-Electrolyte Balance  
Humans, Males  
Immersion, Dry

3. P265(4/86) Yakushev VS, Mironova YeV, Kuripka VI, Makoyed OB, Ryzhov AA.  
**Calcium balance during emotional stress due to pain.**

Fiziologicheskiy Zhurnal.

31(6): 683-688; 1985.

[18 references; 8 in English]

Zaporozhe Medical Institute

Body Fluids, Calcium Balance, Heart, Blood, Liver, Feces  
Rats  
Psychology, Emotional Stress, Pain

ISSUE 7

PAPER:

4. P305(6/86)\* Grigor'yev AI, Verigo VV.  
**Mathematical modeling of the processes of fluid-electrolyte exchange.**  
Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.  
20(2):24-27; 1986.  
[12 references; 4 in English]

Body Fluids, Fluid-Electrolyte Exchange  
Mathematical Model  
Extreme Conditions, Provocative Tests

ISSUE 8

PAPER:

5. P348(8/86) Terenozhkina NP.  
**The effect of natriuretic hormone on ion transport through the erythrocyte membrane.**  
Kardiologiya.  
XXVI(3): 87-90; 1986.  
[14 references; 7 in English]  
Affiliation: Department of Pharmacology, Chernovits Medical Institute.

Body Fluids, Ion Transport; Cytology, Cell Membrane  
Dogs  
Endocrinology, Natriuretic Hormone

MONOGRAPH:

6. M88(8/86) Gazenko OG. Grigor'yev AI, Natochin YuV.  
Vodno-Solevoy Gomeostaz i Kosmicheskii Polet.  
**[Fluid-Electrolyte Balance and Space Flight].**  
Volume 54 in Series: Problemy Kosmicheskoy Biologii [Problems in Space Biology]  
Moscow: Nauka; 1986.  
[63 tables; 64 figures; 22 pages of illustrations]

**Key Words:** Fluid-electrolyte Metabolism, Endocrinology, Spaceflight, "Voskhod," "Soyuz," "Salyut," "Kosmos," Adaptation, Weightlessness Simulation, Countermeasures, Renal Function

ISSUE 9

PAPER:

7. P400(9/86) Yakushev VS, Shkopinskiy YeA, Kuripka VI, Mironova YeV, Verzhikovskaya BG, Makoyed OB, Ryzhov AA.

**Concentration of electrolytes in the blood and tissue hydration in response emotional-pain stress.**

**Fiziologicheskiy Zhurnal.**

32(3): 363-367; 1986.

[6 references; 1 in English]

Body Fluids, Electrolyte Concentration, Tissue Hydration

Rats

Psychology, Stress, Emotional-Pain

## BOTANY

See also Biospherics 1; Life Support Systems 3, 6, 9, 10, 11;  
Radiobiology 16, 17; Space Biology and Medicine 2.

### ISSUE 5

#### PAPERS:

1. P209(2/86)\* Berkovich YuA, Korbut VA, Pavlovskiy VI.  
**Greenhouses with curved planting surfaces.**

Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.  
19(6): 77-80; 1985.

[7 references; none in English]

Botany, Growth Conditions

Higher Plants

Spacecraft Equipment and Methodology, Greenhouse

2. P221(2/86) Palladina TO, Kordyum YeL, Bilyavska NO.

**Activity and localization of transport adenosine triphosphatases in pea sprout root cells under conditions of hypogravity.**

Ukrayins'kiy Botanichnyy Zhurnal. NB: Original in Ukrainian  
41(5): 54-57; 1984.

[11 references; 10 in English]

Institute of Plant Physiology of the Ukrainian Academy of Sciences;  
M.G. Kholodnyy Botanical Institute Ukrainian Academy of Sciences

Botany, ATPase Activity

Higher Plants, Pea, Sprouts, Roots

Weightlessness, "Dynamic," Simulation, Clinostat

3. P222(2/86) Cherevchenko TM, Shmyhov'ska VV, Kosakivs'ka IV,  
Chernyad'yev II.

**Effects of long-term weightlessness on Orchidacea proteins.**

Dopovidi Akademii Nauk URSR. Seriya geologichni, khimichni ta  
biologichni nauky. NB: Original in Ukrainian.  
1984(5): 75-77.

[3 references; 1 in English]

Central Republic Botanic Garden, UkSSR Academy of Sciences, Kiev;  
Institute of Biochemistry, USSR Academy of Sciences.

Botany, Protein

Higher Plants, Orchids

Weightlessness, "Dynamic," Long-term,

4. P223(2/86) Taibrekov MG, Devyatko AV.  
**Plant metabolism under weightlessness.**  
 Doklady Akademii Nauk SSSR. Biofizika.  
 280(2): 509-512; 1985.  
 [10 references; 1 in English]  
 Institute of Biomedical Problems, Moscow

Botany, Metabolism  
 Higher Plants, Corn, Sprouts  
 Space Flight, Cosmos-1514; Weightlessness

ISSUE 6

PAPERS:

5. P235(4/86)\* Kostina LN, Anikeyeva ID, Vaulina EN.  
**Experiments with developing plants on the "Salyut-5," "Salyut-6" and "Salyut-7" orbital space stations.**  
 Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.  
 20(1): 49-53; 1986.  
 [12 references; 3 in English]

Genetics, Chromosome Aberrations, Mutations  
 Botany, Crepis capillaris, Arabidopsis thaliana, Air-dried seeds, shoots  
 Space flight, Long-term, Salyut-5, Salyut-6, Salyut-7

6. P247(4/86)\* Levinskikh MA.  
**Changes in photosynthesis rate of Closteriopsis acicularis var. africana Hind. as a function of concentration of oxygen in the atmosphere.**  
 Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.  
 20(1): 83-84; 1986.  
 [13 references; 11 in English]

Botany, Photosynthesis, Rate; Life Support Systems, CELSS  
 Seaweed, Closteriopsis acicularis  
 Oxygen Concentration

ISSUE 7

PAPERS:

7. P281 (6/86) Merkis AI, Laurinavichyus RS, Shvyagzhdene, DV.  
**Gravitational sensitivity and growth of plants in weightlessness**  
 Izvestiya Akademii Nauk SSSR: Seriya Fizicheskaya  
 49(4): 715 - 723; 1985.  
 [33 references; 18 in English]

Botany, Growth and Tropisms, Viability  
 Lettuce, Sprouts; Arabidopsis, Seeds  
 Space Flight Conditions, Salyut-7; Artificial Gravity, Centrifugation

ISSUE 7

8. P306(6/86) Aliyev AA, Mekhti-zade ER, Mashinskiy AL, Alekperov UK.  
**Modification of the cytogenetic and physiological effects of space flight factors by biologically active compounds.**

Zhurnal Obshechey Biologii.

XLVII(2): 246-251; 1986.

[27 references; 5 in English]

V.L. Komarov Botanical Institute, Azerbaydzhan Academy of Sciences, Baku;  
 All-Union Scientific Research Institute of Biotechnology, Moscow.

Botany, Germination Rate, Mitotic Index, Growth Rate; Genetics,  
 Chromosome Aberration  
 Welsh Onion, Seeds  
 Space Flight Factors, Salyut-7; Biologically Active Compounds,  
 Alpha-tocopherol, Auxin, Kinetin

ISSUE 8

PAPERS:

9. P312(8/86) Vaulina, EN, Anikeyeva ID, Kostina LN.  
**The viability and mutability of plants after space flight.**

In: Kovrov BG, Kordyum VA, editors.

Mikroorganizmy v iskusstvennykh ekosistemakh.

[Microorganisms in artificial ecosystems].

Moscow: Nauka; 1985.

[Pages 5-10; 10 references; 4 in English]

See also Digest Issue 7: M78; Digest Issue 6: P235.

Botany, Viability; Genetics, Mutability  
Arabidopsis thaliana, Crepis capillaris  
 Space Flight, "Salyut-6," "Salyut-7"

10. P313(8/86) Abilov ZK, Alekperov UK, Mashinskiy AL, Fadeyeva SI, Aliyev AA.

**The morphological and functional state of the photosynthetic system of plant cells grown for varying periods under space flight conditions.**

In: Kovrov BG, Kordyum VA, editors.

Mikroorganizmy v iskusstvennykh ekosistemakh.

[Microorganisms in artificial ecosystems].

Moscow: Nauka; 1985.

Pages 29-32.

See also Digest Issue 4: P181; Digest Issue 5: P221, P222.

Botany, Photosynthesis System, Cells  
 Peas, Orchids  
 Space Flight

## ISSUE 9

## PAPER:

11. P396(9/86) Tarasenko VA.

**The ultrastructure of the root cap of Arabidopsis plants under normal conditions and microgravity.**

In: Kovrov BG, Kordyum VA, editors.

Mikroorganizmy v iskusstvennykh ekosistemakh.

[**Microorganisms in artificial ecosystems**].

Novosibirsk: Nauka; 1985. See Digest Issue #7, M78.

[pp. 23-28; 11 references; 3 in English]

Botany, Morphology and Cytology, Ultrastructure, Root Cap  
Higher Plants, Arabidopsis  
Spaceflight. "Salvut-6". Clinostat

## CARDIOVASCULAR AND RESPIRATORY SYSTEMS

See Adaptation 1, 3, 4; Biospherics 1; Hematology 6; Human Performance 13; Metabolism 11; Neurophysiology 12, 17; Operational Medicine 3; Space Biology and Medicine 1, 2.

### ISSUE 5

1. P186(2/86) Fedorov BM, Strel'tsova YeN, Sebekina TV.

**Alteration in circulation in the carotid sinus in head-down tilt and head-down tilt accompanied by hypokinesia.**

Fiziologiya Cheloveka.

11(5): 755-763; 1985.

[21 references; 1 in English]

Cardiovascular and Respiratory Systems, Circulation, Carotid Sinus  
Humans, Males  
Hypokinesia, Head-down Tilt

2. P187(2/86) Mirrakhimov MM, Azhimamatov TA, Baltabayev TB.

**Hemodynamics during short-term lower body negative pressure.**

Fiziologiya Cheloveka.

11(5): 763-769; 1985.

[19 references; 7 in English]

Kirgiz Scientific Research Institute of Cardiology, Frunze

Cardiovascular and Respiratory Systems, Hemodynamics, Central, Cardiac  
Humans, Males  
Lower Body Negative Pressure

3. P188(2/86) Kovalenko, YeA, Katkov, AYu, Popkov VL, Bobrovnitskiy MP,

Chabdarova RN, Afonin BV, Goroyan GP, Krikun IS, Kudrashova ZhM,  
**Comparison of the effectiveness of drugs and barochamber training on preventing symptoms of hypoxia in humans.**

Fiziologiya Cheloveka.

11(5): 808-813; 1985.

[12 references; none in English]

Cardiovascular and Respiratory Systems, Hypoxia  
Humans  
Countermeasures, Drugs, Training Program

4. P195(2/86)\* Dlusskaya IG, Khomenko MN.

**Responses of subjects differing in tolerance of +G<sub>z</sub> to tilt tests and water loading tests.**

Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.

19(6): 22-27; 1985.

[20 references; 9 in English]

Cardiovascular and Respiratory Systems, Tolerance; Personnel Selection  
Humans, Males; Diagnostic Prediction  
Tilt Tests, Water Loading, Centrifugation

ISSUE 5

5. P196(2/86)\* Kotkov VYe, Pravetskiy NV.  
**Cerebral circulation and oxygen supply in healthy humans performing graded physical exercise in a head-down position.**

Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.

19(6): 32-34; 1985.

[13 references; 9 in English]

Cardiovascular and Respiratory Systems, Cerebral Circulation;  
Metabolism, Tissue  
Humans  
Head-down Tilt, Exercise

6. P198(2/86)\* Asyamolova NM, Shabel'nikov VG, Baranov VM, Kotov AN, Volkov MYu.

**Parameters of forceful expiration in healthy individuals under simulated weightlessness.**

Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.

19(6): 34-37; 1985.

[15 references; 7 in English]

Cardiovascular and Respiratory Systems, Forceful Expiration  
Humans, Males  
Weightlessness Simulation, Immersion

7. P204(2/86)\* Mirrakhimov MM, Khamzamulin RO, Lar'kov VA.

**The state of the cardiovascular system in acute altitude sickness.**

Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.

19(6): 57-61; 1985.

[17 references; 9 in English]

Cardiovascular and Respiratory Systems  
Humans, Males, Typology  
Altitude Sickness, Acute

8. P206(2/86)\* Stazhadze LL, Ventslavskaya TA, Korzhova VV.

**Experimental arrhythmia and its prevention.**

Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.

19(6): 64-68; 1985.

[18 references; 1 in English]

Cardiovascular and Respiratory Systems, Arrhythmia, Experimental  
Rats, Mice  
Countermeasures, Drugs, Selenium

ISSUE 5

9. P212(2/86)\* Zavadovskiy AF, Korotayev MM, Kopanev SV, Plyasova-Bakunina IA, Vavakin YuN.

**The effect of active training in a head-down position on tolerance of cranial fluid shift.**

Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.

19(6): 83-85; 1985.

[11 references; none in English]

Cardiovascular and Respiratory Systems, Fluid Shifts, Cranial  
Humans, Males  
Exercise, Head-down

10. P214(2/86)\* Mel'nichenko VP, Gol'dovskaya MD, Giriyayeva IO, Shevchenko YuV, Chamurliyev GG, Magedov VS.

**Electrocardiogram in Nehb leads in Macaca mulatta monkeys.**

Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.

19(6): 87-89; 1985.

[9 references; 7 in English]

Cardiovascular and Respiratory Systems  
Monkeys, Macaca mulatta  
Instrumentation, Electrocardiographs, Bipolar Leads

MONOGRAPH:

11. M65(2/86) D'yachenko AI, Shabel'nikov VG.

Matematicheskiye modeli deystviya gravitatsii na funktsii legkikh.

**[Mathematical models of the effects of gravity on pulmonary function].**

Volume 51 in "Problemy Kosmicheskoy Biologii." [Problems of Space Biology].

Moscow: Nauka; 1985.

[279 pages; 72 figures; 4 tables; 468 references]

**Key Words:** Cardiovascular and Respiratory Systems, Pulmonary Function,  
Ventilation, Circulation, Gas Exchange; Mathematical Modeling;  
Gravitational Effects, Biomechanics

ISSUE 6:

PAPERS:

12. P224(4/86)\* Doroshev VG, Kirillova ZA, Vanarshenko AP.

**The nature of circulatory regulation in pilots.**

Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.

20(1): 12-15; 1986.

[8 references; none in English]

Cardiovascular and Respiratory Systems, Regulation of Circulation  
Humans, Pilots  
Human Performance, Job Demands

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13. P229(4/86)\* Asyamolov BF, Panchenko VS, Karpusheva VA, Bondarenko RA, Vorob'yev OA, Zaritsky VV, Stupnitskiy VP, Popov IG, Lozinskiy PA, Ledovskiy SM.

**Certain human reactions to a seven-day period of hypokinesia with head-down tilt.**

Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.

20(1): 29-32; 1986.

[19 references; 6 in English]

Cardiovascular and Respiratory Systems, Hemodynamics; Neurophysiology, Vestibular Tolerance, Acceleration Tolerance; Psychology, Cognitive Functioning, Emotional State  
Humans, Males  
Hypokinesia, Head-down Tilt

14. P231(4/86)\* Rumyantsev VV, Katkov VYe.

**Human central hemodynamics during leg decompression.**

Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.

