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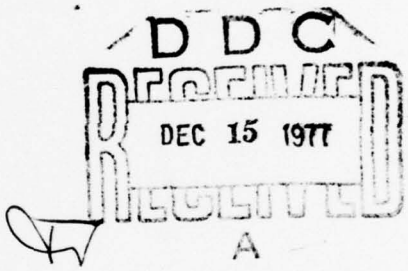

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REPORT DOCUMENTATION PAGE

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Radiation Effects
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Physiology

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This bibliography contains unclassified-unlimited citations on the effects of radiation on living organisms; the effect of artificial and natural radiation on the heart, lungs, nervous system, and other physiological systems are included. The four computer-generated indexes provided are Corporate Author-Monitoring Agency, Subject, Title and Personal Author.

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This bibliography contains 203 unclassified-unlimited citations on *Radiobiology*.

Entries have been selected from references processed into the Defense Documentation Center data bank from January 1953 to July 1977.

This report supersedes Defense Documentation Center report bibliography on *Radiobiology*, AD-725 980, DDC-TAS-71-36, dated July 1971.

Individual entries are arranged in AD number sequence under the heading bibliographic references. Computer-generated indexes of Corporate Author-Monitoring Agency, Subject, Title and Personal Author are provided.

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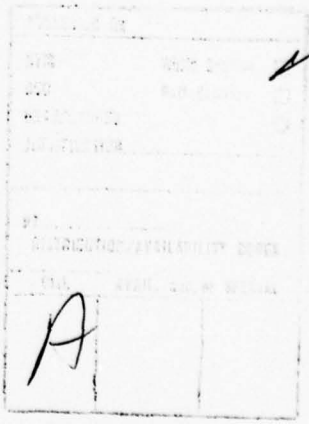

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PERSONAL AUTHOR	P-1

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD- 69 763
ARMY MEDICAL RESEARCH LAB FORT KNOX KY

APPLICATIONS OF INTERMITTENT RADIATION THEORY TO CONSTANT DOSE VARIABLE RADIATION TIME PROBLEMS IN BIOLOGICAL SYSTEMS (U)

AUG 55 23P MICHIE,RICHARD W.;KROHN,LAWRENCE H.;
REPT. NO. USAMRL-207
PROJ: DA-65908014

UNCLASSIFIED REPORT

DESCRIPTORS: *RADIOBIOLOGY, DOSE RATE, MATHEMATICAL ANALYSIS, RADIATION EFFECTS, THEORY (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD- 149 023
ARMY MEDICAL RESEARCH LAB FORT KNOX KY

A HIGH LEVEL COBALT 60 IRRADIATION FACILITY FOR RADIOBIOLOGICAL RESEARCH (U)

DEC 57 20P KEREIAKES,JAMES G.;GINSBURG,JACK M.; KREBS,ADOLPH T.;
REPT. NO. USAMRL-313
PROJ: DA-65908014

UNCLASSIFIED REPORT

DESCRIPTORS: *RADIOBIOLOGY, COBALT, GAMMA RAYS, RADIOACTIVITY, SOURCES, TEST FACILITIES (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD- 265 378
ARMY MEDICAL RESEARCH LAB FORT KNOX KY

PULSED IRRADIATION TECHNIQUES (SINGLE-PULSED, MULTI-PULSED, ULTRA-PULSED) AS A NEW APPROACH TO RADIOBIOLOGICAL PROBLEMS (U)

SEP 61 46P KREBS,A.T.;
REPT. NO. USAMRL-502

UNCLASSIFIED REPORT

DESCRIPTORS: *IONIZATION, *RADIATION EFFECTS, *RADIOBIOLOGY, *RADIOCHEMISTRY, DOSIMETERS, ELECTRON COUNTERS, INSTRUMENTATION, INTENSITY, ION BEAMS, MATHEMATICAL ANALYSIS, MEASUREMENT, NEUTRONS, TEST METHODS, TIME, X RAYS (U)
IDENTIFIERS: ELECTRON COUNTERS (M)

EXPERIMENTS AT DIFFERENT LABORATORIES, INCLUDING USAMRL, HAVE DEMONSTRATED THE EXISTENCE OF NEW EFFECTS IN PULSED IRRADIATION STUDIES AND HAVE PROVEN A PREVIOUSLY MADE PREDICTION BY MICHIEAND KROHN ON THE LOWER EFFICIENCY OF SINGLE HIGH INTENSITY PULSES IN COMPARISON TO CONVENTIONAL APPLICATION OF THE SAME TOTAL DOSE IN CONSTANT DOSE-VARIABLE RADIATION TIME EXPERIMENTS. THE APPLICATION OF PULSE TECHNIQUES IN RADIATION CHEMISTRY HAS LED TO DETAILED INFORMATION ON RADICAL FORMATION, CHAIN REACTIONS, AND LIFETIME OF THE DIFFERENT INTERMEDIATES. THE AVAILABLE RADIOBIOLOGICAL INFORMATION MANIFESTS THE IMPORTANCE OF PULSE-TECHNIQUES IN THE ENDEAVOR TO GET AN INSIGHT INTO THE BASIC MECHANISMS OF THE RADIATION-EFFECT AND TO MEASURE THE LIFETIME OF RADIATION PRODUCED FREE RADICALS AND INTERMEDIATES. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD- 275 973
ARMY MEDICAL RESEARCH LAB FORT KNOX KY

THE SEROLOGICAL SPECIFICITY OF RADIATION ALTERED HUMAN SERUM GAMMA GLOBULIN (U)

MAR 62 14P LUZZIO,ANTHONY J.;
REPT. NO. USAMRL-532
PROJ: DA-6-X-6414001

UNCLASSIFIED REPORT

DESCRIPTORS: *RADIOBIOLOGY, ANTIGENS + ANTIBODIES, BLOOD PROTEINS, BLOOD SERUM, BOVINES, DETECTION, DOSAGE, IMMUNOLOGY, HUMANS, RADIATION EFFECTS, X RAYS (U)

HUMAN SERUM GAMMA GLOBULIN AFTER INTENSE IN VITRO X-IRRADIATION WAS USED AS AN ANTIGEN TO OBTAIN ANTISERUMS IN GOATS. IT WAS FOUND TO BE DISTINCT IMMUNOLOGICALLY FROM NON-IRRADIATED OR HEATED HUMAN SERUM GAMMA GLOBULIN BY QUANTITATIVE PRECIPITIN TESTS AND POSSESSED A SLOW MOVING COMPONENT AS DETERMINED BY PAPER STRIP ELECTROPHORESIS. SIMILAR ANTIGENS WERE PRODUCED BY IRRADIATING HUMAN SERUM IN VITRO WITH LOW DOSES. PRELIMINARY EVIDENCE POINTS TO THE POSSIBILITY OF DETECTING IRRADIATION-ALTERED PROTEINS IN THE IRRADIATED PATIENT BY QUANTITATIVE IMMUNOLOGICAL METHODS. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD- 283 327
TEXAS WOMAN'S UNIV DENTON

A STUDY OF BONE CHANGES IN ALBINO RATS SUBJECTED TO LOW INTENSITY COBALT-60 GAMMA RADIATION (U)

AUG 62 1V MACK,PAULINE BEERY;VOSE,GEORGE P.; BROWN,SIDNEY O.;
CONTRACT: DA49 007MD956

UNCLASSIFIED REPORT

DESCRIPTORS: *BONES, *GAMMA RAYS, *RADIATION EFFECTS, *RADIOBIOLOGY, *RADIOGRAPHY, GROWTH(PHYSIOLOGY), LABORATORY ANIMALS, RADIOACTIVE ISOTOPES, VITAMIN A (U)

YOUNG ADULT MALE ALBINO RATS RECEIVED 50 R/DAY OF CO-60 GAMMA RADIATION FOR 91 DAYS WITH RESULTS COMPARED WITH NON-IRRADIATED CONTROLS. THE LATTER SURPASSED THE IRRADIATED ANIMALS IN: INCREASE IN BODY WEIGHT; SKELETAL GROWTH; RATE OF FRACTURE HEALING; AND BONE STRENGTH. A MACROFRACTIONATED STUDY WAS CONDUCTED WITH (A) ONE GROUP OF YOUNG ADULT MALE ALBINO RATS WHICH RECEIVED 50 R/DAY OF C -60 GAMMA RADIATION CONTINUOUSLY FOR 77 DAYS; (B) ONE GROUP WITH ALTERNA ING 7-DAY RADIATION AND REST PERIODS FOR THE SA E LENGTH OF TIME; AND (C) ONE GROUP RECEIVING NO RADIATION. THE FRACTIONATED RADIATION PRODUCED LESS DELETERIOUS EFFECTS ON CERTAIN ASPECTS OF SKELETAL STATU THAN THE CONTINUOUS RADIATION EXPOSURE; AND THE NON-IRRADIATED CONTROLS SURPASSE THE TWO IRRADIATED GROUPS. QUANTITATIVE MICRORADIOGRAPHIC TECHNIQUES WERE APPLIED TO A STUDY OF THE MECHANISM OF THE HEALING OF BONE FRACTURES. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD- 284 931
UPPSALA UNIV (SWEDEN)

HISTOLOGY OF THE SURGICAL RADIOLESION IN THE HUMAN BRAIN AS PRODUCED BY HIGH ENERGY PROTONS (U)

AUG 62 1V MAIR,WILLIAM;REXED,BROR;SOURANDER, PATRICK;
REPT. NO. TN4
CONTRACT: AF61 052 183
MONITOR: AFOSR 3480

UNCLASSIFIED REPORT

DESCRIPTORS: *BRAIN, *PROTONS, *RADIATION INJURIES, *RADIOBIOLOGY, HISTOLOGY, NERVOUS SYSTEM, PAIN, PATHOLOGY, RADIATION EFFECTS (U)
IDENTIFIERS: BRAIN INJURIES, RADIOLESIONS (M)

CHANGES IN THE MID BRAIN OF A MAN FOLLOWING IRRADIATION WERE STUDIED ON ONE SIDE OF THE SPINOTHALAMIC TRACT REGION BY HIGH ENERGY PROTONS TO RELIEVE PAIN. THE MAN WAS 59 AND SUFFERED FROM INTRACTABLE PAIN DUE TO CANCER OF THE LUNG WITH SPREAD TO THE AXILLA AND THE SUPRACLAVICULAR REGION. THE IRRADIATED REGION WAS SHARPLY DEMARCATED BEING OVOID IN SHAPE WITH A CRENATED BORDER. DESTRUCTION OF MYELIN SHEATHS, AXONS, ASTROCYTES AND OLIGODENDROGLIA OCCURRED IN THE IRRADIATED REGION AND SOME TINY PERIVASCULAR HAEMORRHAGES WERE PRESENT. NUCLEAR DEBRIS AND COLLECTIONS OF MACROPHAGES WERE FOUND AT THE EDGE OF THE NECROSIS. LITTLE PROLIFERATION OF ASTROCYTES WAS SEEN 9 WEEKS AFTER IRRADIATION. THE CHANGES WERE EXACTLY SIMILAR TO THOSE SEEN IN GOATS 7 AND 4 WEEKS AFTER IRRADIATION WITH THE SAME DOSE. TINY, DISCRETE, ROUNDED, ZONES OF NECROSIS WERE SEEN IN MAN JUST ROSTRAL TO THE CONFLUENT NECROSIS. THEY ARE PRESUMABLY THE RESULT OF INTERSECTING BEAMS AS THEY PASS TO THE CENTER OF IRRADIATION. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD- 285 094
NAVAL RADIOLOGICAL DEFENSE LAB SAN FRANCISCO CALIF