20(1): 35-37; 1986.

[5 references; 23 in English]

Cardiovascular and Respiratory Systems, Central Hemodynamics  
Humans, Males  
LBNP, Leg Decompression

15. P240(4/86)\* Vereshchagin VK, Gayevyy MD.

**The effect of dibazol and its imidazoline analogs on tolerance of animals for hypergravity and on the development of post-ischemic cerebrovascular phenomena.**

Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.

20(1):67-70; 1986.

[20 references; 2 in English]

Cardiovascular and Respiratory Systems, Tolerance, Acceleration, Ischemia  
Rats, Cats  
Hypergravity, Centrifugation; Countermeasures, Dibazol, Imidazoline

16. P250(4/86) Ulyatovskiy NV, Beregovoy GT, Beregovkin AV, Voronin LI, Yerebin AV, Yelizarov SYu.

**On using acceleration to model the physiological effects of weightlessness.**

In Kedrov BM and Kosmodem'yanskii AA, editors,

Nauchnoye tvorchestvo K.E. Tsiolkovskogo i sovremennoye razvitiye ego idey.

**[The scientific work of K.E. Tsiolkovskiy and modern development of his ideas].**

Moscow: Nauka; 1984: 64-66.

Cardiovascular and Respiratory Systems, Hemodynamic Effects  
Humans; Personnel Selection, Cosmonauts  
Weightlessness Simulations, G<sub>x</sub> Acceleration

ISSUE 6

17. P268(4/86) Toloknov AV, Bol'shakova TD, Vinnitskaya KB, Panteleymonov VA, Khitrov NK.

**Characteristics of sympathetic and parasympathetic mechanisms of cardiac regulation in rats undergoing conditioning and deconditioning with respect to physical exercise.**

Fiziologicheskii Zhurnal SSSR imeni I.M. Sechenova.

LXXI(12): 1630-1634; 1985.

[13 references; 7 in English]

First Moscow Medical Research Institute, Moscow

Cardiovascular and Respiratory Systems, Cardiac Regulation;  
Neurophysiology, Sympathetic and Parasympathetic Systems,  
Mediators, Norepinephrine, Acetylcholine

Rats

Physical Exercise, Conditioning, Deconditioning

18. P269(4/86) Meyerson FZ, Katkova LS.

**The effect of preliminary adaptation to short-term stress on resistance of spontaneous myocardial contractility to induced lipid peroxidation.**

Byulleten' Eksperimental'noy Biologii i Meditsiny.

1985(12): 659-661.

[11 references; 3 in English]

Cardiovascular and Respiratory Systems, Myocardia, Auricle; Metabolism,  
Lipid Peroxidation

Rats

Countermeasures, Pre-adaptation, Stress, Short-term

ISSUE 7

PAPERS:

19. P287(6/86)\* Doroshev VG.

**Venous pressure in the jugular veins and the effectiveness of return of blood to the right heart during a 120-day period of hyperkinesia with head-down tilt.**

Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.

20(2): 38-41; 1986.

[7 references; 1 in English]

Cardiovascular and Respiratory System, Venous Pressure, Jugular, Blood  
Return, Right Heart

Humans, Males

Hypokinesia, Head-down Tilt, Long-term

ISSUE 7

20. P288(6/86)\* Bystrov VV, Zhernavkov AF, Savilov AA.  
**Human cardiac function during the first hours and days of hypokinesia with head-down tilt (on the basis of echocardiographic data).**  
 Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.  
 20(2): 42-46; 1986.  
 [25 references; 11 in English]

Cardiovascular and Respiratory Systems, Echocardiography  
 Humans, Males  
 Hypokinesia, Head-down Tilt

21. P292(6/86)\* Demin AN, Belkaniya GS, Dartsmeliya BA.  
**Typology of monkeys in horizontal and upright positions based on parameters of central hemodynamics.**  
 Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.  
 20(2): 60-64; 1986.  
 [16 references; none in English]

Cardiovascular and Respiratory Systems, Central Hemodynamics, Impedance  
 Plethysmography  
 Primates, Rhesus Monkeys, Typology  
 Horizontal and Upright Positions

22. P308(6/86)\* At'kov OYu.  
**The state of cosmonauts' cardiovascular systems during long-term orbital flights.**  
 Byulleten' Vsesoyuznogo Kardiologicheskogo Nauchnogo Tsentra AMN SSSR.  
 VIII(2): 97-100; 1985.  
 [4 references; 3 in English]  
 All-Union Cardiological Scientific Center.

Cardiovascular and Respiratory Systems, Echocardiography, Hemodynamics  
 Humans, Cosmonauts  
 Space Flight, "Salyut-7", LBNP, Physical Exercise

**MONOGRAPH:**

23. M81(6/86) Ozolin' PP.  
 Adaptatsiya sosudistoy sistemy k sportivnym nagruzkam  
**[Adaptation of the vascular system to athletic training [literally, athletic loading]**  
 Riga: Zinatne; 1984.  
 [134 pages; 44 figures; 16 tables; 307 references; 129 in English]  
 Latvian Ministry of Public Health; Latvian Scientific Research Institute  
 of Experimental and Clinical Medicine

**Key words:** Cardiovascular and Respiratory Systems, Vascular Adaptation;  
 Physical Exercise, Athletes; Musculoskeletal System

ISSUE 8

PAPERS:

24. P320(8/86)\* Tikhonov MA, Asyamolova NM.

**Physiological mechanisms limiting external resistance to respiration.**

Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.

20(3): 45-49; 1986.

[14 references; 7 in English]

Cardiovascular and Respiratory Systems, Respiration; Neurophysiology,  
Neural Regulation  
Humans, Males  
Impeded Respiration

25. P325(8/86)\* Degtyarev VA, Kormer AY, Rogov VA, Tolpekin VYe,

Tsyganov LP, Ragozin VN, Shcherbakov YeYu, Kirillova ZA.

**Interpretation of kinetocardiograms of the right heart.**

Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.

20(3): 69-68; 1986.

[6 references; 1 in English]

Cardiovascular and Respiratory Systems, Kinetocardiogram, Right Heart  
Humans, Males; Patients, Myocardial Infarction  
Operational Medicine, Diagnosis

26. P327(8/86)\* Demin AN, Galustyan MV, Belkaniya GS, Dartsmeliya VA.

**Rheotacho-oscillographic recording of blood pressure in monkeys.**

Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.

20(3): 73-75; 1986.

[3 references; none in English]

Cardiovascular and Respiratory Systems, Blood Pressure Measurement  
Monkeys  
Measurement Technique, Rheotacho-oscillography

27. P340(8/86) Saudlya AP, Belkina LM, Markovskaya GI, Shimkovich MV.

**Cardiac contractility in animals undergoing long-term hypokinesia.**

In: Zor'kin, editor. *Metabolicheskiye protsessy pri nekotorykh ekstremal'nykh sostoyaniyakh* [Metabolic processes during exposure to certain extreme factors]. See M89, this issue.

Kishinev: Shtiintsa; 1985; 77-87.

Cardiovascular and Respiratory Systems, Contractility  
Rats  
Hypokinesia, Long-term; Psychology, Stress

ISSUE 8

28. P331(8/86)\* Gansburgskiy AN, Potapov PP.  
**Morphometric analysis of the endothelium of the aorta and serum lipids in rats undergoing hypokinesia.**  
 Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.  
 20(3): 82-83; 1986.  
 [9 references; 1 in English]

Cardiovascular and Respiratory Systems, Aorta Endothelium, Serum Lipids  
 Rats  
 Hypokinesia, Immobilization; Psychology, Stress

ISSUE 9

PAPERS:

29. P366(9/86) Bunyatin AM.  
**Electrical instability of the heart in animals exposed showing different degrees of tolerance of immobilization stress.**  
 Fiziologicheskii Zhurnal SSSR im. I. M. Sechenova.  
 LXXII(6): 757-761; 1986.  
 [17 references; 7 in English]  
 Affiliation: Laboratory of Experimental Cardiology, I.P. Anokhin  
 Scientific Research Institute of Normal Physiology, USSR Academy of  
 Medicine, Moscow

Cardiovascular and Respiratory Systems, Heart, Electrical Instability  
 Rats, Species and Individual Differences  
 Immobilization Stress, Tolerance

30. P376(9/86)\* Agadzhanyan NA, Krasnikov NP, Naydich SI.  
**Use of gas mixtures containing increased amounts of oxygen and CO<sub>2</sub> to normalize external respiration and acid-base balance in the blood in fatigue caused by physical exertion.**  
 Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.  
 20(4): 32-37; 1986.  
 [25 references; 11 in English]

Cardiovascular and Respiratory System, External Respiration; Hematology,  
 Acid-base balance  
 Humans, Athletes  
 Fatigue, Physical Exertion; Countermeasures, Hyperoxia, Hypercapnia

31. P386(9/86)\* Fomichev VI, To Nam Zen.  
**Central hemodynamic parameters during dry immersion of patients with borderline arterial hypertension.**  
 Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.  
 20(4): 73-74.  
 [4 references; 3 in English]

Cardiovascular and Respiratory Systems, Central Hemodynamics  
 Humans, Males, Patients, Arterial Hypertension  
 Hypokinesia, Immersion, Dry

32. P387(9/86)\* Belkaniya GS, Dartsmeliya VA.  
**The relationship between individual somatometric characteristics [i.e., body measurements] and functional characteristics of the cardiovascular system in horizontal and upright positions in healthy individuals and patients with arterial hypertension.**

Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.

20(4): 75-77; 1986.

[29 references; 2 in English]

Cardiovascular and Respiratory System, Functional Characteristics, Body Measurements

Humans, Males, Healthy, Patients, Arterial Hypertension

Horizontal and Upright Positions

33. P391(9/86)\* Gol'dovskaya MD, Mel'nichenko VP, Kulayev BS.  
**Orthostatic response of heart rhythm in alert Macaca mulatta monkeys.**

Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.

20(4): 86-88; 1986.

[4 references; 1 in English]

Cardiovascular and Respiratory Systems, Heart Rhythm

Primates, Macaca Mulatta

Postural Effects, Orthostatic Position

34. P393(9/86)\* Simonov LG, Gel'fenbeyn MS.  
**[The potential for] Ultrasound measurement of hemodynamic parameters of the cardiocerebrovascular system**

Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.

20(4): 8-16; 1986.

[64 references; 24 in English]

Cardiovascular and Respiratory System, Hemodynamic Parameters, Head

Review and Discussion Paper

Ultrasound Methodology

35. P399(9/86) Navakatikyan AO, Buzunov VA, Tile V, Frentsel' Kh.  
**The effect of hypodynamia and emotional stress on the physical work capacity for the circulatory and respiratory systems during physical exertion.**

Fiziologicheskii Zhurnal.

32(3): 278-284.

[19 references; 2 in English]

Authors' affiliation: Institute of Industrial Hygiene and Occupational Diseases, Ukrainian Ministry of Health; and E.M. Arndt University, Greiswald, GDR

Cardiovascular and Respiratory Systems, Physical Work Capacity, Exertion

Humans, Workers

Hypodynamia; Psychology, Emotional Stress

ISSUE 9

36. P406(9/86) Frolov VA, Chibisov SM, Kazanskaya TA.

**A possible mechanism underlying the occurrence of sudden cardiac death [death from myocardial infarction] during geomagnetic storms.**

Patologicheskaya Fiziologiya i Eksperimental'naya Terapiya.

1986(3): 31-35.

[7 references; 1 in English]

Authors' affiliation: Patrice Lumumba University of Friendship among Peoples

Cardiovascular and Respiratory Systems, Sudden Cardiac Death,  
Synchronization of Parameters; Biological Rhythms  
Chinchillas, Male  
Radiobiology, Electromagnetic Indices

37. P407(9/86) Meyerson FZ, Krasikov SI, Ustinova YeYe, Golubeva LYu.  
**Preventing cardiac damage in response to maximal physical exertion and increasing resistance to acute overloading by means of the antioxidant ionol.**

Kardiologiya.

XXVI(4): 70-74; 1986.

[11 references; 1 in English]

Authors' affiliations: Laboratory of Cardiac Pathophysiology, Institute of General Pathology and Pathophysiology, USSR Academy of Medicine, Moscow; Department of Biochemistry, Orenburg Medical Institute.

Cardiovascular and Respiratory Systems, Cardiac Damage, Resistance  
Rats  
Physical Exercise, Overloading, Countermeasures, Antioxidant, Ionol

## COSMONAUT TRAINING

### ISSUE 8

See Human Performance 6, 12; Nutrition 4; Psychology 4.

## DEVELOPMENTAL BIOLOGY

### ISSUE 6

See also Musculoskeletal System 8; Radiobiology 9.

### ISSUE 7

#### PAPER:

1. P295(6/86)\* Mishchenko VF, Shafirkin AV.

**Viability of quail embryos and nestlings from eggs exposed to gamma-radiation and vibration and stored for varying intervals.**

Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.

20(2): 72-77; 1986.

[15 references; 2 in English]

Developmental Biology, Viability; Life Support Systems, CELSS  
Quail, Eggs  
Longterm Storage, Vibration; Radiobiology, Ionizing Radiation

### ISSUE 9

#### PAPERS:

2. P381(9/86)\* Ananasenko ZI, Kuznetsova MA, Korotkova VYu.

**Behavioral responses of animals exposed to space flight conditions during the prenatal period.**

Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.

20(4): 55-59; 1986.

[25 references; 11 in English]

Developmental Biology; Psychology, Behavioral Responses; Neurophysiology,  
Prenatal Cortical Development  
Rats, Fetus  
Spaceflight, "Kosmos-1514"

3. P383(9/86)\* Denisova LA.

**The effects of weightlessness on skeletal development in the rat embryo.**

Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.

20(4): 60-63; 1986.

[2 references; 1 in English]

Developmental Biology, Musculoskeletal System, Skeletal Development  
Rats, Embryos, Neonates  
Spaceflight, "Kosmos-1514"

## ENDOCRINOLOGY

See also Adaptation 4; Biological Rhythms 2; Body Fluids 1, 5, 6; Metabolism 3, 5, 6; Musculoskeletal System 10, 14; Neurophysiology 5, 12; Radiobiology 8, 11, 18; Reproductive Biology 1.

### ISSUE 5

#### PAPER:

1. P203(2/86)\* Plakhuta-Plakutina GI, Savina YeA, Afonin BV.  
**Effects of prolonged centrifugation on the thyroid gland and C-cell system (morphological and biochemical investigation).**  
Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.  
19(6): 54-57; 1985.  
[6 references; 1 in English]

Endocrinology, Thyroid, C-cell System; Morphology and Cytology  
Rats  
Artificial Gravity, Centrifugation

### ISSUE 6

#### PAPERS:

2. P233(4/86)\* Vorotnikova YeV, Zagorskaya YeA.  
**Morphological and biochemical investigation of the state of adrenal cortex of rats undergoing long-term hypokinesia.**  
Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.  
20(1): 41-45; 1986.  
[26 references; 14 in English]

Endocrinology, Corticosterone; Morphology, Adrenal Cortex  
Rats, Female  
Hypokinesia, Long-term, Adaptation, Immobilization Stress

3. P272(4/86) Kaplanskiy AS, Vorotnikova YeV.  
**Functional state of the adrenal glands in rats undergoing hypokinesia**  
Byulleten' Eksperimental'noy Biologii i Meditsiny.  
1985 (12): 670-673.  
[13 references; 4 in English]  
Institute of Biomedical Problems, USSR Ministry of Health, Moscow

Endocrinology, Adrenal Glands, Corticosterone; Thymus; Morphology  
Rats, Male  
Hypokinesia, Longterm, Adaptation, Stress, Immobilization

ISSUE 6

4. P256(4/86) Neyzhmakova NA, Shafran LM.

**Individual and typological characteristics of the functioning of the sympathetic adrenal system as prognostic indicators of the functional state of the body under complex environmental conditions.**

Fiziologiya Cheloveka.

11(6): 903-909; 1985.

[26 references; 2 in English]

Affiliate of the Scientific Research Institute of Naval Hygiene, USSR Ministry of Health, Odessa.

Endocrinology, Sympathetic Adrenal System  
Humans, Sailors, Typology, Personnel Selection  
Human Performance, Stress, Monotony

ISSUE 9

PAPERS:

5. P390(9/86)\* Kalita NF, Tigranyan RA.

**Endocrine status of cosmonauts after long-term space flights.**

Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.

20(4): 84-86.

[6 references; 2 in English]

Endocrinology, Hormone Levels, Hypothalamus, Hypophysis, Adrenal  
Humans, Cosmonauts  
Spaceflight, Long-term Flights; Adaptation, Readaptation

6. P384(9/86)\* Alekseyev YeI.

**Functional state of adenohipophysial somatrophs of rats undergoing hypokinesia.**

Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.

20(4): 63-67; 1986.

[21 references; 6 in English]

Endocrinology, Hypophysis; Cytology, Somatrophs  
Rats  
Hypokinesia, Immobilization Stress

7. P385(9/86)\* Pchelenko LD.

**Regulation by norepinephrine of heat production and ATP utilization in a single muscular contraction under normal conditions and hyperoxia.**

Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.

20(4): 67-72; 1986.

[10 references; 4 in English]

Endocrinology, Norepinephrine, ATP Utilization; Musculoskeletal System,  
Muscle Contraction  
Rats  
Hyperoxia

## ENZYMOLGY

See Exobiology 9; Gastrointestinal System 1; Nutrition 2; Radiobiology 23

### ISSUE 6

#### PAPER:

1. P247(4/86)\* Drozdova TYe, Vetrova YeG.

**Enzymes in blood serum in response to a 7-day period of immersion.**

Kosmicheskoy Biologiya i Aviakosmicheskoy Meditsina.

20(1): 82-83; 1986.

[4 references; none in English]

Enzymology, Enzyme Activity

Humans, Males

Hypokinesia, Dry Immersion

### ISSUE 7

#### PAPERS:

2. P300(6/86)\* Medkova IL, Nikolayeva NM, Smirnov KV, Surinov BP.

**A method for measuring the activity of phospholipases in duodenal contents.**

Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.

20(2): 92-94; 1986.

[10 references; 3 in English]

Enzymology, Phospholipase Activity

Measurement Technique, Substrate

Duodenal Contents

3. P290(6/86)\* Popova IA.

**Activity of blood serum enzymes in healthy men during simulated weightlessness.**

Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.

20(2): 54-57; 1986.

[9 references; 5 in English]

Enzymology, Alkaline Phosphatase, Cholinesterase, Leucine Aminopeptase,  
Glutamyltransferase, Glutamate dehydrogenase

Humans

Simulated Weightlessness, Hypokinesia, Head-down Tilt, Horizontal

ISSUE 8

4. P309(8/86) Smirnov KV, Ruvina LG, Medkova IL, Struchkova TYa,  
Tolmacheva MYa.

**The functional state of the pancreas during long-term bedrest.**

Fiziologiya Cheloveka.

12(3): 499-502; 1986.

[9 references; 3 in English]

Enzymology, Pancreas

Humans, Males

Hypokinesia, Head-down Tilt, Bed rest

## EQUIPMENT AND INSTRUMENTATION

NOTE: THIS IS A NEW CATEGORY BEGINNING WITH ISSUE 8

See also Cardiovascular and Respiratory Systems 10, 26; Endocrinology 2; Habitability and Environment Effects 2; Human Performance 1, 14 ; Life Support Systems 2; Metabolism 8; Musculoskeletal System 7, 11; Neurophysiology 18; Radiobiology 10.

### ISSUE 8

#### PAPER:

1. P328(8/86)\* Gritsuk AI, Danilova IG.

**A cage for simulating long-term hypokinesia in rats.**

Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.

20(3): 75-78; 1986.

[13 references; none in English]

Equipment and Instrumentation, Hypokinesia, Immobilization Cage,  
Rats  
Metabolism; Musculoskeletal Systems. Tissue Respiration, Oxidative  
Phosphorylation

### ISSUE 9

#### PAPERS:

2. P388(9/86)\* Magedov VS, Koryakov YuS.

**A special purpose device for magnetic recording of physiological information for experiments on biosatellites.**

Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.

20(4): 79-80; 1986.

[7 references; 2 in English]

Equipment and Instrumentation, Magnetic Tape Recording Device  
Physiological Signals  
Biosatellites

## EXO BIOLOGY

See also Space Biology and Medicine 2.

### ISSUE 5

#### PAPER:

1. P189(2/86) Loginova LG.

**Extremely thermophilic bacteria living at temperatures greater than 100°.**

Seriya Biologicheskaya.

1985(5): 700-714.

[27 references; 23 in English]

Institute of Microbiology, USSR Academy of Sciences, Moscow.

Exobiology

Microbiology, Bacteria, Thermophilic

High Temperatures

#### MONOGRAPHS:

2. M63(2/86) Rubtsov VV, Ursul AD.

Problema vnezemnykh tsivilizatsii (Filosofsko-metodologicheskiye aspekty)

**[The problem of extraterrestrial civilizations (Philosophical and methodological aspects.)]**

Kishinev: Shtiintsa; 1984.

[262 pages]

Moldavian Academy of Sciences

**Key Words:** Exobiology, SETI, Theoretical Discussion, Interstellar Communication

3. M56(2/86) Zavarzin GA.

Bakterii i sostav atmosfery.

**[Bacteria and the composition of the atmosphere].**

Moscow: Nauka; 1984.

[199 pp.]

USSR Academy of Sciences

**Key Words:** Exobiology, Origin of Life; Microbiology, Bacteria; Biochemistry, Atmospheric Components; Biospherics, Ecology

#### CONFERENCE REPORT:

4. CR1(2/86) Report on All-Union Conference on "Contemporary Problems in Evolutionary Biochemistry and the Origin of Life"

Ortoshchenko VA.

In: Uspekhy Sovremennoy Biologii.

100(5): 316-317; 1985.

ISSUE 6

MONOGRAPHS:

5. M68(4/86) Ratner VA, Zharkikh AA, Kolchanov NA, et al.  
Problemy teorii molekulyarnoy evolyutsii  
[Problems in the theory of molecular evolution].  
Novosibirsk: Nauka; 1985.  
[ca. 250 pages; 338 references]  
Institute of Cytology and Genetics, Siberian Division, USSR Academy of Sciences

**Key Words:** Exobiology, Molecular Evolution; Genetics, Origin of Molecular-Genetic Systems; Mathematical Modeling

6. M73(4/86) Surkov YuA.  
Kosmicheskiye issledovaniye planet i sputnikov  
[Flight investigations of planets and /their/ satellites].  
Moscow: Nauka; 1985.  
[309 pages; 55 tables; 132 illustrations; 557 references]  
V.I. Vernadskiy Institute of Geochemistry and Analytic Chemistry (Winner of the Order of Lenin), USSR Academy of Sciences

**Key Words:** Exobiology, Planetary Environments, Planetary Atmospheres, Planetary Surfaces, Mars, Jupiter, Saturn, Venus, Mercury, Planetary Satellites, Spectrometry

ISSUE 7

PAPER:

7. P280(6/86) Kuzicheva YeA, Tsupkina NV.  
Nonbiological synthesis of uridine nucleotides under space flight conditions in the "Salyut-7" orbital station.  
Zhurnal Evolyutsionnoy Biokhimi i Fiziologii  
XXII(1): 17-23; 1986.  
[15 references; 4 in English]  
Institute of Cytology, USSR Academy of Sciences, Leningrad

Exobiology, Origin of Life  
Uridine Nucleotides, Nonbiological Synthesis  
Space Flight, "Salyut-7"; Radiobiology, Ultraviolet Radiation

ISSUE 8

PAPERS:

8. P342(8/86) Boychenko, YeA.

**The participation of iron-sulphur proteins in the evolution of carbon dioxide reductases.**

Zhurnal Evolyutsionnoy Biokhimii i Fiziologii.

22(3): 221-225; 1986.

[15 references; 7 in English]

Affiliation: V.I. Vernadskiy Institute of Geochemistry and Analytic Chemistry, USSR Academy of Sciences, Moscow

Exobiology, Evolution, Aerobiosis  
Carbon Dioxide Reductases  
Iron-sulphur Proteins

9. P343(8/86) Karasev VA, Stefanov VYe.

**Recombination and selection of active duplicated structure as a possible path of prebiological evolution of enzymes.**

Zhurnal evolyutsionnoy biokhimii i fiziologii.

22(3):226-232; 1986.

[15 references; 3 in English]

Affiliation; Department of Molecular Biotechnology; Leningrad Technological Institute, Leningrad

Exobiology  
Enzymes  
Evolution, Prebiological

10. P347(8/86) Imshenetskiy AA, Lysenko SV, Petrukhina TYu, Sizova TP.  
**On the taxonomic classification of microorganisms isolated from the stratosphere and mesosphere.**

Mikrobiologiya.

55(1): 113-115; 1986.

[20 references; 12 in English]

Affiliation: Institute of Microbiology, USSR Academy of Sciences. Moscow; M.V. Lomonosov Moscow State University

Exobiology, Life in Space  
Microbiology, Conidia, Fungi, Bacteria  
Stratosphere and Mesosphere

MONOGRAPH:

11. M92(8/86) Belenkina NS.

Arena biologicheskoy evolyutsii. Sbornik. (Novoye v zhizni, nauke, tekhnike. Ser. "Biologiya")

[**The arena of biological evolution. A collection.** (Innovations in life, science and technology. "Biology" Series)]

Moscow: Znaniye; 1986.

[64 pages]

**Key Words:** Exobiology, Biospherics, Genetics, Evolution of Life

## GASTROINTESTINAL SYSTEM

See also Radiobiology 14, 22

ISSUE 8

PAPER:

1. P344(8/86) Smirnov KV.

**The effects of microgravity on the digestive system [Literally: On the role of the gravitational factor in production of changes in the digestive system.**

Fiziologicheskiy Zhurnal SSSR imeni I.M. Sechenova.

LXXII(4): 484-489; 1986.

[13 references; none in English]

Gastrointestinal System, Enzymology, Proteolytic Enzymes

Rats

Space Flight, "Cosmos-782," "-936," "-1129," Artificial Gravity

## GENETICS

See also Botany 5, 8, 9; Exobiology 11; Radiobiology 3, 16, 17, 19.

### ISSUE 8

#### PAPERS:

1. P315(8/86) Bobkova NN.

**Frequency of sister chromatid exchange in blood cells during long-term hypokinesia.**

Fiziologiya Cheloveka.

12(3): 503-505; 1986.

[25 references; 12 in English]

Genetics, Sister Chromatid Exchange, Hematology, Leukocytes  
Humans, Males  
Hypokinesia, Head-down Tilt, Long-term; Countermeasures, Exercise,  
Isometric

2. P329(8/86)\* Chabala LI.

**Functional and structural transformation of chromosomes in various proliferating hemopoietic cells in the bone marrow of white rats.**

Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.

20(3): 78-80; 1986.

[14 references; 8 in English]

Genetics, Chromosome Transformation; Hematology, Hemopoietic Cells,  
Bone Marrow  
Rats  
Splenectomy, Hypoxia

## GROUP DYNAMICS

See also Human Performance 6.

### ISSUE 5

#### PAPER:

1. P215(2/86)\* Terelkin Ya (Poland).

**Dynamics of informal structure of small dedicated groups under conditions of stress due to social isolation in the fields.**

Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.

19(6): 69-73.

[18 references; 7 in English]

Group Dynamics, Informal Structure; Psychology  
Small Isolated Group, Polar Expedition Members  
Interpersonal Rating Scales

### ISSUE 8

#### PAPER:

2. P345(8/86) Tsukanova YeV.

**Experimental investigation of impeded communication under conditions of time pressure. Part II. Types of creative personal communication arising during interaction in the presence of extreme factors.**

In: Novyye issledovaniya v psikhologii. [New research in psychology].

Moscow: Pedagogika; 1985. pp. 52-59.

Affiliation: N.V. Gogol' State Pedagogic Institute, Nezhin??.

Group Dynamics, Communication  
Humans, Individual Differences, Extroversion, Neurosis  
Extreme Conditions, Time Pressure

## HABITABILITY AND ENVIRONMENT EFFECTS

See also Adaptation 1; Immunology 2.

### ISSUE 5

#### PAPERS:

1. P207(2/86)\* Dubinin DM, Naydina VP, Zaloguyev SN.  
**Using chromatography to evaluate the status of human skin in a hermetically sealed living space.**

Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.

19(6): 69-73.

[18 references; 7 in English]

Habitability and Environment Effects, Hermetically Sealed Environment;  
Life Support Systems  
Humans, Males  
Skin Oils

2. P208(2/86)\* Ushakov VF, Solomin GI, Tikhonova GP, Gorshunova AI, Lyubarskaya II, Marchenko LV, Chukhnoy EI, Ostasheva NYe, Demchenko YeA, Pashin SS.

**Evaluation of the toxicity of gases emitted by heated thermally stable tetrafluorethylene-based polymers.**

Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.

19(6): 73-77.

[8 references; 2 in English]

Habitability and Environment Effects; Toxicity  
Mice, Rats  
Polymers, Tetrafluorethylene-based, Heated

3. P216(2/86)\* Solomin GI.  
**A multicriterion approach to the toxicological and hygienic evaluation of polymers used in construction.**

Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.

19(6): 4-11; 1985.

[28 references; 6 in English]

Habitability and Environment Effects, Toxicity  
Review Article  
Polymers, Spacecraft Cabins, Heated

## HABITABILITY AND ENVIRONMENT EFFECTS

### ISSUE 6

#### PAPER:

4. P241(4/86)\* Novikova ND, Orlova MI, D'yachenko MB.  
**Investigation of the reproductive capacity of microflora on polymer materials used in hermetically sealed cabins.**

Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.

20(1): 71-73; 1986.

[6 references; 1 in English]

Habitability and Environment Effects, Microflora Growth  
Microbiology, Bacteria  
Polymer Materials, Environmental Moisture

### ISSUE 7

#### PAPER:

5. P297(6/86)\* Knyazev VM, Korol'kov VI, Viktorov AN, Pozharskiy GO, Petrova LN, Gorshkov VP.

**Hygienic microbiological aspects of shared habitation of a hermetically sealed living space by humans and animals.**

Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.

20(2): 80-82; 1986.

[10 references; 2 in English]

Habitability and Environmental Effects, Hermetically Sealed Environment  
Humans, Dogs  
Microbiology, Microflora

### ISSUE 8

#### PAPER:

6. P334(8/86)\* Yasnetsov VV, Chukayev VV, Karsanova SK, Polkov VL.

**On the protective effects of endogenous morphine-like substances on acute hypoxia in mice.**

Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.