THE RADIOBIOLOGY OF TEETH (U)

AUG 62 1V KIMELDORF,D.J.;JONES,D.C.;CASTANERA, T.J.;
REPT. NO. TR579

UNCLASSIFIED REPORT

DESCRIPTORS: *RADIOBIOLOGY, *TEETH, CELLS (BIOLOGY), RADIATION EFFECTS, X RAYS (U)

THE LITERATURE REGARDING RADIATION EFFECTS UPON TEETH WAS SUMMARIZED AND REVIEWED. RADIATION EFFECTS UPON TEETH WERE OBSERVED IN A VARIETY OF SPECIES INCLUDING MAN. WHERE SUFFICIENT DATA ARE AVAILABLE TO FORM A JUDGMENT IT APPEARS THAT THE PATTERN OF ALTERATION IS SIMILAR AMONG SPECIES. THE EFFECTS ARE DEPENDENT UPON EXPOSURE FACTORS AND THE STAGE OF TOOTH DEVELOPMENT AT THE TIME OF IRRADIATION. IF THE DOSE IS MASSIVE, THE EFFECTS MAY ALSO INVOLVE DAMAGE TO THE TOOTH SUPPORTIVE STRUCTURES. RADIATION ALTERS OR DESTROYS THOSE ODONTOGENIC CELLS WHICH ARE ACTIVELY PROLIFERATING AND DIFFERENTIATING AT THE TIME OF EXPOSURE. IF IRRADIATION OCCURS BEFORE THE FORMATION OF HARD TISSUES, IT MAY DESTROY THE TOOTH BUD. RADIATION AT A LATER STAGE IN DEVELOPMENT MAY ALTER DIFFERENTIATION OR ARREST FURTHER GROWTH. THE SEVERITY OF THE EFFECT IS DEPENDENT UPON THE RADIATION DOSE. MATURE TOOTH STRUCTURES ARE AFFECTED PRIMARILY BY RELATIVELY LARGE DOSES ALTHOUGH HISTOLOGIC EVIDENCE OF DAMAGE IN GROWING TEETH OF RODENTS MAY BE DETECTED WITH 25 R OF X RAYS. THE PATTERNS OF INJURY AND REGENERATION FOR THE VARIOUS TISSUES OF THE TOOTH ARE PRESENTED. IN TERMS OF RADIOBIOLOGICAL MECHANISMS IT APPEARS THAT DIRECT RADIATION INJURY TO TEETH CONSISTS PRIMARILY OF AN INTERFERENCE WITH MITOSIS OF PROLIFERATIVE TISSUES AND THE IMPAIRMENT OF METABOLIC PROCESSES IN DIFFERENTIATING CELLS. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD- 294 513
FOREIGN TECHNOLOGY DIV WRIGHT-PATTERSON AFB OHIO

RADIOBIOLOGY (SELECTED ARTICLES) (U)

DEC 62 1V
REPT. NO. TT 62 1316

UNCLASSIFIED REPORT

DESCRIPTORS: *BRAIN, *RADIATION INJURIES, *RADIOBIOLOGY, CEREBRAL CORTEX, ELECTRIC POTENTIAL, IMMUNOLOGY, METABOLISM, PATHOLOGY, THALAMUS (U)

CONTENTS: DESTRUCTION OF THE RECTICULAR STRUCTURE IN THE MESENCEPHALON AND HYPOTHALAMUS AND ITS EFFECT ON BIOELECTRICAL REACTIONS OF THE CORTEX IN ACUTE RADIATION SICKNESS ACETYLCHOLINE METABOLISM IN THE THALAMIC REGION OF THE BRAINS OF DOGS WHICH HAVE UNDERGONE ACUTE RADIATION SICKNESS THE VALUE OF IMMUNOLOGICAL INVESTIGATIONS IN STUDYING THE PATHOGENESIS OF ACUTE RADIATION SICKNESS (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD- 295 807
FOREIGN TECHNOLOGY DIV WRIGHT-PATTERSON AFB OHIO

RADIOBIOLOGY (SELECTED CHAPTERS) (U)

JAN 63 1V GROZDENSKIY,DAVID EMMANUILOVICH;
REPT. NO. TT 62 355

UNCLASSIFIED REPORT

DESCRIPTORS: *RADIATION EFFECTS, *RADIATION INJURIES, *RADIOBIOLOGY, *RADIOCHEMISTRY, ANIMALS, CANCER, CELLS (BIOLOGY), EMBRYOS, LEUKEMIA, HUMANS, MEDICINE, METABOLISM, OXYGEN, PLANTS (BOTANY), RADIOACTIVITY, RADIATION DOSAGE, THERAPY, WATER (U)

TRANSLATION OF SELECTED USSR ARTICLES ON RADIOBIOLOGY: CHEMICAL EFFECT OF RADIATION; RADIATION EFFECT ON CELLS AND THE WHOLE ORGANISM; CHEMICAL PROTECTION AND TREATMENT.

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD- 296 447
EMORY UNIV ATLANTA GA

ION EFFECTS IN X-RAY DEPOLARIZATION OF MUSCLE MEMBRANE (U)

DEC 62 1V PORTELA,ADOLFO;PEREZ,JUAN C.;
CONTRACT: DA49 193MD2256

UNCLASSIFIED REPORT

DESCRIPTORS: *MUSCLES, *RADIATION EFFECTS, *RADIOBIOLOGY, AMPHIBIANS, CALCIUM COMPOUNDS, ELECTRIC POTENTIAL, ELECTROLYTES (PHYSIOLOGY), IONS, MEMBRANES (BIOLOGY), PHYSIOLOGY, POTASSIUM COMPOUNDS, SODIUM COMPOUNDS (U)

IRRADIATION OF FROG SARTORIUS MUSCLES WITH 100 KR OF X-RAYS RESULTS IN A RELATIVE DECREASE IN RESTING MEMBRANE POTENTIAL WHICH IS DEPENDENT ON EXTERNAL SODIUM CONCENTRATION, BUT NOT ON POTASSIUM CONCENTRATION PROVIDED THAT THE LATTER EXCEEDS 1.0 MM. IN ZERO POTASSIUM SOLUTIONS, THE POTENTIAL DECREASES MORE, AND CONTINUES TO FALL AFTER IRRADIATION. NEITHER IRRADIATION NOR STIMULATION ALTERS THE RATE AT WHICH CA45 IS LOST FROM PREVIOUSLY LOADED MUSCLE FIBERS. APPARENTLY IRRADIATION DAMAGE TO THE MUSCLE CELL MEMBRANE RESULTS IN INCREASED PERMEABILITY TO SODIUM, BUT NOT VIA THE RELEASE OF CALCIUM IONS. SODIUM EXTRUSION MECHANISMS ARE ALTERED BY IRRADIATION SO AS TO REQUIRE AN EXTERNAL POTASSIUM CONCENTRATION ABOVE 1.0MM TO MATCH THE INCREASE OF NA INFLUX. PERMEABILITY TO POTASSIUM DOES NOT APPEAR TO BE ALTERED BY IRRADIATION. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD- 296 448
EMORY UNIV ATLANTA GA

CESIUM-SODIUM INTERACTIONS ON X-RAY DEPOLARIZATION OF MUSCLE FIBERS (U)

DEC 62 1V PORTELA,ADOLFO;PEREZ,JUAN C.;
CONTRACT: DA49 193MD2256

UNCLASSIFIED REPORT

DESCRIPTORS: *CESIUM COMPOUNDS, *MUSCLES, *RADIATION EFFECTS, *RADIOBIOLOGY, AMPHIBIANS, ELECTRIC POTENTIAL, ELECTROLYTES (PHYSIOLOGY), IONS, MEMBRANES (BIOLOGY), PHYSIOLOGY, POTASSIUM COMPOUNDS, SODIUM COMPOUNDS (U)

CESIUM IONS IN BATHING FLUID PRODUCE A DEPOLARIZATION OF FROG SARTORIUS MUSCLE FIBERS INDEPENDENT OF THE DEPOLARIZATION PRODUCED BY IRRADIATION. THE FRACTIONAL DEPOLARIZATION PRODUCED BY X-RAYS IS INDEPENDENT OF EXTERNAL CESIUM CONCENTRATION, BUT PROPORTIONAL TO EXTERNAL SODIUM CONCENTRATION, AND IS EXPLAINED AS THE RESULT OF AN INCREASED SODIUM ION PERMEABILITY. CESIUM DEPOLARIZATION (20MMCS) IN NON-IRRADIATED FIBERS INCREASES WITH DECREASING SODIUM CONCENTRATION, INDICATING A SPECIFIC SODIUM-CESIUM INTERACTION IN THE MEMBRANE. A SIMPLE CONCENTRATION-CELL POTENTIAL EXPLANATION FOR THE CESIUM EFFECTS IS NOT YET ADEQUATE. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD- 296 449
EMORY UNIV ATLANTA GA

RADIATION DAMAGE IN MUSCLE CELL MEMBRANES AND REGULATION OF CELL METABOLISM (U)

DEC 62 1V PORTELA,ADOLFO;PEREZ,JUAN CARLOS;
CONTRACT: DA49 193MD2256

UNCLASSIFIED REPORT

DESCRIPTORS: *METABOLISM, *MUSCLES, *RADIATION EFFECTS, *RADIOBIOLOGY, ADENOSINE PHOSPHATES, AMPHIBIANS, BIOCHEMISTRY, ELECTROLYTES (PHYSIOLOGY), ENERGY, ENZYMES, IONS, MEMBRANES (BIOLOGY), MICROSOMES, POTASSIUM COMPOUNDS, RADAR, RELAXATION (PHYSIOLOGY), SODIUM COMPOUNDS (U)

EFFECTS OF 100,000R DOSES ON STRIATED FROG MUSCLES INCLUDE PROLONGED RELAXATION TIME, MORE RAPID FATIGUE, AND DECREASED ATP AND GLYCOGEN CONTENT, BUT INCREASED POTASSIUM AND SODIUM EFFLUXES, SODIUM INFLUX AND OXYGEN CONSUMPTION, COMPARED WITH NON-IRRADIATED CONTROLS. TWITCH LATENCY AND RISE TIME ARE NOT CHANGED. MAGNESIUM-ACTIVATED ATPASE ACTIVITY OF HOMOGENATES OR MITOCHONDRIAL SUSPENSIONS DECREASES IMMEDIATELY AFTER IRRADIATION, BUT INCREASES WITH TIME MORE RAPIDLY THAN IN CONTROLS. BIOCHEMICAL FINDINGS SUGGEST UNCOUPLING OF OXIDATIVE PHOSPHORYLATION; ION FLUX DATA SUGGEST INCREASED MEMBRANE PERMEABILITY. THIS LEADS TO THE HYPOTHESIS THAT IRRADIATION RESULTS IN SARCOPLASMA MEMBRANE DAMAGE, THEREBY INCREASING ION PERMEABILITIES, AND MITOCHONDRIAL STRUCTURE DAMAGE, THEREBY INTERFERING WITH OXIDATIVE HOSPHORYLATION AND REDUCING ATP PRODUCTION. A 90% DECREASE IN MEMBRANE POTENTIAL DURING IRRADIATION HAS ALREADY BEEN REPORTED. THE OBSERVED INCREASES IN NA AND K FLUXES AFTER IRRADIATION EXPLAIN THESE FINDINGS. AT THESE RADIATION LEVELS, OUR DATA DO NOT REQUIRE ANY HYPOTHESIS OF EARLY DIRECT DAMAGE TO THE CONTRACTILE MECHANISM PER SE. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 298 314
JOINT PUBLICATIONS RESEARCH SERVICE WASHINGTON D C

BIOCHEMICAL MECHANISMS OF RADIATION SICKNESS (AND) THE PROBLEM OF SCIENTIFICALLY SUBSTANTIATING THE DEGREE OF EPIDEMIOLOGICAL EFFECTIVENESS OF VARIOUS VACCINES (U)

DEC 62 1V RODIONOV,V.M.;BAROYAN,O.V.;
REPT. NO. 16772

UNCLASSIFIED REPORT

DESCRIPTORS: *RADIOBIOLOGY, BIOCHEMISTRY, COMMUNICABLE DISEASES, EFFECTIVENESS, EPIDEMIOLOGY (U)

BIOCHEMICAL MECHANISMS OF RADIATION SICKNESS (AND) THE PROBLEM OF SCIENTIFICALLY SUBSTANTIATING THE DEGREE OF EPIDEMIOLOGICAL EFFECTIVENESS OF VARIOUS VACCINES.