20(3): 87-88; 1986.

[13 references; 4 in English]

Habitability and Environment Effects, Hypoxia  
Mice  
Countermeasures, Morphine-like Substances, Agonists and Antagonists

## HABITABILITY AND ENVIRONMENT EFFECTS

### ISSUE 9

#### PAPERS:

7. P375(9/86)\* Lekarev AV.

**Visual-optic evaluation of the threshold values of distortion of objects due to lens defects in the flat windows of transport vehicles.**

Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.

20(4): 29-32; 1986.

[7 references; 3 in English]

Habitability and Environment Effects, Visual Distortion  
Humans, Operators  
Windows, Lens Defects

8. P389(9/86)\* Sukhorukov OA, Azarova MV, Avetisyants BL.

**Evaluation of a methodology for sampling and concentrating trace contaminants from the air.**

Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.

20(4): 81-83; 1986.

[7 references; 1 translated from English]

Habitability and Environment Effects, Atmospheric Contaminants  
Methodology Evaluation  
Sampling and Concentration

## HEALTH AND MEDICAL TREATMENT

NOTE: STARTING WITH ISSUE 8, MATERIAL PREVIOUSLY INCLUDED IN THIS CATEGORY IS INCLUDED IN A NEW CATEGORY CALLED "OPERATIONAL MEDICINE"

See also Radiobiology 6; Space Medicine and Biology 1, 2.

### ISSUE 5

#### MONOGRAPH

1. M57(2/86) Mizun YuG, Mizun PG.

Kosmos i zdorv'ye.

[Space and health].

Moscow: Znaniye; 1984.

[144 pp.]

Laboratory of Polar Geophysics, USSR Academy of Sciences (first author); Uzhgorod University Medical School (second author)

**Key Words:** Health and Medical Treatment, Bioeffects; Space Factors, Magnetic Fields and Storms, Solar Storms; Radiobiology, Radiation

#### PAPER:

2. P276(4/86) Kuznets YeI, Zinochkin VA, Opryshko AV, Utekhin BA, Chadov VI, Yakovleva EV.

**Some conclusions and prospects for work in the area of thermal physiology applied to the performance of research on [man in] space.**

In Kedrov BM and Kosmodem'yanskii AA, editors,

Nauchnoye tvorchestvo K.E. Tsiolkovskogo i sovremennoye razvitiye ego idey

[The scientific work of K.E. Tsiolkovskiy and modern development of his ideas].

Moscow: Nauka; 1984:73-76.

[6 references; none in English]

Health and Medical Treatment, Hyperthermia, Monitoring Humans, Cosmonauts Equipment and Instrumentation, Measurement Techniques

## HEMATOLOGY

See also Adaptation 5; Biospherics 1; Cardiovascular and Respiratory Systems 30; Genetics 1, 2; Radiobiology 7, 11, 14; Space Biology and Medicine 1.

### ISSUE 5

#### PAPER:

1. P190(2/86) Abdraymova SM, Koshkenbayev BKh, Maksimenko VB, Tazhibayev ShS.

**Hypokinesia, nutrition and lipid metabolism. The effects of protein and vitamin deficiencies on blood serum lipids and lipoproteins during exposure to hypokinesia.**

Voprosy meditsinskoy khimii.

31(5): 87-91; 1985.

[12 references; 7 in English]

Kazakh Affiliate of the Institute of Nutrition, USSR Academy of Medical Sciences, Alma-Ata

Hematology, Lipids, Lipoproteins; Metabolism

Rats

Nutrition, Deficiencies, Protein, Vitamin; Hypokinesia

2. P199(2/86)\* Vlasova TF, Miroshnikova YeB, Ushakov AS.

**The effect of diminished motor activity on the concentration of alanine in human blood plasma.**

Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.

19(6): 37-39; 1985.

[19 references; 9 in English]

Hematology, Alanine

Humans, Males

Hypokinesia, Head-down Tilt

### ISSUE 6

#### PAPERS:

3. P232(4/86)\* Verigo VV, Gauzer F (Czechoslovakia).

**[Modeling] cyclic processes in blood cell kinetics.**

Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.

20(1): 38-41; 1986.

[23 references; 15 in English]

Hematology, Erythropoiesis, Cyclic Processes; Metabolism

Humans

Mathematical Modeling

ISSUE 6

4. P275(4/86) Krichevskaya AA, Shugaley VS, Ananyan AA, Zigova IG.  
**Evaluation of the protective effects of arginine in cold stress.**

Voprosy Meditsinskoy Khimii.

31(6): 50-54; 1985.

[21 references; 7 in English]

Department of Biochemistry and Laboratory for Ecological Adaptation of Animals to Extreme Environmental Factors, Rostov University, Rostov-na-Donu.

Hematology, Erythrocyte Membrane, Permeability

Rats

Adaptation, Cold; Pharmacology, Countermeasures, Arginine

ISSUE 7

PAPER:

5. P291(6/86)\* Lavrov VI, Goncharov IB, Davydkin AF, Ivanov AP, Romanov AN, Ivchenko VF.

**[Results of] Paramecium test for toxic substances in the blood of men undergoing simulated weightlessness.**

Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.

20(2): 58-59; 1986.

[12 references; none in English]

Hematology, Blood Toxicity, Paramecium Test

Humans

Weightlessness, Simulated, Hypokinesia, Head-down Tilt, Immersion

ISSUE 8

PAPERS:

6. P318(8/86)\* Bugrov SA, Kiselev RK, Beleda RV, Plakhatnyuk VI, Artamonov NN, Ivanchikov AP, Tsyganok VA.

**Blood lipids and incidence of hyperlipemia in flight crews.**

Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.

20(3): 39-43; 1986.

[20 references; 7 in English]

Hematology, Blood Lipids, Hyperlipemia

Humans, Flight Crews, Cardiovascular Disorders

Operational Medicine, Diagnosis

ISSUE 8

7. P321(8/86)\* Goncharov IB, Ivanov AP, Davydkin AF, Kudryashova ZhM.  
**The effect of hemodialysis on the rheological properties of blood during a 7-day period of hypokinesia with head-down tilt and in *in vitro* studies.**  
 Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.  
 20(3): 50-53; 1986.  
 [13 references; 4 in English]

Hematology, Hemorheology  
 Humans, Males  
 Hemodialysis, Hypokinesia, Head-down Tilt

ISSUE 9

PAPERS:

8. P369(9/86) Shchukina MYa.  
**Lactic acid concentration in the blood and erythropoiesis as a response to hypoxia**  
 Fiziologicheskii Zhurnal SSSR im. I.M. Sechenova.  
 LXXII(5): 668-673; 1986.  
 [20 references; 3 in English]  
 Affiliation: Institute of High Altitude Physiology and Experimental Pathology, Kirghiz SSR Academy of Sciences, Frunze

Hematology, Lactic Acid, Erythropoiesis  
 Rats, Males  
 Hypoxia, Anemic, High Altitude

9. P382(9/86)\* Kiselev RK, Chayka AM, Legen'kov VI.  
**The effects of coamide [a cobalt derivative] and folicobalamine [a mixture of vitamin B<sub>12</sub> and folic acid] on erythropoiesis under normal living conditions and during hypokinesia with head-down tilt.**  
 Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.  
 20(4): 48-53; 1986.  
 [11 references; 4 in English]

Hematology, Erythropoiesis  
 Humans, Males  
 Hypokinesia, Head-down Tilt: Countermeasures, Coamide, Nutrition, Vitamin B<sub>12</sub>, Folic Acid Cosmonaut Rations

## HUMAN PERFORMANCE

See also Biological Rhythms 1; Cardiovascular and Respiratory Systems 12; Life Support Systems 8; Metabolism 5; Musculoskeletal System 9; Neurophysiology 15; Operational Medicine 3; Perception 1; Psychology, all entries.

### HUMAN PERFORMANCE

#### ISSUE 5

#### PAPERS:

1. P209(2/86)\* Karpov BA, Pudov AI.

**An apparatus for investigating simultaneous performance of visual tracking and verbal communication tasks.**

Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.  
19(6): 79-82; 1985.

[1 reference; none in English]

Human Performance, Visual Tracking, Verbal Tasks; Psychology  
Humans, Cosmonauts and Pilots  
Equipment and Methodology

2. P219(2/86) Nazhivin YuS, Volkov VP.

**Characteristics of self-regulation and work capacity in the human operator during long-term exposure to psychological and physical stress.**

In: Zabrodin YuM, editor.

Problemy diagnostiki i upravleniya sostoyaniyem cheloveka-operatora  
[Problems in diagnosis and control of the state of human operators].

Abstracts of scientific papers of an All-Union Conference.

Moscow: Tsentral'nyy Sovet Obshchestva Psikhologov SSSR  
[Central Committee of the USSR Society of Psychologists]; 1984.

Human Performance, Self-regulation, Work Capacity  
Humans, Operators, Men and Women  
Stress, Long-term, Psychological and Physical, Exercise; Adaptation

#### MONOGRAPH:

3. M61(2/86) D'yachenko MI, Kandybovich LA, Ponomarenko VA.

Gotovnost' k deyatelnosti v napryazhennykh situatsiyakh:

Psikhologicheskiy aspekt.

**[Readiness to act in stressful situations: The psychological component].**

Minsk: Universitetskoye Izdatel'stvo; 1985.

[206 pages; 10 tables; no figures; 50 references; none in English]

Affiliation: Not available

**Key Words:** Human Performance, Pilots, Stress; Psychology

ISSUE 6

MONOGRAPH:

4. M76(4/86) Volkov VG, editor.

Metodika i tekhnika issledovaniy operatorskoy deyatel'nosti

[**Methodology and technology in the study of operator performance**].

Moscow: Nauka; 1985.

[102 pages; 2 tables 37 illustrations; 113 references]

Institute for Higher Nervous Activity and Neurophysiology, USSR Academy of Sciences

**Key Words:** Human Performance, Operator Performance, Operator Learning; Psychology, Psychophysics, Psychometrics, Stress, Biofeedback; Neurophysiology

ISSUE 7

PAPER:

5. P286(6/86)\* Kornilova LD, Smirichevskiy LD, Trutnev AV, Chekanova SL, Yakovleva IYa, Kravchenko SL.

**Job performance (literally: professional work capacity) and functional state of an operator exposed to repeated optokinetic stimulation and head-down tilt.**

Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.

20(2): 35-38; 1986.

[12 references; 1 in English]

Human Performance, Job Performance; Perception; Psychology, Functional State

Humans, Operators

Optokinetic Stimulation, Head-down Tilt; Neurophysiology, Vestibular Tolerance

CONFERENCE REPORT:

6. CR2(6/86) **Report on XV Gagarin Lectures -- Problems in Space and Aviation Psychology.**

Krylova NV.

In: Psikhologicheskiy Zhurnal.

7(2): 158-161.

**Key Words:** Human Performance, Cosmonaut Performance, Performance Evaluation, Information Processing, Pursuit Tracking, ; Psychology, Space Psychology, Functional States, Psychophysical Assessment, Autogenic Training, Cosmonaut Training; Perception, Spatial Orientation, Signal Detection; Personnel Selection; Small Groups, Crew Compatibility

ISSUE 8

PAPERS:

7. P317(8/86)\* Khachatur'yants LS, Yepishkin AK.

**Work capacity of operators with a tracking system under conditions of hypokinesia with head-down tilt.**

Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.  
20(3): 36-39; 1986.

[17 references; none in English]

Human Performance, Tracking  
Humans, Operators, Males, Typology  
Hypokinesia, Head-down Tilt; Neurophysiology, Central Nervous System

8. P351(8/86) Stepanova LP, Rozhdestvenskaya VI.

**Characteristics of work capacity during performance of a monotonous task.**

Voprosy Psikhologii.

1986(3): 121-127.

[21 references; none in English]

Human Performance, Work Capacity, Assembly Line Task  
Humans, Operators  
Monotony

9. P355(8/86) Dikaya LG.

**Characteristics of regulation of an operator's functional state during adaptation to special conditions.**

In:Lomov BF, Zabrodin YuM.

Psikhologicheskiye problemy deyatel'nosti v osobykh usloviyakh

**[Psychological problems of performance under special conditions].**

Moscow: Nauka; 1985. (See abstract M86, this issue.)

[pages 63-90; 29 references; 3 in English]

Human Performance, Psychology, Functional State; Neurophysiology, EEG  
Humans, Operators  
Adaptation, Special Conditions, Fatigue, Sleep Deprivation

MONOGRAPHS:

10. M86(8/86) Lomov BF, Zabrodin YuM.

Psikhologicheskiye problemy deyatel'nosti v osobykh usloviyakh

**[Psychological problems of performance under special conditions].**

Moscow: Nauka; 1985.

[232 pages; 35 figures; 13 tables; 262 references; 25 in English]

Affiliation: Institute of Psychology, USSR Academy of Sciences

**Key Words:** Psychology, Stress, Functional State, Self-regulation,  
Training, Human Performance, Operators, Extreme Conditions, Work Capacity,  
Man-machine Systems

ISSUE 8

11. M90(8/86) Medvedev VI, editor.

Fiziologicheskoye mekhanizmy optimizatsii deyatel'nosti  
[Physiological mechanisms for optimizing performance]

Leningrad: Nauka; 1985.

[134 pages; 21 tables; 12 figures; 341 references]

Affiliations: Scientific Council of the USSR Academy of Sciences and  
Academy of Medicine on Human Physiology; I.M. Sechenov Institute of  
Evolutionary Physiology and Biochemistry

**Key Words:** Human Performance, Man-machine Systems, Job Performance,  
Psychophysics, Stress, Fatigue, Personnel Selection

12. M94(8/86) Popovich PR, Gubinskiy AI, Kolesnikov GM.

**Ergonomic support of cosmonaut performance.**

Moscow: Mashinostroyeniye; 1985.

[272 pages; illustrated]

**Key Words:** Human Performance, Cosmonauts, Systems Analysis, Man-  
machine Systems, Cosmonaut Training, Mathematical Modeling, Personnel  
Selection

ISSUE 9

PAPERS:

13. P363(9/86) Bayevskiy RM, Semenova TD.

**Evaluation of the functional state of an operator undergoing sensory  
deprivation.**

Fiziologiya Cheloveka.

12(4): 676-678; 1986.

[12 references; none in English]

Human Performance, Functional State, Psychological Work Capacity,  
Neurophysiology, Autonomic, Sympathetic and Parasympathetic Nervous  
Systems; Cardiovascular and Respiratory Systems, Cardiac Parameters;  
Adaptation, Monotony

Humans, Operators

Perception, Sensory Deprivation

14. P370(9/86)\* Oboznov AA, Boyarskiy AN, Buturlin AI.

**Psychophysiological aspects of color coding of flight and navigational  
information on on-board (airborne) electronic displays.**

Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.

20(4): 16-19; 1986.

[10 references; 5 in English]

Human Performance, Piloting; Psychology, Psychophysical Parameters  
Humans, Pilots

Equipment and Instrumentation, Instrument Displays; Perception, Color  
Coding

ISSUE 9

15. P371(9/86)\* Epishkin AK, Skrypnikov AI.

**Prediction of operators' work capacity during prolonged uninterrupted work periods.**

Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.

20(4):19-22; 1986.

[9 references; none in English]

Human Performance, Sensorimotor, Pursuit and Tracking; Neurophysiology,  
EEG Parameters

Humans, Operators

Fatigue, Uninterrupted Work, Sleep Deprivation; Countermeasures, Autogenic  
Training

## IMMUNOLOGY

See also Biospherics 1; Radiobiology 9.

### ISSUE 6

#### PAPER:

1. P236(4/86)\* Mirrakhimov MM, Kitayev MI, Khamzamulin RO, Tokhtabayev AG, Pogrebitskiy SM.

**T- and B-lymphocyte types of immunity in acute altitude sickness.**

Kosmicheskoy Biologiya i Aviakosmicheskoy Meditsina.

20(1): 53-56; 1986.

[19 references; 11 in English]

Immunology, T- and B-lymphocyte Immunity  
Humans, Males, Typology  
Adaptation, High Altitude, Altitude Sickness

### ISSUE 8

#### PAPER:

2. P311(8/86) Surkina ID, Orlova ZS, Orlova GS, Borodin YuV, Dobrina SK, Shestakova SV, Kotelevtsev SV.

**Changes in immunity under stress.**

Fiziologiya Cheloveka.

12(3): 460-464; 1986.

[26 references; 15 in English]

Affiliation: All-Union Scientific Research Institute of Physical Culture, Moscow; Lomonosov State University, Moscow

Immunology, Immunity, T-cells, Cell Membrane, Alpha-tocopherol  
Humans, Athletes, Skaters, Men and Women  
Psychology, Stress; Physical Exercise, Countermeasures; Nutrition

3. P349(8/86) Asadullayev MM.

**Clinical immunological changes in vibration sickness.**

Gigiyena Truda i Professional'nyye Zabolevaniye.

1986(3): 54-56.

[9 references; 4 in English]

Affiliation: Institute of Sanitation, Hygiene, and Occupational Diseases, Ministry of Health of the Uzbek SSR, Tashkent.

Immunology, B- and T-lymphocytes  
Humans, Males, Patients  
Habitability and Environment Effects, Vibration Sickness

ISSUE 9

PAPERS:

4. P401(9/86) Shubik VM, Pul'kov VN, Mashneva NI.

**Immunological parameters following physical exercise under chronic exposure to radioactive and non-radioactive toxic chemicals.**

Gigiyena i Sanitariya.

1986(7): 39-41; 1986.

[2 references; none in English]

Affiliation: Leningrad Scientific Research Institute of Radiation Hygiene, RSFSR Ministry of Health

Immunology, Non-specific Immunity, Humoral Factors

Mice

Physical Exercise, Stress; Radiobiology, Radioactive Chemicals; Toxic Chemicals

## LIFE SUPPORT SYSTEMS

See also Botany 6; Developmental Biology 1; Habitability and Environment Effects 1.

### ISSUE 5

#### PAPER:

1. P211(2/86)\* Strogonova LB.  
**Methodological issues relevant to conducting ground tests of thermal regulation systems for manned craft.**

Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.  
19(6):82-83; 1985.

[2 references; none in English]

Life Support Systems, Thermal Regulation Systems; Mathematical Modeling  
Methodological Issues  
Design, Development, Testing

### ISSUE 7

#### PAPER:

2. P296(6/86)\* Polyakov SV, Volgin VD, Sinyak YuYe, Maksimov YeD, Novikov VI.

**Reclamation of wash water on long-term space flights by means of reverse osmosis.**

Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.  
20(2): 78-80: 1986.

[5 references; none in English]

Life Support Systems, Water Reclamation  
Technique Demonstration  
Reverse Osmosis

3. P302(6/86)\* Polonskiy VI, Lisovski GM.  
**Techniques for creating rapid growth strains of wheat for human life support systems.**

Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.  
20(2): 96; 1986.

Life Support Systems, CELSS  
Botany, Wheat, Strain Development  
Light Tolerance, Photosynthesis

## ISSUE 7

## MONOGRAPH:

4. M78(6/86) Kovrov BG, Kordyum VA, editors.

Mikroorganizmy v iskusstvennykh ekosistemakh  
[Microorganisms in artificial ecosystems].

Novosibirsk: Nauka; 1985.

[192 pages]

Institute of Biophysics, Siberian Division, USSR Academy of Sciences

**Key Words:** Life Support Systems, CELSS, Microbiology, Chlorella, Algae, Closteriopsis, Bacteria, Yeast, Botany, Crepis, Arabidopsis Welsh Onion, Orchid, Pea, Wheat, Space Flights, "Salyut-6," "Salyut-7," Mathematical Modeling

## ISSUE 8

## PAPERS:

5. P314(8/86) Popova AF, Kordyum YeL, Nechitaylo GS.

**Submicroscopic organization of chlorella cells growing in space for 9 days on "Salyut-6."**

In: Kovrov BG, Kordyum VA, editors.

Mikroorganizmy v iskusstvennykh ekosistemakh.

[Microorganisms in artificial ecosystems].

Moscow: Nauka; 1985.

[Pages 66-71; 18 references; none in English]

Life Support Systems, CELSS, Viability  
Microbiology, Chlorella  
Space Flight Factors, "Salyut-6"

6. P353(8/86) Sidorenko PG, Martyn GM, Mikeladze GG, Podlutskiy AG.  
**Potential for using cell cultures of higher plants in a life support system.**

In: Kovrov BG, Kordyum VA, editors.

Mikroorganizmy v iskusstvennykh ekosistemakh.

[Microorganisms in artificial ecosystems].

Moscow: Nauka; 1985. See M78, Issue #7.

[pages 117-121; 7 references; none in English]

Life Support Systems, CELSS; Nutrition  
Botany, Higher Plants, Soy, Peas, Cabbage, Broccoli, Dill, Basil,  
Jerusalem Artichokes, Cell Cultures  
Cultivation Conditions, Sensory Characteristics, Chemical Composition

ISSUE 8

7. P354(8/86) Antonyan AA, Sukhova NN.

**Evaluating the composition of the biomass of Chlorella and its energy content in a model of a "man-algae-mineralization" life support system.**

In: Kovrov BG, Kordyum VA, editors.

Mikroorganizmy v iskusstvennykh ekosistemakh.

**[Microorganisms in artificial ecosystems].**

Moscow: Nauka; 1985.

[pages 134-137; no references]

Life Support Systems, CELLS

Botany, Microbiology, Algae, Chlorella

Nutrition, Heat of Combustion

MONOGRAPH:

8. M91(8/86) Glushko AA.

Kosmicheskiye systemy zhizneobespecheniya: Biofizicheskiye osnovy proyektirovaniya i ispytaniya.

**[Space Life Support Systems: Biophysical principles of design and testing].**

Moscow: Mashinostroyeniye; 1986.

[304 pages]

Affiliation: Not cited.

**Key Words:** Life Support Systems, Cosmonauts, Water, Food, Heating; Metabolism, Homeostasis; Biophysics; Work Capacity, Exercise; Body Fluids, Nutrition

ISSUE 9

PAPERS:

9. P394(9/86) Manukovskiy NS, Abrosov NS, Kosolapova LG.

**A mathematical model of the oxygenation of wheat straw by microorganisms.**

In: Kovrov BG and Kordyum VA, editors,

Mikroorganizmy v iskusstvennykh ekosistemakh

**[Microorganisms in artificial ecosystems].**

Novosibirsk: Nauka; 1986. See Digest Issue # 7 M78.

[pp. 166-171]

Life Support Systems, CELSS, Substrate Oxygenation, Cellulose, Lignin

Botany, Wheat Straw; Microbiology, Microorganisms

Mathematical Model

ISSUE 9

10. P393(9/86) Shepelev YeYa, Shaydorov YuI, Popov VV.  
**Microbiological decomposition of plant wastes on a solid substrate under artificial conditions.**

In: Kovrov BG and Kordyum VA, editors,  
Mikroorganizmy v iskusstvennykh ekosistemakh  
[Microorganisms in artificial ecosystems].  
Novosibirsk: Nauka; 1986. See Digest Issue # 7 M78.  
[pages 176-183; 8 references; none in English]

Life Support Systems, CELSS  
Botany, Higher Plants, Wheat, Straw; Microbiology, Decomposition  
Substrate

11. P397(9/86)\* Sidorenko PG, Zhad'ko SI, Popova AF, Karnaukh IM, Il'in VP.  
**On the adaptation of one-celled algae and tissue cultures of higher plants to microgravity.**

In: Kovrov BG and Kordyum VA, editors,  
Mikroorganizmy v iskusstvennykh ekosistemakh  
[Microorganisms in artificial ecosystems].  
Novosibirsk: Nauka; 1986.  
[pages 61-66; 4 references; none in English]

Life Support Systems, CELSS  
Microbiology, Microorganisms, Chlorella; Botany, Haplopappus, Metabolism  
Adaptation, Microgravity, Clinostatting

## MAN-MACHINE SYSTEMS

See also Human Performance 10, 11, 12; Psychology 4.

## MATHEMATICAL MODELING

See also Biospherics 8, 10; Body Fluids 4; Cardiovascular and Respiratory Systems 11; Exobiology 5; Hematology 3; Human Performance 12; Life Support Systems 4, 9; Neurophysiology 9, 10.

### ISSUE 7

#### PAPER:

1. P278(6/86) Gusev VMGB, Kislyakov VA.

**Interaction of the otolith organ and the semicircular canals in an angular stabilization system applied to a human being in space.**

Biofizika.

XXXI(1): 123-127; 1986.

[7 references; 3 in English]

I.P. Pavlov Institute of Physiology, USSR Academy of Sciences, Leningrad

Mathematical Modeling, Computer Simulation, Stabilization System

Human

Neurophysiology, Otolith Organs, Semicircular Canals

### ISSUE 9

#### PAPER:

2. P377(9/86)\* Obrastsov IF, Konakhevich YuG, Lyapin VA, Mar'in AV.

**Mathematical modeling of kinematic reactions of the human body to impact.**

Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.

20(4): 37-42; 1986.

[3 references; 2 in English]

Operational Medicine, Kinematic Reactions

Mathematical Modeling, Humans

Impact

## METABOLISM

See also Body Fluids 1, 6; Botany 4; Cardiovascular and Respiratory Systems 5, 18; Equipment and Instrumentation 1; Hematology 1, 3; Life Support Systems 8, 11; Neurophysiology 11, 12; Nutrition 2, 5; Radiobiology 13, 18, 21, 23.

### ISSUE 5

#### PAPERS:

1. P201(2/86)\* Sergeyev IN, Afonin BV, Blazheyevich NV, Morukov BV, Belakovskiy MS.

**The role of active metabolites of vitamin D<sub>3</sub> in the regulation of calcium metabolism in rats undergoing hypokinesia.**

Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.

19(6): 46-50; 1985.

[20 references; 13 in English]

Metabolism, Calcium; Musculoskeletal System

Rats

Nutrition, Vitamin D; Hypokinesia

2. P213(2/86)\* Sinyavskiy YuA, Vlasova TF, Belakovskiy MS, Senkevich YuA, Kim BI.

**Certain aspects of human amino acid metabolism under high altitude conditions.**

Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.

19(6): 85-87; 1985.

[17 references; ten in English]

Metabolism, Amino Acids

Humans, Athletes, Mountain Climbers

High Altitude, Acclimation and Training

#### MONOGRAPH:

3. M66(2/86) Tigranyan RA.

Metabolicheskiye aspekty problemy stressa v kosmicheskom polete

**[Metabolic aspects of the problem of stress in space flight].**

Volume 52 in "Problemy Kosmicheskoy Biologii [Problems of Space Biology].

Moscow: Nauka; 1985.

[224 pages; 82 figures]

Affiliation: Not available

**Key Words:** Metabolism, Stress; Space Flight, Cosmos, Long-term, Weightlessness, Rats; Psychology; Endocrinology

ISSUE 6

PAPERS:

4. P245(4/86)\* Vlasova TF, Ushakov AS, Bychkov VP, Miroshnikova YeB.  
**Amino acids in blood of humans exposed to emotional stress.**

Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.

20(1): 80-81; 1986.

[8 references; 4 in English]

Metabolism, Amino Acid Level

Humans, Males

Psychology, Emotional Stress; Human Performance, Cognitive Demands

5. P226(4/86)\* Ivanova SM, Orlov ON, Brantova SS, Labetskaya OI, Davydova NA, Zezerov AYe, Ushakov AS.

**The effects of performance of demanding operator tasks on human lipid peroxidation processes.**

Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.

20(1): 20-22; 1986.

[12 references; 5 in English]

Metabolism, Lipid Peroxidation; Endocrinology, Adrenergic System

Humans, Operators

Human Performance, Cognitive Demands; Psychology, Stress

6. P228(4/86)\* Kalandarov S, Bychkov VP, Frenkel' ID, Proskurova GI.

**Characteristics of humoral regulation of metabolism in simulations of spaceflight factors.**

Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.

20(1): 25-28; 1986.

[17 references; 2 in English]

Metabolism, Humoral Regulation; Endocrinology, Sympathetic-Adrenal System

Humans, Age Groups

Hypokinesia, Head-down Tilt; Nutrition; Psychology, Stress; Exercise

ISSUE 7

PAPERS:

7. P289(6/86)\* Popov IG, Latskeyevich AA.

**Free amino acids in human blood in the initial period of exposure to hypokinesia with head-down tilt.**

Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.

20(2): 46-54; 1986.

[5 references; 2 in English]

Metabolism, Amino Acids, Blood; Nutrition, Cosmonaut Rations

Humans, Males

Hypokinesia, Head-down Tilt

## ISSUE 7

8. P301(6/86)\* Zezerov AYe, Ivanova SM.

**A polarographic method for measuring the products of lipid peroxidation in the plasma and erythrocytes of humans and laboratory rats.**

Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.

20(2): 94-95; 1986.

[16 references; 3 in English]

Metabolism, Lipid Peroxidation, Products in Blood  
Human, Rats  
Measurement, Polarography

## MONOGRAPH:

9. M79(6/86) Furdyy FI, Khaydarliu SKh, Mamalyga LM.

Kombinirovannyye vozdeystviya na organizm ekstremal'nykh faktorov.

**[Effects of combinations of extreme factors on the body].**

Kishinev: Shtiintsa; 1985.

[142 pages; 15 figures; 11 tables; 407 references; 109 in English]

Institute of Zoology and Physiology, Moldavian Academy of Sciences

**Key Words:** Metabolism; Hypoxia, Hyperthermia, Hypokinesia;  
Radiobiology, Radiation

## ISSUE 8

## PAPERS:

10. P333(8/86)\* Potapov PP, Tikhmirova NA.

**Parameters of carbohydrate and lipid metabolism in rats during adaptation after a 30-day period of hypokinesia.**

Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.

20(3): 85-87; 1986.

[12 references; 4 in English]

Metabolism, Lipids, Hyperlipemia, Recovery Period  
Rats  
Hypokinesia, Immobilization; Psychology, Stress

## MONOGRAPH:

11. M89(8/86) Zor'kin AA, editor.

Metabolicheskiye protsessy pri nekotorykh ekstremal'nykh sostoyaniyakh

**[Metabolic Processes under Extreme Conditions].**

Kishinev: Shtiintsa; 1985.

[154 pages; 28 tables; 16 figures; 276 references; 44 in English]

Affiliation: Moldavian Ministry of Health

**Key Words:** Metabolism, Hypokinesia, Psychology, Stress, Hypoxia,  
Adaptation, Radiobiology, Cardiovascular and Respiratory Systems,  
Musculoskeletal System

## MICROBIOLOGY

See also Biospherics 1; Exobiology 1, 3, 10; Habitability and Environment Effects 4, 5; Life Support Systems 4, 5, 7, 9, 10, 11; Radiobiology 3, 15.