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD- 290 499
LIBRARY OF CONGRESS WASHINGTON D C AEROSPACE TECHNOLOGY DIV

CHARACTERISTICS OF PHYSIOLOGICAL AND BIOCHEMICAL SHIFTS ASSOCIATED WITH THE PROTRACTED ACTION OF SMALL DOSES OF C060 GAMMA-RAYS ON ORGANISMS (U)

DEC 62 1V ZLATIN,R.S.;MAKARCHENKO,O.F.; SIROTINA,M.F.;

UNCLASSIFIED REPORT

DESCRIPTORS: *GAMMA RAYS, *RADIOBIOLOGY, BIOCHEMISTRY, BLOOD, COBALT, DOGS, HEMATOLOGY, NEUROLOGY, PHYSIOLOG(U)
IDENTIFIERS: STEP (M)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD- 299 522
LIBRARY OF CONGRESS WASHINGTON D C AEROSPACE TECHNOLOGY DIV

IMMUNOLOGICAL PROPERTIES OF DENATURATED SERUM PROTEINS IN RABBITS SUBJECTED TO IONIZING RADIATION (U)

DEC 62 1V PROKOPENKO,L.G.;

UNCLASSIFIED REPORT

DESCRIPTORS: *RADIOBIOLOGY, BLOOD, BLOOD PROTEINS, BLOOD SERUM, DOSE RATE, IMMUNOLOGY, LABORATORY ANIMALS, PATHOLOGY, RABBITS, SERUM ALBUMIN (U)
IDENTIFIERS: STEP (M)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD- 299 598
LIBRARY OF CONGRESS WASHINGTON D C AEROSPACE TECHNOLOGY DIV

CHAIN REACTIONS IN THE DAMAGE OF CELLS BY IONIZING RADIATION (U)

DEC 60 1V TARUSOV,B.N.;

UNCLASSIFIED REPORT

DESCRIPTORS: *RADIOBIOLOGY, LETHAL DOSAGE, MITOSIS, OXYGEN CONSUMPTION, RADAR TARGET POSITION SIMULATORS, RADIATION DOSAGE (U)
IDENTIFIERS: STEP (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD- 299 746
LIBRARY OF CONGRESS WASHINGTON D C AEROSPACE TECHNOLOGY DIV

INFLUENCE OF X-RAY IRRADIATION ON THE METABOLISM OF LIPIDES IN THE LIVER OF A DOG (U)

DEC 62 1V POLOSUKHINA,T.Y.;VALITOVA,M.S.;

UNCLASSIFIED REPORT

DESCRIPTORS: *LIPIDS, *RADIOBIOLOGY, BIOCHEMISTRY, BLOOD SERUM, CHOLESTEROL, DOGS, GLYCOGEN, HEMATOLOGY, LIVER, METABOLISM, RADIATION DOSAGE (U)
IDENTIFIERS: STEP (M)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD- 400 203
JOINT PUBLICATIONS RESEARCH SERVICE WASHINGTON D C

TRAINING OF MEDICAL RADIOLOGY PERSONNEL (U)

NOV 62 1V KOZLOVA,A.V.;
REPT. NO. 16320

UNCLASSIFIED REPORT

DESCRIPTORS: *MEDICAL PERSONNEL, *RADIOBIOLOGY, *TRAINING, DIAGNOSIS(MEDICINE), RADIOACTIVITY, THERAP(U)

TRANSLATION OF FOREIGN RESEARCH; TRAINING OF MEDICAL RADIOLOGY PERSONNEL.

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD- 400 217
JOINT PUBLICATIONS RESEARCH SERVICE WASHINGTON D C

REPORTS OF THE ACADEMY OF SCIENCES USSR, 1962, VOL. 145, NO. 1: SELECTED ARTICLES (U)

NOV 62 1V
REPT. NO. 16333

UNCLASSIFIED REPORT

DESCRIPTORS: *PHOTOSYNTHESIS, *RADIOBIOLOGY, *RADIOPROTECTIVE AGENTS, COUNTERMEASURES, DRUGS, FLUORESCENCE, MUSCLES, OPTICS, OXYGEN, PHYSIOLOGY, RADIATION INJURIES, RESPIRATION, SHOCK (PATHOLOGY), SKELETON, TEMPERATURE, TISSUES (BIOLOGY) (U)

TRANSLATION OF FOREIGN RESEARCH; REPORTS OF THE ACADEMY OF SCIENCES USSR, 1962, VOL. 145, NO. 1: SELECTED ARTICLES.

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD- 400 405
JOINT PUBLICATIONS RESEARCH SERVICE WASHINGTON D C

MEDICAL RADIOLOGY, 1962, VOL. 7, NO. 8: (SELECTED) ARTICLES (U)

NOV 62 1V
REPT. NO. 16242

UNCLASSIFIED REPORT

DESCRIPTORS: *MEDICAL RESEARCH, *RADIOBIOLOGY, BIOLOGY, ELECTRONICS, IMMUNITY, IONIZATION, MEDICINE, MUSCULOSKELETAL SYSTEM, PRIMATES, RADIATION EFFECTS, SYMPOSIA (U)
IDENTIFIERS: MEDICAL RADIOLOGY (U)

TRANSLATION OF FOREIGN RESEARCH; MEDICAL RADIOLOGY.

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD- 400 580
JOINT PUBLICATIONS RESEARCH SERVICE WASHINGTON D C

THE EFFECT OF CENTIMETER BAND RADIO WAVES ON THE ABSORPTION OF AMINO ACIDS, CHLORIDES AND WATER IN THE STOMACH AND INTESTINES (U)

DEC 62 1V FAYTEL'BERH,V. R. ;

UNCLASSIFIED REPORT

DESCRIPTORS: *RADIOBIOLOGY, ABSORPTION, AMINO ACIDS, CHLORIDES, DOGS, GASTROINTESTINAL SYSTEM, HIGH FREQUENCY, INTESTINES, RADIO WAVES (U)
IDENTIFIERS: STEP (M)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD- 400 635
NAVAL RADIOLOGICAL DEFENSE LAB SAN FRANCISCO CALIF

COMPARATIVE EFFECTS OF 50 KVP AND 250 KVP X RAYS ON THE DOG (U)

JAN 63 1V BAUM,S.J.;ALPEN,E.L.;
REPT. NO. TR616

UNCLASSIFIED REPORT

DESCRIPTORS: *RADIOBIOLOGY, *RADIATION DOSAGE, BLOOD COUNTS, BLOOD VOLUME, BONE MARROW, DOGS, HEMOPOIETIC SYSTEM, INTEGUMENTARY SYSTEM, IRON, LABELED SUBSTANCES, PATHOLOGY, PHYSIOLOGY, RADIATION MEASURING INSTRUMENTS, RADIOACTIVE ISOTOPES, SCINTILLATION COUNTERS (U)
IDENTIFIERS: LET (M)

RESEARCH STUDY WAS MADE TO DEFINE PHYSICAL DOSE DISTRIBUTION UNDER BOTH A UNIFORM AND A HIGHLY NON-UNIFORM CONDITION AND TO OBSERVE AND CORRELATE THE FINDINGS WITH PHYSICAL DOSE MEASUREMENT.

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD- 401 027
NAVAL RADIOLOGICAL DEFENSE LAB SAN FRANCISCO CALIF

MOTOR RESPONSES IN MOTHS TO LOW INTENSITY X-RAY EXPOSURE (U)

FEB 63 1V SMITH,J.C.;KIMELDORF,D.J.;HUNT,E.L.;
REPT. NO. TR622

UNCLASSIFIED REPORT

DESCRIPTORS: *INSECTS, *RADIOBIOLOGY, BRAIN, FLIGHT, INTENSITY, LEPIDOPTERA, MOTOR REACTIONS, RADIATION EFFECTS, SPINAL CORD (U)

RESEARCH ON MOTOR RESPONSES IN MOTHS TO LOW INTENSITY X-RAY EXPOSURE. BURST OF X-RAYS ELICITED FLIGHT ACTIVITY IN MOTH WHEN PLACED IN A DARKENED X-RAY EXPOSURE ROOM. WING BEAT ACTIVITY RECORDED AS AN INDEX OF THIS BEHAVIOR.

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD- 402 519
JOINT PUBLICATIONS RESEARCH SERVICE WASHINGTON D C

RADIOBIOLOGY: THE RADIATION INJURY MECHANISM IN MOUSE OVARIES AND ELECTRICAL STIMULATION OF THE HEART BY MEANS OF RADIOFREQUENCY IMPULSE TRANSMISSION, (U)

MAR 63 18P KASHCHENKO,L.A.;BABSKII, E.D.;
REPT. NO. 18045

UNCLASSIFIED REPORT
AVAILABILITY: MICROFILM ONLY AFTER ORIGINAL COPIES EXHAUSTED.
SUPPLEMENTARY NOTE: TRANS. OF AKADEMIYA NAUK SSSR. DOKLADY, 1962, V. 147, NO. 1, P. 217-220 AND 255-258.
NOTICE: ALSO FROM OTS FOR $.50 AS REPT. NO. 63 21290.

DESCRIPTORS: *RADIOBIOLOGY, *RADIATION, MICE, STIMULATION(PHYSIOLOGY), *HEART, RADIO, SEX GLANDS, BIONICS. (U)

TRANSLATION OF FOREIGN RESEARCH; RADIATION INJURY MECHANISM IN MOUSE OVARIES; ELECTRICAL STIMULATION OF THE HEART BY RADIOFREQUENCY IMPULSE TRANSMISSION.

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD- 403 741
JOINT PUBLICATIONS RESEARCH SERVICE WASHINGTON D C

MEDICINE AND PHYSIOLOGY SELECTED ARTICLES. (U)

MAR 63 25P
REPT. NO. 18339.

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: TRANS. OF FIZIOLOGICHNYI ZHURNAL (USSR), 8:6, PP. 701-108, 815-817, 827-829, 1962. ALSO FROM OTS FOR $.75 AS REPT. 63-21417.