### ISSUE 7

#### PAPER:

1. P279(6/86) Opalinskaya AM, Agulova LP.

**The effect of cosmic, solar, and geophysical factors on the agglutination of bacteria in vitro.**

Biofizika.

XXXI(1): 94-98; 1986.

[10 references; 1 in English]

V.D. Kuznetsov Siberian Institute of Physics and Technology, Tomsk

Microbiology, Bacteria, Agglutination

Bacteria, Salmonella typhosa

Biospherics, Cosmic, Solar and Geophysical Factors, Radiobiology, Neutron Irradiation, Geomagnetic Effects

## MORPHOLOGY AND CYTOLOGY:

See also Biospherics 1, Body Fluids 5; Endocrinology 1, 2, 3; Neurophysiology 11; Radiobiology 3, 19.

### ISSUE 6

#### PAPER:

1. P261(4/86) Korzun YeI, Shakhbazov VG, Mailyan TV, Kolupayeva TV, Kovalenko YeA.

**Electrokinetic properties of cell nuclei of the human buccal epithelium in response to hypoxia and motion sickness.**

Patologicheskaya Fiziologiya i Eksperimental'naya Terapiya.

1985(6): 63-66.

[7 references; none in English]

Morphology and Cytology, Electronegativity, Cell Nuclei, Buccal Epithelium

Humans, Personnel Selection

Neurophysiology, Acceleration Tolerance; Adaptation, Hypoxia Tolerance, Physical Exercise

## MUSCULOSKELETAL SYSTEM

See also Biological Rhythms 1; Cardiovascular and Respiratory Systems 23; Developmental Biology 2; Endocrinology 7; Equipment and Instrumentation 1; Metabolism 1, 11; Neurophysiology 4, 6.

### ISSUE 5

#### PAPERS

1. P191(2/86) Mailyan ES, Kovalenko YeA, Buravkova LB.

**Muscle bioenergetics in weightlessness.**

Patologicheskaya fiziologiya i eksperimental'naya terapiya.  
1985(5): 69-73. [8 references; 1 in English]

Musculoskeletal System, Skeletal Muscles, Phosphorylation  
Rats  
Space Flight, Cosmos-605, 946 and 1129

2. P196(2/86)\* Kirenskaya AV, Koslovskaya IB, Sirota MG.

**The effect of immersion hypokinesia on a learned series of voluntary movements.**

Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.  
19(6): 27-31; 1985.

[17 references; 4 in English]

Musculoskeletal System, Voluntary Movements  
Humans  
Immersion and Head-down Tilt

3. P200(2/86)\* Dobelis MA, Saulgozis YuZh, Novikov VYe, Il'in YeA, Oganov VS.

**The effect of actual and simulated weightlessness on mechanical properties of animal bones under torsion.**

Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.  
19(6): 40-45; 1985.

[22 references; 7 in English]

Musculoskeletal System, Mechanical Properties  
Rats  
Space Flight, Cosmos-1129; Weightlessness, Simulated

4. P202(2/86)\* Shvets VN, Pankova OYe, Kapitskaya OYe, Vnukova ZYe.

**Comparison of reactions of bone tissues of rats subjected to horizontal hypokinesia and hypokinesia with head-down tilt.**

Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.  
19(6): 50-54; 1985.

[16 references; 8 in English]

Musculoskeletal System, Bone Tissues  
Rats  
Hypokinesia, Horizontal, Head-down Tilt

ISSUE 6

PAPERS:

5. P230(4/86)\* Potapov PP.

**Levels of collagen, lipids and glycogen in the skeletal muscles of rats in the recovery period after 15- and 30-day periods of hypokinesia.**

Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.

20(1): 33-35; 1986.

[10 references; 3 in English]

Musculoskeletal System, Collagen, Lipids, Glycogen

Rats

Hypokinesia, Long-term, Readaptation

6. P234(4/86)\* Shvets VN, Pankova AS, Kabitskaya OYe, Vnukova ZE, Morukov BV.

**The effects of diphosphonates on bone tissue of rats undergoing hypokinesia.**

Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.

20(1): 45-49; 1986.

[19 references; 16 in English]

Musculoskeletal System, Osteoporosis

Rats

Hypokinesia, Countermeasures, Diphosphonates

7. P243(4/86)\* Zaychik VYe, Kondrashov AYe, Morukov BV.

**A technique for determining the amount of calcium in the human foot by neutron activation.**

Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.

20(1): 75-74; 1986.

[11 references; 4 in English]

Musculoskeletal System, Calcium Level, Bone

Human

Technique Demonstration, Neutron Activation

8. P259(4/86) Tambovtseva RV, Korniyenko IA.

**The development of various types of fibers of the soleus muscle in postnatal ontogenesis in rats.**

Arkhiv anatomii, gistologii i embriologii.

90(1): 77-81; 1986.

[19 references; 14 in English]

Laboratory of Metabolism and Energy, Scientific Research Institute for the Physiology of Children and Adolescents, USSR Academy of Pedagogical Sciences, Moscow

Musculoskeletal System, Soleus Muscle, Fibers

Rats

Development, Muscle Development

ISSUE 6

9. P263(4/86) Strongina OM, Kuchma VR.

**Use of ergometric parameters to predict fatigue of the neuromuscular system of the hands.**

Gigiyena Truda i Professional'nyye Zabolevaniya.

1986(1): 49.

[3 references; none in English]

I.M. Sechenov Medical Institute, Moscow

Musculoskeletal System, Muscle Fatigue, Hands  
Humans, Females  
Human Performance, Ergometric Parameters

10. P274(4/86) Chaikovskii VS, Yevtinova IV, Basharina OB.

**Concentration of steroids and androgen receptors in skeletal muscles during adaptation to physical exercise.**

Voprosy Meditsinskoy Khimii.

31(6): 80-86; 1985.

[21 references; 16 in English]

Scientific Research Institute of Physical Culture, Leningrad

Musculoskeletal System, Skeletal Muscles, Endocrinology, Testosterone, Estradiol, Androstenedione, Receptor Binding  
Rats, Males and Females; Reproductive Biology, Sex Differences  
Adaptation, Physical Exercise

11. P242(4/86)\* Mel'nichenko VP, Gol'dovskaya MD, Krotov VP, Popov AG, Kondakova IS, Gorbatenkova NV.

**A restraint system for use with conscious Macaca Mulatta monkeys in tilt tests.**

Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.

20(1): 73-74; 1986.

[2 references; none in English]

Musculoskeletal System, Equipment and Instrumentation, Restraint System  
Monkeys  
Gravitational Effects, Tilt Test

**MONOGRAPH:**

12. M71(4/86) Person RS.

Spinal'nyye mekhanizmy upravleniya myshechnym sokrashcheniyem

**[Spinal mechanisms for controlling muscle contraction].**

Moscow: Nauka; 1985.

[ca. 185 pages; 4 tables; 60 illustration; 21 pages of references]

Institute for Problems of Information Transmission, USSR Academy of Sciences

**Key Words:** Musculoskeletal System, Muscle Contraction, Electromyography; Neurophysiology, Spinal Control, Motor Neurons

ISSUE 7

PAPERS:

13. P293(6/86)\* Belkin VSh, Astakhov OB.

**Capillaries in skeletal muscles of white rats during adaptation to high altitudes in Pamir and the Antarctic.**

Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.

20(2): 65-69; 1986.

[9 references; 0 in English]

Musculoskeletal System, Skeletal Muscles, Capillaries  
Rats  
Adaptation, High Altitude, Hypothermia

14. P298(6/86)\* Burkovskaya TYe.

**The effect of hydrocortisone on the osteogenetic function of bone marrow of mice.**

Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.

20(2): 83-86; 1986.

[17 references; 13 in English]

Musculoskeletal System, Bone Marrow, Osteogenesis  
Mice, Male  
Endocrinology, Hydrocortisone

ISSUE 8

PAPER:

15. P323(8/86)\* Khomulo GV, Lotova VI, Chernyayev AN, Vinogradov IN.

**The effect of hypoxia on DNA synthesis and collagen concentration in regenerating skin.**

Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.

20(3): 57-61; 1986.

[18 references; 8 in English]

Musculoskeletal System, Connective Tissue, Skin; Histology, DNA, Collagen  
Rats  
Hypoxia

ISSUE 9

PAPER:

16. P361(9/86) Kirenskaya AV, Koslovskaya IB, Sirota MG.  
**The effects of immersion hypokinesia on the characteristic rhythm  
of [activity of] motor units in the soleus muscle.**  
Fiziologiya Cheloveka.  
12(4): 627-632; 1986.  
[14 references; 6 in English]

Musculoskeletal System, Electrical Activity, Soleus  
Humans  
Hypokinesia, Immersion

## NEUROPHYSIOLOGY

See also Adaptation 4; Biospherics 1; Cardiovascular and Respiratory Systems 13, 17, 24; Developmental Biology 2; Human Performance 4, 5, 7, 9, 13, 14; Mathematical Modeling 1; Morphology and Cytology 1; Musculoskeletal System 12; Personnel Selection 1.

### ISSUE 5

1. P194(2/86)\* Gavrilin VK, Zakharova LN.  
**The vestibular function in middle-aged individuals exposed to a 30-day period of hypokinesia with head-down tilt.**

Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.  
19(6): 15-20 1985.

[32 references; 8 in English]

Neurophysiology, Vestibular Function  
Humans, Males, Middle-aged  
Hypokinesia, Head-down Tilt, Bed Rest

2. P205(2/86)\* Klimovskaya LD, Smirnova NP, D'yakonov AS.  
**Impedance of brain tissue in rats exposed to a constant magnetic field.**

Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.  
19(6): 62-64; 1985.

[9 references; none in English]

Neurophysiology, Brain Tissue, Impedance  
Rats  
Radiobiology, Magnetic Field

### BOOK REVIEW

3. BR7(2/86) Kovalenko YeA.  
Review of: Nozdrachev AD.  
Fiziologiya vegetativnoy nervnoy sistemy.  
**[Physiology of the autonomic nervous system].**

Leningrad: Meditsina, 1983.

In: Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina. 19(6) 92-93; 1985.

**Key Words:** Neurophysiology, Autonomic Nervous System, Sympathetic, Parasympathetic and Metasympathetic Systems, Neurotransmitters, Homeostasis

ISSUE 6

PAPERS:

4. P227(4/86)\* Petrenko YeT, Yermukhametova LA.

**The effect of rhythmic visual noise (light flashes) on human encephalograms and efficiency of movements during task performance.**

Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.

20(1): 22-25; 1986.

[16 references; 3 in English]

Neurophysiology, EEG; Musculoskeletal System, Motor Control

Humans

Perception, Visual Noise

5. P253(4/86) Grigor'yev AI, Nichiporuk IA, Arzamazov GS.

**On the role of changes in hormonal status in the development of motion sickness in humans.**

Fiziologiya Cheloveka.

12(1): 76-81; 1986.

[44 references; 16 in English]

Neurophysiology, Vestibular System, Motion Sickness, Tolerance Level

Humans, Males, Typology

Endocrinology, Hormones, ACTH, ADH, Aldosterone

6. P254(4/86) Smetanin BN, Shlykov VYu, Kudinova MP.

**Ameliorative effect of voluntary movements on the vestibular motor reaction.**

Fiziologiya Cheloveka.

12(1): 133-140; 1986.

[12 references; 7 in English]

Institute for Problems in Information Transmission, USSR Academy of Sciences, Moscow.

Neurophysiology, Vestibular Stimulation

Humans

Musculoskeletal System, Voluntary Movements

7. P257(4/86) Matsnev EI, Kuz'min MP, Zakharova LN.

**Comparative evaluation of the effectiveness of vestibular, optokinetic and optovestibular stimulation in inducing experimental motion sickness.**

Vestnik Otorino-Laringologii.

1986(1): 10-17.

[30 references; 23 in English]

Institute of Biomedical Problems, USSR Ministry of Health.

Neurophysiology, Motion Sickness Induction, Tolerance

Humans, Males, Individual Differences; Personnel Selection

Vestibular and Optokinetic Stimulation, Acceleration

ISSUE 6

8. P258(4/86) Gavrilin VK.

**The otolithic reflex of ocular counterrolling in healthy individuals**

Zhurnal ushnykh, nosovykh i gorlovykh bolezney  
1986(1): 40-45.

[25 references; 9 in English]

Institute of Biomedical Problems, Moscow

Neurophysiology, Ocular Counterrolling  
Humans, Males  
Individual Differences, Normative Values

**MONOGRAPH:**

9. M75(4/86) Kondrachuk AV, Sirenko SP.

Dinamika kupula v polikruzhnom kanale vestibulyarnogo analizatora

**[The dynamics of the cupula in the semicircular canal of the vestibular system].**

Kiev: Akademiya Nauk UkSSR; 1985.

[23 pages; 6 figures; 11 references; 4 in English]

Physics Institute, Ukrainian Academy of Sciences

**Key Words:** Neurophysiology, Vestibular System, Cupula; Mathematical Modeling, Angular Acceleration

ISSUE 7

**PAPER:**

10. P299(6/86)\* Kondrachuk AV, Sirenko SP.

**A mathematical model of the cupulo-endolymphatic system with varying densities of the cupula and endolymph.**

Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.

20(2): 86-92; 1986.

[15 references; 9 in English]

Neurophysiology, Vestibular System, Cupulo-endolymph System  
Mathematical Modeling  
Rotation, Hydromechanics

**MONOGRAPHS:**

11. M84(6/86) Samoylov MO.

Reaktsii neyronov mozga na gipoksiyu

**[Reactions of neurons in the brain to hypoxia.]**

Leningrad: Nauka; 1985.

[190 pages; 61 figures; 544 references]

I.P. Pavlov Institute of Physiology (Laboratory of Functional Morphology and Physiology of the Neuron), USSR Academy of Sciences

**Key Words:** Neurophysiology, Brain Neurons, Hypoxia, Ischemia; Cytology, Metabolism, Cellular, Calcium

ISSUE 7

12. M85(6/86) Bulygin IA, editor.

Tsentral'nyye mekhanizmy neyrohumoral'noy regulyatsiya funktsii v norme i patologii

[**Central mechanisms of neurohumoral regulation of functions in the norm and in pathology**].

Minsk: Nauka i Tekhnika; 1985.

[248 pages; 40 tables; 65 figures; 317 references; 85 in English]

Byelorussian Academy of Sciences

**Key Words:** Neurophysiology, Central Nervous System, Medulla Oblongata, Nuclei, Neural Mediators; Endocrinology; Metabolism, Lipids; Cardiovascular and Respiratory System, Circulation, Systemic and Brain, Ischemia; Adaptation, Rotation, Vibration, Radiation, Thermal Regulation

ISSUE 8

PAPERS:

13. P319(8/86)\* Grigorova VK. (Bulgaria)

**The relationship between optokinetic nystagmus and optovestibular and vestibular autonomic tolerance.**

Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.

20(3): 43-45; 1986.

[7 references; 6 in English]

Neurophysiology, Nystagmus, Asymmetry  
Humans, Individual Differences  
Vestibular Tolerance

14. P322(8/86)\* Tigranyan RA, Kovalev VYu.

**The effect of long-term space flight on the concentration of polyamines in the brain of rats.**

Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.