DESCRIPTORS: *MEDICINE, *PHYSIOLOGY, UNIVERSI, MEDICAL RESEARCH, MEDICAL PERSONNEL, RADIOACTIVE ISOTOPES, *PHOSPHORUS, *MUSCLES, FATIGUE (PHYSIOLOGY), *POTENTIOMETERS, *RADIO, METABOLISM, AGE FACTORS, *MEDICAL (U)

CONTENTS: THE ACADEMY OF SCIENCES UKRAINIAN SSR AND ITS ROLE IN THE FORMATION OF THE LEADING MEDICAL SCHOOLS, BY O. F. MAKARCHENKO AND K. F. DUPLENKO AGE PECULIARITIES OF RADIOACTIVE PHOSPHOROUS ASSIMILATION BY SKELETAL MUSCLES IN VARIOUS DEGREES OF FATIGUE, BY O. V. EPSHTEIN UTILIZING MULTICHANNEL ELECTRONIC POTENTIOMETERS FOR PHYSIOLOGICAL INVESTIGATIONS, BY V. YA. BEREZOVS'KII AND V. I. MIRUTENKO (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD- 405 421
JOINT PUBLICATIONS RESEARCH SERVICE WASHINGTON D C

MEDICAL RADIOLOGY, 1962, VOL. 7, NO. 11:
(SELECTED) ARTICLES. (U)

JAN 63 58P
REPT. NO. 17402

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: TRANS. OF MEDITSINSKAYA RADIOLOGIYA (USSR) 1962, V. 7, NO. 11, P. 23-31, 39-53, 65-73, 83-85, 92-94. ALSO FROM OTS FOR $1.50 AS REPT. 63 21030.

DESCRIPTORS: *RADIOBIOLOGY, *RADIATION, PERSONNEL, DIAGNOSIS(MEDICINE), RADIOACTIVE, DISEASES, IODINE, *THYROID GLAND, POISONING, COUNTERMEASURES, *BLOOD, PATHOLOGY, SKIN(ANATOMY), X-RAYS, DAMAGE, RADIATION EFFECTS, *EYE, *BONE, TRANSPLANTATION, TISSUES (BIOLOGY), SPLEEN, CONFERENCES, *RADIOPROTECTIVE DRUGS, *RADIATION INJURIES. (U)

CONTENTS: ORGANIZATION OF WORK AND NORMS FOR THE WORK-LOAD OF PERSONNEL ENGAGED IN THE DIAGNOSIS AND TREATMENT OF DISEASES OF THE THYROID GLAND BY RADIOACTIVE IODINE, BY V. KH. FRENKEL' FIRST AID IN RADIOACTIVE IODINE POISONING, BY V. P. BORISOV CHANGES IN PERIPHERAL BLOOD DURING RADIATION THERAPY, BY E. V. KARIBSKAYA AND T. E. MATETSKAYA EARLY CHANGES IN THE SKIN CHRONAXY AND VISUAL ANALYSORS IN PERSONS EXPOSED TO A SINGLE LOCAL X-RAY TREATMENT, BY A. S. EFIMOVA LUMINESCENT-MICROSCOPIC EVALUATION OF THE BLOOD AND BONE MARROW DURING X-RAY IRRADIATION, BY V. A. KOLPAKOV AND M. M. POPOV TREATMENT OF RADIATION SICKNESS BY HOMOTRANS PLANTATION OF FRESH AND PRESERVED SPLEEN, BY V. A. REVIS EXPERIMENTAL EFFECT OF SEVERAL PHARMACOPEIAL PREPARATIONS ON RADIATION SICKNESS, BY A. V. SHUBINA SCIENTIFIC CONFERENCE ON RECOVERY FROM RADIATION INJURIES, MAY 62, BY O. V. POPOV (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD- 416 717
AEROSPACE MEDICAL DIV BROOKS AFB TEX

APPLICATION OF SEMICONDUCTOR RADIATION DETECTORS TO RADIOLOOLOGIC PROBLEMS. (U)

AUG 63 9P
MONITOR: SAM TDR-63-25

UNCLASSIFIED REPORT

DESCRIPTORS: (*SEMICONDUCTOR DEVICES, RADIO), (*RADIOBIOLOGY, SEMICONDUCTOR DE), DESIGN, MANUFACTURING, MA, FEASIBILITY STUDIES, RADIATION MONT, PROTONS, NEUTRONS. (U)

THE EXPERIMENTAL CHARACTERISTICS OF SEMICONDUCTOR PARTICLE DETECTORS HAVE BEEN STUDIED EXTENSIVELY TO DETERMINE RESPONSE, RESOLUTION, RISE TIME, STABILITY, AND IRRADIATION EFFECTS. SURFACE BARRIER DETECTORS, DIFFUSED P-N JUNCTION DETEC TORS, AND ION-DRIFTED P-I-N DETECTORS HAVE BEEN EXPOSED TO MANY DIFFERENT ENERGIES OF PROTONS, ELECTRONS, PHOTONS, AND NEUTRONS. THE CHARACTER ISTICS OF THE RESPONSE OF EACH TYPE OF DETECTOR TO EACH TYPE OF IONIZING RADIATION HAVE BEEN DE TERMINED AS A FUNCTION OF GEOMETRY AND OPERATING CONDITIONS. THIS BASIC INFORMATION CONCERNING THE DETECTORS IS BEING USED TO SOLVE RADIOBIO LOGIC PROBLEMS IN THE LABORATORY AND IN SPACE. THE APPLICATIONS INCLUDE (1) PARTICLE IDENTIFICA TION, (2) ENERGY SPECTRUM MEASUREMENT, (3) ENERGYBED IN THE SILICON FROM THE IONIZING PARTI CLE, (4) TRANSLATION OF ENERGY ABSORBED IN SILI CON TO ENERGY ABSORBED IN TISSUE, I.E., DOSE MEASUREMENT, AND (5) DEPTH DOSE MEASUREMENTS BY EMBEDDING DETECTORS IN ANIMALS. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD- 419 563
NAVAL RADIOLOGICAL DEFENSE LAB SAN FRANCISCO CALIF

INDUCTION OF HOMOGRAFT TOLERANCE IN SUBLETHALLY X-IRRADIATED ADULT MICE, (U)

AUG 63 12P COLE,L. J. ;DAVIS,W. E. ;
REPT. NO. USNRDL-TR-668

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (*RADIATION EFFECTS, IMMUNOLOGY), (*X-RAYS, TRANSPLANTATION), MICE, SPLEEN, WHOLE BODY IRRADIATION, BONE MARROW, PATHOLOGY, TOLERANCE (PHYSIOLOGY), SKIN(ANATOMY), LABORATORY ANIMALS (U)
IDENTIFIERS: HOMOGRAFTS, HYBRID (U)

AN ATTEMPT HAS BEEN MADE TO ACHIEVE HOMOGRAFT TOLERANCE IN SUBLETHALLY IRRADIATED ADULT MICE UNDER CONDITIONS WHICH AVOID SECONDARY DISEASE. ALLOGENEIC MICE WHICH SHARE THE SAME H-2 LOCUS, BUT DIFFER AT OTHER HISTOCOMPATIBILITY LOCI, HAVE NOW BEEN USED WITH SOME SUCCESS. A TOLERANT STATE HAS BEEN PRODUCED IN CBA (H-2K) MICE BY FIRST EXPOSING THEM TO SUBLETHAL X-RADIATION (500 RAD) OR URETHAN-TREATMENT COUPLED WITH IRRADIATION, AND THEN INJECTING C3H (H-2K) SPLEEN (18 X 10 TO THE 6TH POWER) AND/OR BONE MARROW (42 X 10 TO THE 6TH POWER) CELLS WITHIN 3 DAYS POST IRRADIATION. THESE MICE HAVE RETAINED SUBSEQUENT C3H SKIN HOMOGRAFTS (OVER 165 DAYS) BUT HAVE REJECTED BALB/C SKIN GRAFTS (H-2D) WITHIN 33 DAYS. ON THE OTHER HAND, IRRADIATED AND URETHAN-TREATED CONTROLS, UNINJECTED OR INJECTED WITH X-RAY INACTIVATED (2000 RAD IN VITRO) C3H CELLS, REJECTED BOTH C3H AND BALB/C HOMOGRAFTS BY 70 DAYS. SIMILAR RESULTS, ALTHOUGH LESS DEFINITIVE, HAVE BEEN OBTAINED USING C3H (HD2K) OR BALB/C (H-2D) AS THE RECIPIENT MICE AND CBA (H-2K) OR DBA/2 (H-2D) MICE RESPECTIVELY, FOR THE DONOR CELLS. SUCH PROCEDURES, HOWEVER, HAVE BEEN UNSUCCESSFUL IN PRODUCING HOMOGRAFT TOLERANCE BETWEEN DONOR AND HOST F1 HYBRID MICE WHICH HAVE ONE H-2 HISTOCOMPATIBILITY LOCUS IN COMMON BUT DIFFER AT THE OTHER. THE SIGNIFICANCE OF THESE RESULTS IS DISCUSSED. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD- 421 070
NAVAL RADIOLOGICAL DEFENSE LAB SAN FRANCISCO CALIF

AROUSAL REACTIONS WITH A BRIEF PARTIAL-AND WHOLE-BODY X-RAY EXPOSURE. (U)

SEP 63 15P HUNT,E. L. ;KIMELDORF,D. J.
;
REPT. NO. USNRDL-TR-670
PROJ: MR005.08
TASK: MR005.08.52

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (*X RAYS, RATS), (*NERVOUS SYSTEM, RADIATION EFFECTS), (*RADIATION EFFECTS, NERVOUS SYSTEM), SENSITIVITY, DISTRIBUTION, VISION, LABORATORY ANIMALS, STIMULATION(PHYSIOLOGY), GANGLIA, PSYCHOLOGY, WHOLE BODY IRRADIATION, PARTIAL BODY IRRADIATION (U)

A STUDY WAS MADE TO DETERMINE THE SENSITIVITY OF THE MAMMALIAN NERVOUS SYSTEM TO NON-VISUAL STIMULATION WITH IONIZING RADIATION. BLINDED RATS WERE EXPOSED, WHILE ASLEEP, TO A ONE-SECOND BURST OF X RAYS AND MEASUREMENTS OF BEHAVIORAL AROUSAL AND HEART RATE WERE MADE TO INDICATE ACTIVATION OF THE CENTRAL NERVOUS SYSTEM. THE STIMULUS WAS IMMEDIATELY EFFECTIVE SINCE REACTION LATENCIES OF ONE SECOND OR LESS WERE FREQUENTLY RECORDED. THE RELATIVE INCIDENCE OF AROUSAL AND OF A HEART RATE REACTION, WAS FOUND TO BE RELATED TO THE RADIATION DOSE RATE OVER THE RANGE OF FROM 0.05 TO 3.2 R/SEC. THE THRESHOLD DOSE RATE WAS LESS THAN 0.05 R/SEC. TO TEST FOR REGIONAL DISTRIBUTION OF SENSITIVITY, ADDITIONAL BLINDED ANIMALS WERE EXPOSED TO A BURST OF X RAYS AT THE DOSE RATE OF 1.0 R/SEC. WITH EXPOSURE LIMITED TO THE HEAD REGION OR TO THE REST OF THE BODY. THE RESULTS OF THE STUDY ARE CONSISTENT WITH THE POSTULATION THAT GANGLIONIC TISSUE IS DIRECTLY SENSITIVE TO IONIZING RADIATION. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD- 430 440
FOREIGN TECHNOLOGY DIV WRIGHT-PATTERSON AFB OHIO

PLUTONIUM-239. ITS DISTRIBUTION, BIOLOGICAL EFFECT AND ACCELERATED ELIMINATION. (PLUTONIY 239 RASPREDELENIYE, BIOLGICHESKOYE DEYSTVIYE, USKORENIYE VYVEDENIYA). (U)

NOV 63 278P
MONITOR: FTD TT63 559

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: TRANS. FROM GOSUDARSTVENNOYE IZDATEL'STVO MEDITSINSKOY LITERATURY MEDGIZ-1962, PP. 1-168, 1962.