20(3): 53-57; 1986.

[11 references; 7 in English]

Neurophysiology, Brain, Polyamines  
Rats  
Spaceflight, Long-term, "Cosmos-1129"; Psychology, Stress

15. P335(8/86)\* Tychina VP, Nechayev AP.

**Bioelectric activity in the human brain during sleep deprivation.**

Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.

20(3): 88-91; 1986.

[13 references; 2 in English]

Neurophysiology, Bioelectric Activity; Human Performance  
Humans  
Psychology, Isolation; Fatigue, Sleep Deprivation

ISSUE 8

16. P339(8/86)\* Gorgiladze GI, Samarin GI, Bryanov II.  
**Interlabyrinth asymmetry, vestibular dysfunction and space motion sickness.**  
 Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.  
 20(3): 19-31; 1986.  
 [121 references; 52 in English]

Neurophysiology, Vestibular Dysfunction, Space Motion Sickness; Personnel  
 Selection  
 Humans, Cosmonauts, Literature Review  
 Adaptation, Interlabyrinth Asymmetry; Space Flight, "Salyut-6"

17. P341(8/86) Skoromnyy NA, Demchenko IT, Beketov AI, Moskalenko YuYe.  
**Cerebral circulation and oxygen pressure in conscious rabbits undergoing  
 motion sickness.**  
 Fiziologicheskii Zhurnal SSSR im. I.M. Sechenova.  
 72(3): 352-356; 1986.  
 [15 references; 4 in English]

Affiliations: Medical Institute, Simferopol; Sechenov Institute of  
 Evolutionary Physiology and Biochemistry, USSR Academy of Sciences,  
 Leningrad

Neurophysiology, Cerebral Circulation, Oxygen Pressure; Cardiovascular and  
 Respiratory Systems  
 Rabbits  
 Motion Sickness

18. P326(8/86)• Karpov BA, Aleksandrov LG.  
**A technique for calibrating oculograms.**  
 Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.  
 20(3): 71-73; 1986.  
 [4 references; 1 in English]

Neurophysiology, Eye Movement  
 Humans, Males  
 Calibration Technique

ISSUE 9

PAPERS:

19. P362(9/86) Slavinskiy YeYu, Trinus KF.

**Cortical potentials evoked by threshold vertical acceleration in humans.**

Fiziologiya Cheloveka.

12(4): 651-656; 1986.

[10 references; 1 in English]

Affiliation: A.I. Kolomiychenko Scientific Research Institute for Otolaryngology, Kiev

Neurophysiology, Evoked Cortical Potentials  
Humans, Men and Women; Patients, Areflexive?? Labyrinths  
Acceleration, Vertical, Threshold

20. P364(9/86) Petrova YeI, Alekseyeva NS.

**The nystagmic component of the vestibular response/reaction in diagnosing vestibular pathology.**

Vestnik Otorino-laringologii.

1986(4): 27-31.

[8 references; 2 in English]

Affiliation: Department of Otolaryngology, I.M. Sechenov Medical Institute, Moscow; Scientific Research Institute of Neurology, USSR Academy of Medicine

Neurophysiology, Vestibular System, Nystagmus  
Humans, Healthy and Patients, Vestibular Pathology  
Rotation

21. P378(9/86)\* Nekhayev AS, Vlasov VD, Ivanov VV.

**Use of central electroanalgesia to facilitate recovery from motion sickness.**

Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.

20(4): 42-44; 1986.

[17 references; none in English]

Neurophysiology, Motion Sickness  
Humans  
Countermeasure, Treatment, Electroanalgesia

## NUTRITION

See also Hematology 1, 9; Immunology 2; Life Support Systems 6, 7, 8; Metabolism 1, 6, 7.

### ISSUE 6

#### PAPER:

1. P237(4/86)\* Belakovskiy MS, Yuzhanskaya MG, Panferova NYe, Pastushkova LKh, Pereverzeva OG, Smirnova AN, Sergeev IN, Spirichev VB.  
**The effects of various doses of ultraviolet radiation on levels of vitamins in the human body.**

Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.

20(1): 56-61; 1986.

[15 references; 4 in English]

Nutrition, Vitamins  
Humans, Males  
Radiobiology, Ultraviolet

2. P252(4/86) Koshkenbayev BKh, Tazhibayev ShS, Maksimenko VB, Sisemaliyeva ZhS.

**The effect of protein and vitamin deficiencies on lipolytic activity of enzymes and synthesis of cholesterol esters during exposure to hypokinesia.**

Voprosy Pitaniya.

1985(6): 53-57.

[22 references; 9 in English]

Metabolism Laboratory, Kazakh Affiliate, Nutrition Institute, USSR Academy of Sciences, Alma-Ata.

Nutrition, Protein and Vitamin Deficiencies; Enzymology; Metabolism,  
Lipolysis, Cholesterol  
Rats, Males  
Hypokinesia

### ISSUE 7

#### PAPER:

3. P294(6/86)\* Sivuk AK, Kasatkina AG, Strukova YeI, Naydina VP, Zharkovskaya YeYe.

**The effect of long-term storage on certain parameters of the fat component of freeze-dried food products.**

Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.

20(2): 69-72; 1986.

[14 references; 0 in English]

Nutrition, Freeze-dried Food, Fat Content  
Chemical Analysis  
Storage, Long-term

## NUTRITION

### ISSUE 8

#### PAPER:

4. P350(8/86) Bogdanov NG, Gvozdoва LG, Belakovskiy MS, Smirnova AN, Blazheyevich NV, Taraban'ko VM, Yuzhanskaya MG, Pastushkova LKh, Zaburkina TG, Pereverzeva OG.

**Vitamin levels in cosmonauts during preflight training and after completion of short-term space flights.**

Voprosy Pitaniya.

1986(3): 28-31.

[15 references; 10 in English]

Affiliation: Institute of Nutrition, USSR Academy of Medicine; Institute of Biomedical Problems, USSR Ministry of Health, Moscow

Nutrition, Vitamin Levels

Humans, Cosmonauts

Space flight, Short-term, "Salyut-6," "Soyuz"; Flight Training

### ISSUE 9

#### PAPER:

5. P379(9/86)\* Bychkov VP, Vlasova TF, Gryasnova VN, Sedova YeA, Sivuk AK, Tret'yakova VA, Ushakov AS.

**The biological value of the protein included in the rations of the crews of the "Salyut" orbital stations.**

Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.

20(4): 44-48; 1986.

[7 references; none in English]

Nutrition, Biological Value; Metabolism, Protein

Humans

Cosmonaut Rations (Salyut), Protein; Hypodynamia, Hermetic Quarters

## OPERATIONAL MEDICINE

THIS CATEGORY WAS FIRST USED IN ISSUE 8

SEE ABSTRACTS UNDER HEALTH AND MEDICAL TREATMENT FOR ISSUES 5, 6 & 7

See also Cardiovascular and Respiratory Systems 25; Hematology 6;  
Mathematical Modeling 2.

### ISSUE 8

#### PAPERS:

1. P338(8/86)\* Ponomarenko VA.

**Stages in the development of the problem of flight safety in aviation medicine.**

Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.  
20(3): 12-19.

Operational Medicine, Flight Safety  
Humans, Aircraft Crews  
Theoretical Discussion

2. P330(8/86)\* Bokeriya LA, Sokolova NA, Konikova AS.

**The role of oxygen in resuscitation**

Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.  
20(3): 80-81; 1986.

[4 references; 2 in English]

Operational Medicine, Anoxia, Resuscitation  
Animals, (Unspecified)  
Oxygen, Chilling

3. P316(8/86)\* Tishler VA, Yeremin AV, Stepantsov VI, Funtova II.

**Evaluation of the physical work capacity of cosmonauts on the "Salyut-6" space station.**

Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.  
20(3): 31-35; 1986.

[5 references; none in English]

Operational Medicine; Human Performance, Physical Work Capacity, Remote  
Measurement; Cardiovascular and Respiratory Systems, EKG  
Humans, Cosmonauts  
Space Flight, "Salyut-6;" Countermeasures, Physical Exercise

4. P324(8/86)\* Neborskiy AT, Belkaniya GS.

**Electrical conductivity of the skin in humans and monkeys.**

Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.  
20(3): 61-68; 1986.

[13 references; 1 in English]

Operational Medicine, Functional State; Biological Rhythms, Seasonal  
Rhythms; Reproductive Biology, Menstrual Cycle  
Humans, Men and Women, Sex Differences; Monkeys, Macaques and Rhesus,  
Species Differences  
Skin Conductivity, Acupuncture Zones

**ISSUE 9**

**PAPERS:**

5. P365(9/86) Bodrov, VA.

**The problem of flight crew fatigue.**

Voyenno-meditsinskiy Zhurnal.

1986(5): 40-43.

[No references]

Affiliation: [Military] Medical Corps.

Operational Medicine, Fatigue

Humans, Flight Crews

Review Article; Classification System

6. P380(9/86)\* Kozlovskiy AP, Lushchikov YeA.

**Human tolerance of skin contact with high heat.**

Kosmicheskiy Biologiya i Aviakosmicheskaya Meditsina.

20(4): 53-55; 1986.

[6 references; 1 in English]

Operational Medicine, Tolerance, Skin, Arm

Humans,

High Temperatures

## PERCEPTION:

See also Human Performance 5, 6, 13, 14; Neurophysiology 4.

### ISSUE 5

#### PAPER:

1. P193(2/86)\* Lapayev EV, Vorob'yev OA.

**Spatial disorientation illusions of vestibular origin during aircraft flight.**

Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.

19(6): 11-15; 1985.

[17 references; 8 in English]

Perception, Spatial Disorientation, Predisposing Conditions  
Humans, Pilots, Flight Crews  
Aircraft Flight; Human Performance

### ISSUE 6

#### PAPER:

2. P262(4/86) Raushenbakh BV. (Interviewer: VN Artamanov)

**Some psychological aspects of cosmonautics and aesthetics.**

Psikhologicheskiy Zhurnal.

7(1): 77-82; 1986.

[No references]

Chair of Theoretical Mechanics, Moscow Physical Technical Institute;  
Also USSR Academy of Sciences

Perception, Visual Geometry, Spatial Perception  
Humans, Cosmonauts, Pilots  
Psychology, Internal Representations; Space Flight, Soyuz Spacecraft

### ISSUE 9

#### PAPER:

3. P392(9/86)\* Malinin ID, Ponomarenko VA.

**Characteristics of visual monitoring of information on instruments during an aerobatic flight.**

Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.

20(4): 4-7; 1986.

[12 references; 2 in English]

Perception, Eye Fixations, Instrument Dials  
Humans, Pilots  
Flight Maneuvers, Pitch, Bank

**PERSONNEL SELECTION:**

See Cardiovascular and Respiratory Systems 4, 16; Endocrinology 4; Human Performance 6, 11, 12; Morphology and Cytology 1; Neurophysiology 7, 16; Psychology 1.

**ISSUE 9**

**PAPERS:**

1. P373(9/86)\*Kotovskaya AR, Vil'-Vil'yams IF, Luk'yanyuk VYu.

**Tolerance of non-pilots of varying age to +G<sub>z</sub> acceleration.**

Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.

20(4): 25-29; 1986.

[9 references; 4 in English]

Personnel Selection, Pilots, Cosmonauts

Humans, Age Differences

Neurophysiology, Tolerance, Acceleration, +G<sub>z</sub>

## PSYCHOLOGY

See also Adaptation 1; Biospherics 1; Body Fluids 3, 7; Cardiovascular and Respiratory Systems 13, 18, 27, 28, 35; Endocrinology 2, 3, 4; Group Dynamics, all entries; Human Performance, all; Immunology 2; Metabolism 3, 4, 5, 6, 10, 11; Neurophysiology 14, 15; Perception 2; Space Biology and Medicine 1.

### ISSUE 5

#### PAPER

1. P217(2/86)\* Vinogradov MV, Varlamov VA, Zybkovets DYa.  
**Methodological approaches to predicting psychological disadaptation in human beings in extreme conditions.**

In: Zabrodin YuM, editor.

Problemy diagnostiki i upravleniya sostoyaniyem cheloveka-operatora  
[Problems in diagnosis and control of the state of human operators].

Abstracts of scientific papers of an All-Union Conference. Moscow:

Tsentral'nyy Sovet Obschestva Psikhologov SSSR

[Central Committee of the USSR Society of Psychologists]; 1984.

[No references cited]

Psychology, Disadaptation, Prediction, Tests; Human Performance;  
Personnel Selection  
Humans, Operators  
Stress, Extreme Conditions

### ISSUE 6

#### PAPERS:

2. P225(4/86)\* Kozlovskiy AP, Kovalenko AF.  
**Psychological (emotional) stress in pilots awaiting ejection and its role in task performance.**

Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.

20(1): 16-19; 1986.

[3 references; none in English]

Psychology, Stress Symptoms; Human Factors, Task Performance  
Humans, Pilots  
Emotional Stress, Simulated Ejection

3. P267(4/86) Yevstaf'yev VN, Netudykhata OYu, Vigovskiy VI, Shayevich BK, Stoyanov AP.

**Physiological and hygienic characteristics of work and rest schedules for seamen working under the brigade system.**

Gigiyena i Sanitariya.

1986(2): 21-23.

[6 references; none in English]

Affiliate of the Scientific Research Institute for Hygiene in Water Transport, USSR Ministry of Health, Odessa

Psychology; Human Performance  
Humans, Seamen  
Work and Rest Schedules

ISSUE 6

MONOGRAPH:

4. M67(4/86) Kubasov VN, Taran VA, Maksimov SN.  
Professional'naya podgotovka kosmonavtov  
[Professional Training of Cosmonauts.]  
Moscow: Mashinostroyeniye; 1985.  
[286 pages; illustrated; 100 references; 17 in English]

**Key Words:** Psychology, Cosmonaut Training, Human Performance, Man-Machine Systems, Performance Evaluation, Training Simulators

ISSUE 7

PAPER:

5. P307 (6/86) Simonov PV.  
Some theoretical principles for evaluating and developing methods for controlling and compensating for the effects of emotions on cosmonaut performance.  
Uspekhi Fiziologicheskikh Nauk.  
17(2):20-30; 1986.  
[31 references; 12 in English]  
Institute of Higher Nervous Activity and Neurophysiology, USSR Academy of Science, Moscow

Human Performance, Cosmonaut Performance  
Humans, Cosmonauts  
Psychology, Emotions, Stress

ISSUE 8

PAPER:

6. P332(8/86)\* Eliava VM, Urmancheyeva TG.  
The effect of hypokinesia on performance of a [learned] food-obtaining response in monkeys.  
Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.  
20(3): 82-83; 1986.  
[9 references; 1 in English]

Psychology, Learned Response  
Primates, Rhesus  
Hypokinesia, Immobilization Stress

ISSUE 9

PAPER:

P372(8/86)\* Kan YeL, Kupriyanov VA, Korovin KF, Malinovskaya OO.  
**Biochemical parameters of emotional stress in air traffic controllers.**  
Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.  
20(4): 22-25; 1986.  
[17 references; none in English]

Endocrinology, Sympathetic-adrenal System; Metabolism, Lipids  
Humans, Air Traffic Controllers  
Psychology, Human Performance, Job Stress; Man-machine Systems,  
Automation

## RADIOBIOLOGY

See also Biospherics 1, 11; Cardiovascular and Respiratory Systems 36; Developmental Biology 1; Exobiology 7; Hematology 1; Immunology 4; Metabolism 9, 11; Microbiology 1; Neurophysiology 2; Nutrition 1.

### ISSUE 5

#### MONOGRAPHS:

1.M59(2/86) Myasnik MN, Skvortsov VG, Sokolov VA.  
Fotobiologicheskiye aspekty radiatsionnogo porazheniya kletok.  
[Photobiological aspects of radiation damage to cells].  
Moscow: Energoatomizdat; 1985.  
[152 pages; 22 tables; 43 figures; 151 references; 106 in English]  
Affiliation: Not available

**Key Words:** Radiobiology, Ultraviolet Radiation, Cherenkov Radiation, Photoreactivation, Radiation Damage, Dosimetry; Microbiology, Bacteria

2. M60(2/86) Khanson KP, Komar VYe.  
Molekulyarnyye mekhanizmy radiatsionnoy gibeli kletok  
[Molecular mechanisms of cell death induced by radiation].  
Moscow: Energoavtomizdat; 1985.  
[152 pages; 14 Tables; 57 illustration; 54 references]

**Key Words:** Radiobiology; Genetics; Morphology and Cytology, Cell Death, Reparation

3. M62(2/86) Pelevina II, Sayenko AS, Gotlib BYa, Synzynis BI.  
Vyzhivayemost' obluchennykh kletok mlekoopitayushchikh i reparatsiya DNK.  
[Survival of irradiated mammalian cells and DNA repair].  
Moscow: Energoatomizdat; 1985.  
[120 pages; 7 tables; 37 figures; 94 references; 76 in English]  
Affiliation: Not available.

**Key Words:** Radiobiology, Radiation Damage, Repair; Cytology, Mammal Cells; Genetics, DNA, Chromosomes

### ISSUE 6

#### PAPERS:

4. P238(4/86)\* Kokoreva LV.  
On the physical endurance of rats repeatedly exposed to an intense constant magnetic field.  
Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.  
20(1):61-63; 1986.  
[9 references; 1 in English]

Radiobiology, Magnetic Fields, Repeated Exposure  
Rats, Males  
Performance, Endurance, Work Capacity

ISSUE 6

5. P239(4/86)\* Ryzhov NI, Fedorenko BS.  
**Determining the radiobiological correlates of the quality factor for protons and helium ions.**

Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.

20(1): 63-66; 1986.

[12 references; 3 in English]

Radiobiology, Ionizing Radiation, Bioeffects  
Review of Data  
Quality Factor

6. P249(4/86)\* Panferova NYe.  
**Potential for using ultraviolet radiation on long-term space flights.**

Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.

20(1):4-12; 1986.

[54 references; 19 in English]

Radiobiology, Ultraviolet Radiation, Deprivation, Long-term Space  
Flights  
Humans, Cosmonauts; Theoretical Article  
Health and Medical Treatment, Therapeutic Effects

7. P248(4/86)\* Chertkov KS, Gvozdeva NI, Fedorenko BS, Preobrazhenskiy YuYu.

**The radioprotective and therapeutic efficacy of carrageenan in proton irradiation.**

Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.

20(1):84-86; 1986.

[8 references; 2 in English]

Radiobiology, Proton Irradiation  
Mice, Male and Female  
Countermeasures, Protective Effects, Carrageenan; Hematology, Hemapoiesis

8. P270(4/86) Minkina NA, Kuz'minskaya GN, Nikitina VN, Garina ChA.  
**The effect of intermittent irradiation with a shortwave magnetic field on the state of the endocrine glands**

Radiobiologiya.

XXV(6): 756-761; 1985.

[19 references; 4 in English]

Scientific Research Institute for Labor Hygiene and Occupational  
Diseases, Leningrad; Pavlov Institute of Physiology, USSR Academy of  
Sciences, Leningrad

Radiobiology, Short-wave Magnetic Field, Intermittent Irradiation  
Rats, Male  
Endocrinology, Hypothalamus, Pituitary, Adrenal, Thyroid, Testes

## RADIOBIOLOGY

### ISSUE 6

9. P271(4/86) Vinogradov GI, Batanov GV, Naumenko GM, Levin AD, Trifonov SI.

**The effects of nonionizing microwave radiation on autoimmune responses and the antigen structure of serum proteins.**

Radiologiya

XX(6): 840-842; 1985

[7 references; none in English]

A.N. Murzeyev Scientific Research Institute of General and Communal Hygiene, Ukrainian Ministry of Health, Kiev

Radiobiology, Microwaves

Rats, Male, Females, Pregnant

Immunology, Autoimmune Responses; Development, Fetal Development

### MONOGRAPHS:

10. M74(4/86) Tigranyan RE. Fiziko-tekhnicheskaya praktika biologicheskogo eksperimenta s CVCh islucheniym

**[Technological support of /Literally: Physical-technological performance of/ biological experiments using super high frequency radiation].**

Pushchino: Scientific Center for Biological Research, USSR Academy of Sciences; 1985.

[130 pages; 3 tables; 69 illustrations; 37 references]

Institute of Biological Physics, Scientific Center for Biological Research, USSR Academy of Sciences

**Key Words:** Radiobiology, Electromagnetic waves, Super High Frequency Radiation, Bioeffects, Equipment and Instrumentation, Experimental Design

### ISSUE 7

#### PAPERS:

11. P283(6/86) Gabriyelyan ES, Akopov SE, Kharatyan AA, Petrosyan AK. **Prostaglandin control of thrombocytic and vascular hemostasis in irradiation.**

Byulleten' Eksperimental'nyy Biologii i Meditsiny

CI(1): 79-81; 1986.

[11 references; 6 in English]

Scientific Research Sector of Radiobiology, Armenian Ministry of Health

Endocrinology, Prostaglandin, Synthesis, Antiaggregation Properties; Stability; Hematology, Thrombocytes, Hemostasis

Rats, Rabbits

Radiobiology,  $^{60}\text{Co}$

ISSUE 7

12. P304(6/86)\* Davydov BI.

**Safety standards for electromagnetic radiation in the radio frequency range.**

Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.  
20(2):15-23; 1986.

[32 references; 16 in English]

Radiobiology, Safety Standards  
Human Exposure, Review Article  
Radiation, Electromagnetic Radiation, Radio Frequency Band

ISSUE 8

PAPERS:

13. P346(8/86) Antonenko SG, Sanina OL, Chebotarev YeYe.

**The role of cyclic nucleotides and lipids in creating the radioprotective effect of ceruloplasmin.**

Radiobiologiya.

XXVI(1): 112-115; 1986.

[13 references; 5 in English]

Affiliation: R.Ye. Kavetskiy Institute for the Problems of Oncology, Ukrainian Academy of Sciences, Kiev

Radiobiology, Liver; Metabolism, Lipids, cAMP, cGMP  
Rats  
Radioprotective Agents, Ceruloplasmin, Human

14. P356(8/86) Gabitov VKh, Pukhov VV, Grishukova OV.

**[Quantitative description of] radiation damage to the intestine, bone marrow and lymphoid tissue of rats induced by prolonged irradiation with gamma rays after prophylactic administration of ATP.**

Zdravookhraneniye Kirgizii.

1986(2): 34-37.

[No references]

Affiliation: Department of Operational Surgery and Topographic Anatomy, Central Scientific Research Laboratory, Kighiz State Medical Institute

Radiobiology, Radiation Damage; Gastrointestinal System, Small Intestine;  
Hematology, Bone Marrow, Lymph Tissue  
Rats  
Gamma Irradiation; Countermeasures, ATP

## RADIOBIOLOGY

### ISSUE 8

15. P357(8/86) Eydus LKh, Veksler AM, Korystov YuN, Kublik LN, Levitman MKh.  
**On the effects of post-irradiation hypoxia on potential cell damage.**

Radiobiologiya.

XXVI(2): 243-247; 1986.

[7 references; 2 in English]

Affiliation: Institute of Biological Physics, Pushchino, USSR Academy of Sciences

Radiobiology, Cell Damage

Microbiology, Prokaryotes; Cytology, Eukaryotes

Hypoxia, Postirradiation

16. P359(8/86) Belyayev, IYa, Semakin AB, Grigorova NV, Akif'yev AP.

**Cytogenetic analysis of the mechanisms underlying radiation induced chromosome aberrations in Crepis capillaris cells. Reproduction of aberrations induced by exposure to gamma-quanta, FUDR or their combination during the G<sub>2</sub> stage of the second nuclear cycle.**

Radiobiologiya.

XXVI(2): 175-179; 1986.

[13 references; 10 in English]

Affiliation: Moscow Institute of Engineering Physics; Institute of Chemical Physics, USSR Academy of Sciences, Moscow.

Genetics, Chromosome Aberrations; Cytology

Botany, Crepis capillaris

Radiobiology, Gamma-quanta, FUDR

17. P360(8/86) Belyayev, IYa, Semakin AB, Grigorova NV, Akifyev AP.

**Cytogenetic analysis of the mechanisms underlying radiation induced chromosome aberrations in Crepis capillaris cells. Combined effects of gamma radiation and FUDR in the G<sub>2</sub> phase.**

Radiobiologiya.

XXVI(2): 180-184; 1986.

[5 references; 1 in English]

Affiliation: Moscow Institute of Engineering Physics; Institute of Chemical Physics, USSR Academy of Sciences, Moscow.

Genetics, Chromosome Aberrations; Cytology

Botany, Crepis capillaris

Radiobiology, Gamma irradiation, FUDR

### BOOK REVIEWS:

18. BR8(8/86) Kuzin AM, Kolomiytseva IK.

Review of: Doskina GA.

Endokrinnyye i metabolicheskiye aspekty luchevoy bolezny.

[**Endocrine and metabolic aspects of radiation sickness**].

Tomsk: Tomsk Universit'y; 1984; 221 pages.

Radiobiologiya.

XXVI(2): 283; 1986.

**Key Words:** Radiobiology, Endocrinology, Metabolism

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19. BR9(8/86) Gaziyev AI.  
Review of: Khanson KP, Komar VYe.  
Molekulyarnyye mekhanizmy radiatsionnoy gibeli kletok  
[Molecular mechanisms of cell death induced by radiation]  
Moscow: Energoatomizdat; 1985; 152 pages.  
Radiobiologiya.  
XXVI(2): 283-284; 1986.

NB: This book was abstracted in Digest Issue #5 as M60.

**Key Words:** Radiobiology, Cell Death, Cytology, Genetics

ISSUE 9

PAPERS:

20. P368(9/86) Arlashenko NI, Oparina DYa, Adamchik ZhG, Sheyn VI.  
Comparison of methods for studying the physical work capacity of  
irradiated animals.  
Izvestiya Akademii Nauk SSSR: Seriya Biologicheskaya.  
1986(4): 577-583.  
[24 references; 4 in English]  
Affiliation: Institute of Biomedical Problems, USSR Ministry of Health,

Radiobiology, Post-irradiation Physical Work Capacity  
Rats, Mice  
Measurement Methods

21. P397(9/86) Kolomiytseva IK, Novoselova YeG, Kulagina TP, Potekhina NI,  
Kaznachev YuS, Markevich LN, Kuzin, AM.  
Lipid metabolism in rat tissues after radiation doses leading to  
interphase cell death.  
Radiobiologiya.  
XXVI(3): 313-317; 1986.  
[18 references; 8 in English]  
Authors' Affiliation: Institute of Biological Physics, USSR Academy of  
Sciences, Pushchino

Radiobiology, Interphase Cell Death, Metabolism, Lipids; Lymphocytes,  
Thymocytes, Liver  
Rats, Males  
Gamma Irradiation

## RADIOBIOLOGY

22. P398(9/86) Grigor'yeva YeV, Pozharisskaya TD, Chigareva NG.

**The effect of radioprotective agents on the epithelium of the mucous membrane of the small intestine of irradiated animals.**

Radiobiologiya.

XXVI(3): 408-410; 1986.

[6 references; 3 in English]

Authors' affiliation: S.M. Kirov Academy of Military Medicine, Leningrad

Radiobiology, Gastrointestinal System

Rats

Gamma Irradiation, Countermeasures, Radioprotective Agents

23. P404(9/86) Khanina NYa, Desnitskaya MM.

**Lipidogram, isoenzyme spectrum and total activity of nonspecific esterases of blood serum in rats exposed to a constant magnetic field.**

Patologicheskaya Fiziologiya i Eksperimental'naya Terapiya.

1986(2): 26-29.

[18 references; 3 in English]

Authors' affiliation: Kalinin Medical Institute

Radiobiology, Enzymology; Metabolism, Lipid Metabolism

Rats

Magnetic Field, Constant

## REPRODUCTIVE BIOLOGY

See also Endocrinology 2, 3; Musculoskeletal System 10; Operational Medicine 4.

### ISSUE 6

#### PAPER:

1. P266(4/86) Shekhova AN, Katsiya GV, Goncharov NP.  
**The effects of long-term hypokinesia on the functional activity of the sexual and adrenal glands of female hamadryas baboons.**

Problemy endokrinologii.

XXXII (1): 71-73; 1986.

[12 references; 10 in English]

Laboratory of Experimental Endocrinology, Institute of Experimental Pathology and Therapy, USSR Academy of Medical Sciences, Sukhumi

Reproductive Biology, Menstrual Cycle; Endocrinology, Sexual and Adrenal Glands

Primates, Baboons, Female

Hypokinesia, Long-Term

## SPACE BIOLOGY AND MEDICINE

### ISSUE 6

#### PAPER:

1. P251(4/86) Vorob'yev YeI, Gazenko OG, Gurovskiy NN, Rudnyy NM, Degtyarev VA, Yegorov AD, Yeremin AV.

**Medical research performed in flight on the "Salyut-6" by the first prime crew**

In: M (4/86):Kedrov BM, Kosmodem'yanskii AA.

Nauchnoye tvorchestvo KE Tsiolkovskogo i sovremennoye razvitiye ego idey [The scientific work of K. E. Tsiolkovskiy and Modern Development of His Ideas].

Moscow: Nauka; 1984: 56-60.

Space Medicine; Health and Medical Treatment; Cardiovascular and Respiratory Systems; Human Performance; Psychology; Hematology  
Humans, Males, Cosmonauts  
Spaceflight, "Salyut-6"; Countermeasures; Nutrition

#### MONOGRAPH:

2. M70(4/86) Kedrov BM, Kosmodem'yanskii AA, editors.

Nauchnoye tvorchestvo KE Tsiolkovskogo i sovremennoye razvitiye ego idey [The scientific work of K. E. Tsiolkovskiy and Modern Development of His Ideas].

Moscow: Nauka; 1984.

[167 pages]

Commission on Development of the Scientific Heritage of K. E. Tsiolkovskiy, Institute of the History of Natural Science and Technology, USSR Academy of Sciences, K.E. Tsiolkovskiy State Museum of the History of Cosmonautics

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**Space biology and medicine on the occasion of the 25th anniversary of the first manned space flight by Yuriy Alekseyevich Gagarin.**

Kosmicheskaya Biologiya i Aviakosmicheskaya Meditsina.

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**KEY WORD INDEX**

**Numbers after each entry refer to page numbers in this index.**

## KEY WORD INDEX USSR SPACE LIFE SCIENCES DIGEST ISSUES 5-9

(Numbers listed after key words refer to page numbers in this index where bibliographic citations of relevant articles may be found.)

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