DESCRIPTORS: (*PLUTONIUM, RADIOBIOLOGY), (*RADIOBIOLOGY, PLUTONIUM), DISTRIBUTION, EXCRETION, BONES, TISSUES (BIOLOGY), BIOSYNTHESIS, RADIOACTIVE ISOTOPES, RADIATION INJURIES, PATHOLOGY, BLOOD, TOXICITY, LABORATORY ANIMALS (U)

TRANSLATION OF FOREIGN RESEARCH ON THE DISTRIBUTION, BILOGICAL EFFECT AND ACCELERATED ELIMINATION OF PLUTONIUM-239.

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD- 433 529
FOREIGN TECHNOLOGY DIV WRIGHT-PATTERSON AFB OHIO

THE BIOLOGICAL ACTION OF HIGH ENERGY FAST NEUTRONS AND PROTONS, (U)

JAN 64 31P MOSKALEV,YU I. ;PETROVICH, I. K. ;STREL'TSOVA,V. N. ;
MONITOR: FTD TT63 1049

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: TRANS. FROM BIOLOGICHESKOYE DEISTVIYE BYSTRYKH NEYTRONOV I PROTONOV VYSOKIKH ENERGIY, SIMPOZIUM PO BIOLOGICHESKOMY VOZDEYSTVIYA NEYTRONNYKH OBLUCHENIY, SM-44/58, PP. 1-33, 7-11 OCT 63.

DESCRIPTORS: (*FAST NEUTRONS, RADIOBIOLOGY), (*PROTONS, RADIOBIOLOGY), (*RADIOBIOLOGY, NUCLEAR REACTIONS), RADIATION DOSAGE, RADIATION EFFECTS, LETHAL DOSAGE, PATHOLOGY, NEOPLASMS, RATS, SURVIVAL(PERSONNEL), ANALYSIS OF, LEUKEMIA, BLOOD, HEMOPOIETIC SYSTEM (U)
IDENTIFIERS: RADIATION TOLERANCE (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD- 448 438
WALTER REED ARMY INST OF RESEARCH WASHINGTON D C

STUDIES ON IRON ABSORPTION. INTESTINAL REGULATORY MECHANISMS, (U)

MAR 64 8P WHEBY,MUNSEY S. ;JONES, LEEROY G. ;CROSBY,WILLIAMH. ;

UNCLASSIFIED REPORT
REPRINT FROM JNL. OF CLINICAL INVESTIGATION,43:7, PP. 1433-1422, 1964. (COPIES NOT SUPPLIED BY DDC)
SUPPLEMENTARY NOTE:

DESCRIPTORS: (*METABOLISM, IRON), (*ABSORPTION, IRON), TRACER STUDIES, RATS, DETERMINATION, RADIOACTIVE ISOTOPES, LABELED SUBSTANCES, INTESTINES, HISTOLOGY, DIET, BILE, GASTROINTESTINAL SYSTEM (U)
IDENTIFIERS: DUODENUM (U)

STUDIES ON RATE AND SITE OF IRON ABSORPTION WERE PERFORMED DURING THE EARLY, RAPID PHASE OF IRON ABSORPTION BY THE USE OF CLOSED INTESTINAL LOOPS IN ANESTHETIZED BUT OTHERWISE INTACT RATS WITH VARYING BODY IRON STORES. WITH THE USE OF FE59 AND WHOLE BODY COUNTING, IT WAS POSSIBLE TO DETERMINE TOTAL IRON ABSORBED FROM INTESTINAL LUMEN AND IRON TRANSFERRED TO CARCASS DURING ACCURATELY TIMED ABSORPTION PERIODS. THE FINDINGS SUGGEST THAT IRON IS ABSORBED BY AN ACTIVE TRANSPORT MECHANISM COMPRISED OF AT LEAST TWO STEPS: 1) MUCOSAL UPTAKE OF IRON FROM LUMEN AND 2) MUCOSAL TRANSFER OF IRON TO CARCASS. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD- 449 639
TORONTO UNIV (ONTARIO)

CLEARING FACTOR LIPASE AND THE IRRADIATION SYNDROME, (U)

SEP 62 9P BAKER,D. G. ;MONKHOUSE,F. C. ;

UNCLASSIFIED REPORT
REPRINT FROM RADIATION RESEARCH, 20:1, PP. 8-16,SEP 63. (COPIES NOT SUPPLIED BY DDC)
SUPPLEMENTARY NOTE:

DESCRIPTORS: (*RADIATION EFFECTS, BLOOD PLASMA), (*BLOOD PLASMA, FATTY ACIDS), X RAYS, RATS, HEPARIN, METABOLISM, ENZYMES, WHOLE BODY IRRADIATION, LIVER, RADIOPROTECTIVE AGENTS (U)

IN RATS EXPOSED TO 800 R OF WHOLE-BODY XIRRADIATION, THE CLEARING FACTOR LIPASE (CFL) ACTIVITY OF PLASMA REMAINED ELEVATED FOR ABOUT 7 DAYS, COMPARED TO THAT OF PAIR-FED CONTROLS. IRRADIATION OF THE LIVER REGION ONLY FAILED TO HAVE A RADIOPROTECTIVE EFFECT. AN ELEVATED, HEPARIN-INDUCED PLASMA CFL ACTIVITY DURING THE IRRADIATION OR THROUGHOUT THE FIRST 5 DAYS POSTIJRADIATION WAS ASSOCIATED WITH AN INCREASED 30-DAY MORTALITY. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD- 455 892
WALTER REED ARMY INST OF RESEARCH WASHINGTON D C

CLEARANCE OF IRON FROM HEMOCHROMATOTIC AND NORMAL TRANSFERRIN IN VIVO, (U)

JUN 64 5P WHEBY,MUNSEY S. ;BALCERZAK, STANLEY P. ;ANDERSON,PEARL;CROSBY,WILLIAM H. ;

UNCLASSIFIED REPORT
REPRINT FROM BLOOD. 24:6, PP. 765-769, DEC 64.(COPIES NOT SUPPLIED BY DDC)
SUPPLEMENTARY NOTE:

DESCRIPTORS: (*IRON, METABOLIC DISEASES), BIOCHEMISTRY, BLOOD ANALYSIS, TRACER STUDIES, RADIOACTIVE ISOTOPES, BLOOD PROTEINS, TRANSPORT PROPERTIES, PHYSIOLOGY, MEDICAL RESEARCH (U)
IDENTIFIERS: TRANSFERRIN (U)

THE IRON TRANSPORT FUNCTION OF TRANSFERRIN FROM NORMAL SUBJECTS AND PATIENTS WITH IDIOPATHIC HEMACHROMATOSIS HAS BEEN STUDIED USING THE RADIOISOTOPES FE59 AND FE55. IT WAS CONCLUDED THAT TRANSFERRIN FROM HEMOCHROMATOTIC PATIENTS FUNCTIONS IN A NORMAL MANNER IN VIVO. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD- 455 894
WALTER REED ARMY INST OF RESEARCH WASHINGTON D C

IRON EXCRETION BY THE SKIN. SELECTIVE LOCALIZATION OF IRON-59 IN EPITHELIAL CELLS, (U)

JUL 64 7P WEINTRAUB,LEWIS R. ;DEMIS, D. JOSEPH ;CONRAD,MARCEL E.;CROSBY,WILLIAM H. ;

UNCLASSIFIED REPORT
REPRINT FROM AMERICAN JNL. OF PATHOLOGY, 46:1PP. 121-127, JAN 65. (COPIES NOT SUPPLIED BYDDC)

DESCRIPTORS: (*IRON, SKIN(ANATOMY)), (*SKIN(ANATOMY), IRON), EXCRETION, LABELED SUBSTANCES, TRACER STUDIES, RADIOACTIVE ISOTOPES, PATHOLOGY, AUTORADIOGRAPHY, METABOLISM (U)

FOLLOWING AN INTRAVENOUS DOSE OF IRON-59 LOSS OF WHOLE BODY RADIOACTIVITY WAS SIGNIFICANTLY GREATER THAN COULD BE ACCOUNTED FOR IN CUMULATIVE COLLECTIONS OF STOOL AND URINE. SELECTIVE LOCALIZATION OF IRON IN THE EPITHELIAL CELLS OF THE EPIDERMIS AND ITS APPENDAGES WITH SUBSEQUENT EXTERNAL LOSS WAS DEMONSTRATED IN NORMAL VOLUNTEERS WITH THE AID OF RADIOAUTOGRAPHY. THAT THIS WAS AN ACTIVE EXCRETORY PROCESS WAS SUPPORTED BY THE FINDING OF STAINABLE IRON WITH A SIMILAR DISTRIBUTION IN THE SKIN OF A PATIENT WITH HEMOCHROMATOSIS. THUS THE SKIN AS WELL AS THE SMALL INTESTINE FUNCTIONS AS AN EXCRETORY ORGAN FOR IRON THROUGH THE LOSS OF IRON-LOADED EPITHELIAL CELLS. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD- 455 900
WALTER REED ARMY INST OF RESEARCH WASHINGTON D C

EFFECT OF HEMOLYSIS ON EXCRETION AND ACCUMULATION OF IRON IN THE RAT, (U)

APR 64 3P KAUFMAN,RICHARD M. ;POLLACK, SIMEON ;ANDERSON,PEARL;CROSBY,WILLIAM H. ;

UNCLASSIFIED REPORT
REPRINT FROM THE AMERICAN JNL. OF PHYSIOLOGY, 207:5, PP. 1041-1043, NOV 64. (COPIES NOTSUPPLIED BY DDC)
SUPPLEMENTARY NOTE:

DESCRIPTORS: (*HEMOLYSIS, METABOLISM), (*METABOLISM, IRON), (*IRON, EXCRETION), TRACER STUDIES, RADIOACTIVE ISOTOPES, HYDRAZINE DERIVATIVES, AROMATIC COMPOUNDS, RATS, ABSORPTION (BIOLOGICAL), IRON COMPOUNDS, CHLORI(U)
IDENTIFIERS: IRON(III) CHLORIDE (U)

TWO GROUPS OF RATS WERE INJECTED INTRAPERITONEALLY WITH TRACER AMOUNTS OF FE59 CL3 AND THE RATE OF LOSS OF RADIOACTIVITY WAS MEASURED OVER A PERIOD OF 105 DAYS. BOTH GROUPS OF RATS WERE MAINTAINED ON A REGULAR RAT PELLET DIET BUT THE EXPERIMENTAL GROUP ALSO RECEIVED ACETYLPHENYLHYDRAZINE WEEKLY IN ORDER TO INDUCE HEMOLYTIC DISEASE. AT THE END OF THE EXPERIMENT ALL RATS WERE KILLED AND THE BODY IRON CONTENT OF EACH DETERMINED. IT WAS OBSERVED THAT THE FRACTION OF BODY IRON LOST DAILY WAS MARKEDLY INCREASED IN RATS UNDERGOING HEMOLYSIS. FURTHER, THESE RATS ACCUMULATED IRON IN EXCESS OF NORMAL, INDICATING THAT IRON ABSORPTION WAS INCREASED TO A GREATER EXTENT THAN WAS IRON EXCRETION. (AUTHOR)
(U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD- 464 714
ARMY MEDICAL RESEARCH LAB FORT KNOX KY

CHANGES IN CS137 RETENTION AND ROUTES OF ELIMINATION AS EFFECTED BY EXTERNAL FACTORS, (U)

JAN 65 9P MCPEAK,DAILEY W. ;LODDE, GORDON M. ;PARR,WORDIE H.;
REPT. NO. USAMRL-617
PROJ: DA-6-X-9926001
TASK: 6-X-992600107

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: REPORT ON BASIC RESEARCH IN LIFE SCIENCES.

DESCRIPTORS: (*CESIUM, RADIOACTIVE ISOTOPES), (*RADIOBIOLOGY, METABOLISM), HALF LIFE, EXCRETION, RATS, PARTIAL BODY IRRADIATION, WHOLE BODY IRRADIATION, FOOD, CONSUMPTION, RADIATION EFFECTS, TEMPERATURE, WATER, URINE, VOLUME (U)

INVESTIGATIONS WERE MADE TO DETERMINE THE ROLES THAT COLD AND X-IRRADIATION PLAYED UPON THE BIOLOGICAL HALF TIME OF CESIUM-137 IN RATS. PARTIAL AND WHOLE-BODY X-IRRADIATION INCREASED THE BIOLOGICAL HALF-TIME OF CESIUM-137 WHILE COLD WITH THE ASSOCIATED INCREASED FOOD CONSUMPTION AND FLUID EXCHANGE DECREASED THE BIOLOGICAL HALF-TIME. ANALYSIS OF FECAL AND URINE OUTPUTS SHOWED THAT INCREASED DIURESIS DOES NOT INVARIABLY FACILITATE CESIUM-137 EXCRETION. THE POSSIBLE ROLES OF FOOD INGESTION AND FECAL OUTPUTS WERE DISCUSSED. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD- 465 242
NAVAL RADIOLOGICAL DEFENSE LAB SAN FRANCISCO CALIF

THE INFLUENCE OF AET AND HYPOXIA ON RECOVERY FROM RADIATION INJURY IN MICE, (U)

MAY 65 12P AINSWORTH ,E. JOHN ;PHILLIPS ,THEODORE L. ;KENDALL,KATHLEEN ;
REPT. NO. USNRDL-TR-851
MONITOR: NAVMED MR005.08-5201

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (*RADIOBIOLOGY, RADIOPROTECTIVE AGENTS), (*RADIOPROTECTIVE AGENTS, RADIOBIOLOGY), (*HYPOXIA, RADIOBIOLOGY), X RAYS, MICE, RADIATION INJURIES, SUBLETHAL DOSAGE, EFFECTIVENESS, RADIATION TOLERANCE, BROMIDES (U)
IDENTIFIERS: AET RADIOPROTECTIVE AGENTS (U)

AET AND HYPOXIA APPEAR TO ACT AS RADIATION DOSE REDUCERS. THE PRESENT STUDIES WERE CONDUCTED, USING THE SPLIT-DOSE TECHNIQUE, TO DETERMINE THE INFLUENCE OF THESE PROTECTANTS ON INITIAL INJURY AND SUBSEQUENT RECOVERY FROM SUBLETHAL 250 KVP X-RAY EXPOSURE. THE RESULTS DEMONSTRATE THAT RECOVERY FROM THEORETICALLY EQUIVALENT DOSES OF IRRADIATION IS SLOWER IN PROTECTED MICE THAN IN NONPROTECTED MICE. THIS WOULD SUGGEST THAT THE INITIAL INJURY IN THE PROTECTED AND NONPROTECTED GROUPS IS NOT EQUIVALENT. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD- 466 883
NAVAL RADIOLOGICAL DEFENSE LAB SAN FRANCISCO CALIF

REJECTION OF ALLOGENEIC SKIN GRAFTS AND PRODUCTION OF ISOHEMAGGLUTININS BY SENSITIZED MICE AFTER SUBLETHAL IRRADIATION. (U)

DESCRIPTIVE NOTE: TECHNICAL REPT.,
MAY 65 10P TYAN,M. L. ;COLE,L. J. ;
REPT. NO. USNRDL-TR-857
TASK: MR005 08 1200

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (*TRANSPLANTATION, RADIATION EFFECTS), X RAYS, SENSITIVITY, ANTIGENS + ANTIBODIES, AGGLUTININS, IMMUNOLOGY, WHOLEBODY IRRADIATION, CELLS(BIOLOGY), SPLEEN, SKIN(ANATOMY), BIOCHEMISTRY, RECOVERY (U)
IDENTIFIERS: HEMAGGLUTININS, RESPONSE(BIOLOGY) (U)

MALE B6D2F1 MICE WERE SENSITIZED BY THE FOLLOWING MEANS: (1) AN ALLOGENEIC (A/HEJ) SKIN GRAFT; (2) THREE S.C. INJECTIONS OF A/HEJ SPLEEN CELLS IN FREUND'S COMPLETE ADJUVANT; OR (3) THREE I.P. INJECTIONS OF A/HEJ SPLEEN CELLS. ONE WEEK AFTER THE LAST INJECTION, MICE FROM EACH GROUP RECEIVED 670 RAD WHOLE-BODY X RADIATION. SERA WERE OBTAINED FREQUENTLY FOR HEMAGGLUTININ ASSAY, AND THE MICE WERE GRAFTED WITH A/HEJ SKIN 30 DAYS OR 61 DAYS AFTER IRRADIATION. IN ALL GROUPS THE HOMOGRAFT RESPONSE WAS SIGNIFICANTLY IMPAIRED 30 AND 61 DAYS AFTER IRRADIATION; HOWEVER, IN GROUPS (1) AND (2) NORMAL SECONDARY HEMAGGLUTININ RESPONSES WERE NOTED. THIS ASYNCHRONOUS RECOVERY OF THE HEMAGGLUTININ AND HOMOGRAFT RESPONSES SUGGESTED THAT DISTINCT CELL POPULATIONS WERE RESPONSIBLE FOR THESE TWO MANIFESTATIONS OF IMMUNOLOGIC REACTIVITY.
(AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD- 491 993
NAVAL MEDICAL RESEARCH INST BETHESDA MD

PHARMACOLOGICAL STUDIES ON IRRADIATED ANIMALS. PART I. SCOPE AND METHODOLOGY. (U)

DESCRIPTIVE NOTE: RESEARCH REPT.,
MAY 52 14P ELLINGER,FRIEDRICH ;
MONITOR: NAVMED NM-006-012.05.04

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO PART 6, AD-456 922.

DESCRIPTORS: (*PHARMACOLOGY, *RADIOBIOLOGY), DRUGS, ANIMALS, RADIOPROTECTIVE AGENTS, MORTALITY RATES, COUNTERMEASURES, X RAYS, LETHAL DOSAGE, DEOXYRIBONUCLEIC ACIDS, RIBONUCLEIC ACIDS, BIOASSAY, RADIATION EFFECTS, WHOLE BODY IRRADIATION (U)

THE SCOPE OF PHARMACOLOGICAL STUDIES ON IRRADIATED ANIMALS HAS BEEN DISCUSSED AND THE NECESSITY FOR CLARIFICATION OF PROCEDURES IN EXPERIMENTAL STUDIES IN THIS FIELD HAS BEEN POINTED OUT. AS TWO MAIN LINES OF EXPERIMENTAL APPROACH IN STUDIES UTILIZING THE LETHAL EFFECT OF X-RAYS IN TOTAL BODY IRRADIATION, THE FOLLOWING HAVE BEEN SUGGESTED: (1) USE OF VARIOUS DRUG CONCENTRATIONS ON ONE X-RAY DOSE, PREFERABLY A DOSE CLOSE TO THE LD(50)/14 DAYS FOR THE PARTICULAR ANIMAL SPECIES; AND (2) THE USE OF ONE DRUG CONCENTRATION ON AT LEAST TWO RADIATION DOSES, ONE OF THEM THE MID-LETHAL, THE OTHER OF EITHER THE LOW-LETHAL, OR HIGH-LETHAL RANGE. THE PROCEDURES ARE EXEMPLIFIED BY PRESENTATION OF PRELIMINARY DATA CONCERNING THE EFFECTS OF DESOXYRIBONUCLEIC AND RIBONUCLEIC ACID AS WELL AS THOSE OF A SPLEEN EXTRACT ON THE RADIATION INDUCED MORTALITY IN MICE. THE NECESSITY OF UTILIZING THE ENTIRE LETHAL DOSE CURVE FOR THE EVALUATION OF DRUG EFFECTS HAS BEEN DEMONSTRATED. SUPPLEMENTARY METHODS FOR FURTHER ELUCIDATION OF THE MECHANISMS BY WHICH PHARMACOLOGICAL AGENTS MODIFY THE LETHAL EFFECT OF IONIZING RADIATION CONSISTING IN DETAILED HISTOLOGICAL AND BIO-ASSAY STUDIES OF ISOLATED ORGANS HAVE BEEN POINTED OUT. (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD- 601 115
NAVAL RADIOLOGICAL DEFENSE LAB SAN FRANCISCO CALIF

CHROMOSOME ABNORMALITIES IN LIVER AND MARROW OF MICE IRRADIATED WITH FAST NEUTRONS, GAMMA-, AND X RAYS. EFFECT OF DOSE RATE. (U)

APR 64 30P NOWELL,P. C. ;CRAIG,D. ; MATTHEWS,F. ;COLE,L. J. ;
REPT. NO. USNRDL-TR-740
PROJ: MR005.08
TASK: MR005.08.52

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (*CHROMOSOMES, RADIATION EFFECTS), (*RADIATION EFFECTS, CHROMOSOMES), (*RADIATION DOSAGE, GENETICS), (*GENETICS, RADIATION DOSAGE), ANOMALIES, X RAYS, GAMMA RAYS, FAST NEUTRONS, LIVER, BONE MARROW, SUBLETHAL DOSAGE, MICE, DOSE RATE (U)

LOW DOSE RATE IRRADIATION WITH EITHER GAMMA-RAYS OR FAST NEUTRONS RESULTED IN FEWER CHROMOSOME ABNORMALITIES IN LIVER AND BONE MARROW THAN DID COMPARABLE HIGH DOSE RATE IRRADIATION WITH X RAYS OR NEUTRONS. NEUTRONS GENERALLY PRODUCED MORE ABERRATIONS THAN THE LOW RADIATIONS, BUT A DOSE RATE EFFECT WAS APPARENT WITH BOTH TYPES OF RADIATION. UNSTABLE CHROMOSOME ABERRATIONS, AS WELL AS TOTAL ABERRATIONS, WERE REDUCED IN THE LOW DOSE RATE GROUPS, EVIDENCE FOR THE ACTION OF AN INTRACELLULAR REPAIR PROCESS. FOR BOTH TECHNICAL AND THEORETICAL REASONS, THE LIVER AND BONE MARROW ARE NOT IDEAL SYSTEMS FOR QUANTITATIVE STUDIES OF THE EFFECTS OF IONIZING RADIATION ON MAMMALIAN CHROMOSOMES. IN A FEW MICE, THE CLONAL CHROMOSOME CHANGES PROVIDED A MEANS OF IDENTIFYING MYELOID CELLS IN THE LIVER PREPARATIONS. DIVIDING DIPLOID CELLS IN BOTH THE MARROW AND LIVER SHOWED THE SAME CHROMOSOME CHANGE AND WERE APPARENTLY DERIVED FROM A COMMON RADIATION-DAMAGED ANCESTOR. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD- 601 792
USAF RADIATION LAB UNIV OF CHICAGO ILL

INFLUENCE OF X-IRRADIATION ON DEVELOPMENT OF MICROSOME OXIDASE AND REDUCTASE ACTIVITY IN THE LIVERS OF YOUNG MALE RATS. (U)

JUN 64 10P HIETBRINK,BERNARD E. ;
DUBOIS,KENNETH P. ;
CONTRACT: AF41 (609)-1693
PROJ: 7757
TASK: 775702
MONITOR: SAM TDR64 29

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (*RADIATION EFFECTS, OXIDOREDUCTASES), (*OXIDOREDUCTASES, RADIATION EFFECTS), CYTOCHEMISTRY, LIVER, MICROSOMES, RATS, X RAYS, ENZYMES, WHOLE BODY IRRADIATION, BIOSYNTHESIS, PHOSPHATES, SULFUR COMPOUNDS (U)

THE INFLUENCE OF X-RAY ON THE DEVELOPMENT OF AN OXIDASE IN LIVER MICROSOMES THAT CATALYZES THE OXIDATIVE DESULFURATION OF PHOSPHOROTHIOATES WAS STUDIED. EXPOSURE OF 23-DAYOLD MALE RATS TO 200 R OR 400 R ALMOST COMPLETELY INHIBITED THE DEVELOPMENT OF PHOSPHOROTHIOATE OXIDASE ACTIVITY DURING THE 3-WEEK OBSERVATION PERIOD FOLLOWING RADIATION. SUBSTAN TIAL INHIBITION OF THE DEVELOPMENT OF OXIDASE ACTIVITY WAS ALSO OBSERVED AFTER EXPOSURE OF THE ANIMALS TO 100 R. MARKED INHIBITION OF THE DEVELOPMENT OF THE ENZYME IN THE REGENERATING LIVERS OF PARTIALLY HEPATECTOMIZED RATS WAS OBSERVED FOLLOWING EXPOSURE TO X-RAY OF 200 R TO 600 R. THE ABSENCE OF AN INHIBITORY EFFECT BY X-IRRADIATION ON PHOSPHOROTHIOATE OXIDIZING ACTIVITY OF THE LIVERS OF ADULT MALE RATS SUGGESTS THAT THE EFFECT OF X-RAY IS ON SOME PROCESS INVOLVED IN THE SYNTHESIS OF PHOSPHOROTHIOATE OXIDASE. X-IRRADIATION HAD NO EFFECT ON THE DEVELOPMENT OF REDUCTASE ACTIVITY IN THE LIVERS OF YOUNG RATS INDICATING SELECTIVITY IN THE ACTION OF X-RAY ON THE DEVELOPMENT OF MICROSOME ENZYMES. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD- 610 300
FOREIGN TECHNOLOGY DIV WRIGHT-PATTERSON AFB OHIO

MEDICAL RADIOLOGY, 1964, VOL. 9, NO. 3: SELECTED ARTICLES. (U)

JAN 65 27P
REPT. NO. FTD-TT-64-746
MONITOR: TT , 65 61012

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: UNEDITED ROUGH DRAFT TRANS. OF MEDITSINSKAYA RADIOLOGIYA (USSR) 1964, V. 9, NO. 3, P. 52-66.

DESCRIPTORS: (*RADIOBIOLOGY, MEDICAL RESEARCH), RADIATION EFFECTS, EYE, VISION, RADIATION DOSAGE, RADIATION SICKNESS, OPHTHALMOLOGY, GAMMA RAYS, NEUTRONS, MICE, SUBLETHAT DOSAGE, HISTOLOGICAL TECHNIQUES, LEUKOCYTES, BONE MARROW, METABOLISM, MORPHOLOGY (BIOLOGY), USSR (U)

CONTENTS: (1) STATE OF THE ORGAN OF VISION UNDER THE EFFECT OF GAMMA NEUTRON RADIATION IN DOSAGES CLOSE TO MAXIMUM PERMISSIBLE; (2) DOSAGE CHARACTERISTICS AND PECULIARITIES OF BEING AFFECTED DURING EXPOSURE OF MICE TO GAMMA-IRRADIATION OF A DOSAGE POWER; (3) HISTOCHEMICAL CHANGES IN LEUKOCYTES AT EXPERIMENTAL RADIATION ILLNESS. (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD- 611 045
FOREIGN TECHNOLOGY DIV WRIGHT-PATTERSON AFB OHIO

PRIMARY AND INITIAL PROCESSES IN THE BIOLOGICAL EFFECTS OF RADIATION (SELECTED ARTICLES), (U)

JAN 65 366P
REPT. NO. FTD-TT-64-515
MONITOR: TT , 65-61713

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: UNEDITED ROUGH DRAFT TRANS. OF MONO. PERVICHNYE I NACHAL'NYE PROTSESSY BIOLOGICHESKOGO DEISTVIYA RADIATSII, MOSCOW, 1963, P. 1-44, 53-156, 192-201, 214-233, 243-270, 277-278.

DESCRIPTORS: (*RADIOBIOLOGY, SYMPOSIA), (*RADIATION EFFECTS, CELLS (BIOLOGY)), BIOCHEMISTRY, BACTERIA, X RAYS, BACTERIOPHAGES, PROTEINS, BIOSYNTHESIS, NUCLEOPROTEINS, TRACER STUDIES, RADIOPROTECTIVE AGENTS, METABOLISM, PHOSPHORUS, AMINO ACIDS, LIPIDS, DEOXYRIBONUCLEIC ACIDS, RADIATION INJURIES, ESCHERICHIA COLI, TISSUE CULTURE CELLS, REPRODUCTION (PHYSIOLOGY), CHROMOSOMES, ENZYMES, YEASTS, NERVES, MUSCLES, USSR (U)

THE PRIMARY AND INITIAL CELLULAR PROCESSES FORMING THE BASIS OF THE BIOLOGICAL EFFECTS OF RADIATION ARE DISCUSSED IN EIGHTEEN REPORTS WHICH WERE PRESENTED AT AN INTERNATIONAL SYMPOSIUM. THE SYMPOSIUM WAS ORGANIZED BY THE ACADEMY OF SCIENCES OF THE USSR, WITH THE SUPPORT OF THE DEPARTMENT OF NATURAL SCIENCES OF UNESCO AND THE INTERNATIONAL ATOMIC ENERGY AGENCY. THE REPORTS, INCLUDING GENERAL DISCUSSIONS, DEAL WITH THE PRIMARY EFFECTS OF IONIZING RADIATION ON MOLECULAR, SUBCELLULAR, AND CELLULAR LEVELS. THE SAME MATERIAL IS REPORTEDLY BEING PUBLISHED IN ENGLISH BY THE ACADEMIC PRESS. (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD- 611 687
ARMY TROPICAL RESEARCH MEDICAL LAB NEW YORK 09851

EFFECTS OF TRIIODOTHYRONINE IN ALTERING THE RESPONSE OF KIDNEYS TO COBALT-60 RADIATION, (U)

63 7P CALDWELL, WILLIAM L. ;THOMASSEN, ROBERT W. ;BOSCH, ANTONIO ;
PROJ: 6 X 97 85 001

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: PUB. IN RADIOLOGY (U. S.) V81 N4 P657-663 OCT 1963 (COPIES NOT AVAILABLE TO DDC OR CLEARINGHOUSE CUSTOMERS). PRESENTED AT THE ANNUAL MEETING OF THE RADIOLOGICAL SOCIETY OF NORTH AMERICA (NO. 48) CHICAGO, ILL. 25-30 NOV 1962.

DESCRIPTORS: (*KIDNEYS, RADIATION INJURIES), (*RADIOPROTECTIVE AGENTS, IODINE COMPOUNDS), TISSUES (BIOLOGY), RADIATION DOSAGE, THYROID GLAND, TISSUE EXTRACTS, RADIATION EFFECTS, DISEASES, RADIOACTIVE ISOTOPES, NEOPLASMS, BLOOD VESSELS, SKIN(ANATOMY), CANCER, COBALT, HISTOLOGICAL TECHNIQUES, RABBITS (U)

THE FEAR OF INDUCING RADIATION NEPHRITIS RESTRICTS THE AMOUNT OF RADIATION DELIVERED TO RETROPERITONEAL TUMORS. IF THIS RADIATION INJURY COULD BE MODIFIED, THE THERAPIST WOULD THEN BE LESS FEARFUL OF POSSIBLY INDUCING THIS OFTEN FATAL COMPLICATION. SINCE TRIIODOTHYRONINE HAS PROVED BENEFICIAL IN REDUCING RADIATION INJURY OF THE SKIN AND SUBCUTANEOUS TISSUES, THE EFFECTS OF THIS COMPOUND WERE EVALUATED FOLLOWING PRODUCTION OF RADIATION INJURY IN RABBIT KIDNEYS. SURPRISINGLY, TRIIODOTHYRONINE DID NOT FAVORABLY ALTER THE REACTION, BUT MADE IT WORSE. THE REASON FOR THIS VARIANCE WITH THE EFFECTS PREVIOUSLY REPORTED IN SKIN IS NOT CERTAIN. TISSUE SPECIFICITY OR DIFFERENCE IN VASCULARITY MAY BE IMPORTANT FACTORS. THE IRRADIATED SKIN OF THE TRIIODOTHYRONINE-TREATED ANIMALS SHOWED SLIGHTLY LESS HISTOLOGIC ALTERATION THAN THE IRRADIATED SKIN OF THE CONTROL ANIMALS. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD- 614 962
FOREIGN TECHNOLOGY DIV WRIGHT-PATTERSON AFB OHIO

EFFECT OF ADENOSINETRIPHOSPHORIC ACID (ATP) ON THE METABOLISM OF PHOSPHOPROTEINES IN THE LIVER AT RADIATION INFLICTION. (U)

APR 65 12P VINOGRADOVA,R. P. ;
REPT. NO. FTD-TT-64-1163
MONITOR: TT , 65-62151

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: UNEDITED ROUGH DRAFT TRANS. OF UKRAYINS'KYI BIOKHIMICHNYI ZHURNAL (USSR) V35 N2 P274-9 1963.

DESCRIPTORS: (*RADIOBIOLOGY, PHOSPHOPROTEINS), (*PHOSPHOPROTEINS, RADIATION EFFECTS), (*ADENOSINE PHOSPHATES, RADIOBIOLOGY), PHOSPHORUS, METABOLISM, X RAYS, LETHAL DOSAGE, TISSUES (BIOLOGY), LIVER, GUINEA PIGS, RADIATION SICKNESS, USSR (U)

DURING THE INCUBATION OF NORMAL LIVER TISSUE, WHEN ATP IS ADDED IN AMOUNT OF 0.35 M MOLES PER 1 G OF TISSUE ARE OBSERVED INCREASES IN THE AMOUNT AND INTENSITY OF RESTORATION OF PHOSPHOPROTEINE PHOSPHORUS. DURING THE INCUBATION OF SAMPLES FROM LIVER TISSUES OF ANIMALS EXPOSED TO LETHAL DOSAGE OF X-RAY RADIATION, THE ADDITION OF ATP DOES NOT AFFECT THE CONTENT NOR INTENSITY OF RESTORATION OF PHOSPHOPROTEINE PHOSPHORUS. THE CONTENT OF ATP IN THE LIVER DECREASES CONSIDERABLY AFTER THE ANIMALS ARE EXPOSED TO X-RAY RADIATION OF LETHAL CAPACITY. MAXIMUM REDUCTION IN AMOUNT OF ATP IS OBSERVED ON THE TENTH DAY OF RADIATION ILLNESS. UNDER THE EFFECT OF GENERAL X-RAY RADIATION THE CONTENT OF PHOSPHORUS IN PHOSPHOPROTEINES DROPS ON AN AVERAGE TO 30-35%, AND THE RESTORATION INTENSITY IN COMPARISON WITH STANDARD RISE ON AN AVERAGE BY 20% IN ALL INVESTIGATED PERIODS AFTER THE EXPOSURE. THE CONTENT OF INORGANIC PHOSPHORUS IN LIVER OF EXPOSED ANIMALS RISES ON AN AVERAGE BY 20-35%, AND THE SPECIFIC ACTIVITY REMAINS WITHOUT CHANGES. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD- 618 175
WALTER REED ARMY INST OF RESEARCH WASHINGTON D C

LONG-LIVED ELECTRON SPIN RESONANCES IN RATS IRRADIATED AT ROOM TEMPERATURE, (U)

AUG 64 8P SWARTZ,HAROLD M. ;

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: PUB. IN RADIATION RESEARCH V24 N4 P579-86 APR 1965 (COPIES NOT AVAILABLE TO DDC OR CLEARINGHOUSE CUSTOMERS).

DESCRIPTORS: (*RADIOBIOLOGY, MAGNETIC RESONANCE), (*MAGNETIC RESONANCE, DOSIMETERS), (*BONES, RADIATION EFFECTS), TISSUES(BIOLOGY), GAMMA RAYS, RADIATION DOSAGE, DOSE RATE, SPECTROSCOPY, NUCLEAR MAGNETIC RESONANCE, LEGS, RATS (U)

THE PROLONGED EXISTENCE OF RADIATION-INDUCED UNPAIRED ELECTRON SPECIES IN THE FEMURS OF LIVING RATS HAS BEEN DEMONSTRATED BY ESR TECHNIQUES. THESE FINDINGS APPEAR TO HAVE SIGNFICANCE IN BOTH RADIOBIOLOGICAL THEORY AND DOSIMETRY OF RADIATION ACCIDENTS. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD- 618 263
SASKATCHEWAN UNIV SASKATOON DEPT OF BACTERIOLOGY

BOUND WATER, INOSITOL, AND THE EFFECT OF X-RAYS ON ESCHERICHIA COLI, (U)

MAY 64 8P WEBB,S. J. ;DUMASIA,M. D. ;
PROJ: D52 18 50 04

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: PUB. IN CANADIAN JOURNAL OF MICROBIOLOGY V10 P877-85 1964 (COPIES AVAILABLE ONLY TO DDC USERS).

DESCRIPTORS: (*RADIATION EFFECTS, ESCHERICHIA COLI), (*RADIOBIOLOGY, DEHYDRATION), (*RADIOPROTECTIVE AGENTS, SUGAR ALCOHOLS), X RAYS, HUMIDITY, STABILITY, BIOCHEMISTRY, CANADA (U)

AEROSOLS OF ESCHERICHIA COLI B WERE SUBJECTED TO 250 KV X-RAYS. IT WAS FOUND THAT MAXIMAL X-RAY DAMAGE OCCURRED AT 70 TO 80% RELATIVE HUMIDITY (R.H.). AT THESE R.H. VALUES ONLY THE WATER BOUND DIRECTLY TO CELL MACROMOLECULES REMAINS, AND IF THE WATER LAYERS WERE INCREASED BY USING HIGHER HUMIDITIES, X-RAY DAMAGE DECREASED. ALSO, AT R.H. LEVELS BELOW 70% A SHARP DECREASE IN THE SENSITIVITY OF THE CELLS TO THE RADIATION OCCURRED. SEVERAL CHEMICALS KNOWN TO PROTECT CELLS AGAINST DESICCATION, ULTRAVIOLET, AND X-RAY DAMAGE WERE EXAMINED AND OF THESE I-INOSITOL PROVED THE MOST SUCCESSFUL. THE DIFFERENCE IN THE PROTECTIVE ABILITY OF THESE VARIOUS COMPOUNDS INDICATED THAT SOME PROTECT CELLS AGAINST DESICCATION DAMAGE BY RETAINING WATER, OTHERS BY REPLACING BOUND-WATER MOLECULES IN MACROMOLECULAR STRUCTURE BUT THOSE RETAINING WATER WILL NOT PROTECT AGAINST X-RAYS. THE RESULTS SUGGEST THAT THE PHYSICAL REMOVAL OR IONIZATION OF A STRATEGIC BOUND-WATER MOLECULE BY X-RAYS CAUSES MOST OF THE CELL DEATHS RATHER THAN IONIZATIONS OCCURRING IN THE FREE WATER AS THE PRESENCE OF THE LATTER APPEARS TO OFFER CELLS A MEASURE OF PROTECTION. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD- 619 597
SCRIPPS INSTITUTION OF OCEANOGRAPHY LA JOLLA CALIF

SILVER-110M AND COBALT-60 IN OCEANIC AND COASTAL ORGANISMS, (U)

AUG 65 8P FOLSOM,T. R. ;YOUNG,D. R. ;
CONTRACT: NONR2?1623
PROJ: NR083 005

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: PUB. IN NATURE V206 N4986 P803-6 MAY 22 1965 (COPIES AVAILABLE ONLY TO DDC USERS).

DESCRIPTORS: (*AQUATIC ANIMALS, RADIOBIOLOGY), (*RADIOBIOLOGY, AQUATIC ANIMALS), (*COBALT, RADIOBIOLOGY), (*SILVER, RADIOBIOLOGY), RADIOACTIVE ISOTOPES, MARINE BIOLOGY, COINCIDENCE COUNTING, GAMMA RAY SPECTROSCOPY, ECOLOGY, PACIFIC OCEAN, OCEANOGRAPHY, TRACER STUDIES (U)

REPRINT: SILVER-110M AND COBALT-60 IN OCEANIC AND COASTAL ORGANISMS.

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD- 621 648
LIBRARY OF CONGRESS WASHINGTON D C AEROSPACE TECHNOLOGY DIV

BIOLOGICAL EFFECTS OF MICROWAVES. (U)

DESCRIPTIVE NOTE: COMPILATION OF ABSTRACTS.
SEP 65 103P
REPT. NO. ATD-P65-68
MONITOR: TT , 65-64023

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: REPT. ON SURVEYS OF SOVIET SCIENTIFIC AND TECHNICAL LITERATURE.

DESCRIPTORS: (*MICROWAVES, RADIOBIOLOGY), (*RADIOBIOLOGY, MICROWAVES), (*ELECTROMAGNETIC RADIATION, RADIOBIOLGOY), CENTRAL NERVOUS SYSTEM, THYROID GLAND, CONDITIONED RESPONSE, MOTOR REACTIONS, NERVE CELLS, CHOLINESTERASE, REPRODUCTION(PHYSIOLOGY), BLOOD CIRCULATION, GASTROINTESTINAL SYSTEM, BLOOD CELLS, NUCLEIC ACIDS, HEART, BRAIN, MAMMALS, THRESHOLDS(PHYSIOLOGY), MEDICAL EXAMINATION, INDUSTRIAL MEDICINE, THERAPY, ULTRAHIGH FREQUENCY, SUPERHIGH FREQUENCY, HIGH FREQUENCY, LOW FREQUENCY, DOSIMETERS, REVIEWS, ABSTRACTING, USSR (U)
IDENTIFIERS: BIOELECTRICITY, MICROWAVE EFFECTS(BIOLOGICAL) (U)

CONTENTS: HYGIENIC AND CLINICAL ASPECTS OF MICROWAVES (1937-1964); EXPERIMENTAL EFFECTS OF MICROWAVES (19551964); EFFECTS OF A CONSTANT MAGNETIC FIELD AND LOW-FREQUENCY ELECTROMAGNETIC FIELDS ON HIGHER NERVOUS ACTIVITY (19521964); DISCUSSIONS AND REVIEWS ON BIOLOGICAL EFFECTS, EXPERIMENTAL METHODS AND MECHANISMS OF THE ACTION OF MICROWAVES (1957-1964). (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD- 623 079
NAVAL RADIOLOGICAL DEFENSE LAB SAN FRANCISCO CALIF

URETHAN-INDUCED LUNG TUMORS IN MICE: X-RADIATION DOSE DEPENDENT INHIBITION, (U)

SEP 65 15P FOLEY,WILLIAM A. ;COLE, LEONARD J. ;
REPT. NO. USNRDL-TR-911
PROJ: MR005 08 1200
TASK: MR005 08 1200 2
MONITOR: NAVMED , MR005.08-1200

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (*RADIATION EFFECTS, LUNG), (*NEOPLASMS, LUNG), (*RADIATION DOSAGE, NEOPLASMS), WHOLE BODY IRRADIATION, X-RAYS, CANCER, CELLS(BIOLOGY), INHIBITION, MICE (U)
IDENTIFIERS: URETHANES (U)

ADULT MALE LAF SUB 1 MICE RECEIVED SINGLE WHOLEBODY X RAY EXPOSURES OF 100, 300, 500, OR 700 RADS, FOLLOWED ONE DAY LATER BY SINGLE INJECTIONS OF URETHAN (1 MG/G). THE MICE WERE SACRIFICED 25 WEEKS LATER, AND THE LUNGS EXAMINED GROSSLY AND MICROSCOPICALLY FOR TUMORS. ALL OF THE MICE IN GROUP RECEIVING 100 RAD PLUS URETHAN EXHIBITED LUNG TUMORS (ALVEOLOGENIC CARCINOMAS), WITH A MEAN OF 3.1 TUMORS PER MOUSE. THIS LUNG TUMOR INCIDENCE WAS IDENTICAL WITH THAT OCCURRING IN THE MISE WHICH RECEIVED URETHAN ONLY. HOWEVER, A DEFINITE REDUCTION IN LUNG TUMOR INCIDENCE AND NUMBER OF TUMORS PER MOUSE WAS OBSERVED AT THE 500 RAD DOSE (66% INCIDENCE AND 1.8 TUMORS PER MOUSE, RESPECTIVELY) AND AT 700 RAD (59% INCIDENCE AND 1.3 TUMORS PER MOUSE). THUS, THE X RADIATION SUPPRESSION OF URETHAN-INDUCED LUNG TUMORS IN MICE IS DOSE-DEPENDENT IN THE RANGE OF 500 RAD TO 900 RAD. THE DATA SUGGEST THAT THIS TUMOR SUPPRESSION IS CORRELATED WITH A DIRECT RADIATION INHIBITION OF ALVEOLAR CELL PROLIFERATION. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD- 623 641
NAVAL RADIOLOGICAL DEFENSE LAB SAN FRANCISCO CALIF

AN ANALYSIS OF LOCAL AND SYSTEMIC EFFECTS OF IONIZING RADIATION ON BONE GROWTH, (U)

SEP 65 29P PHILLIPS,RICHARD D. ;
KIMELDORF,DONALD J. ;
REPT. NO. USNRDL-TR-898
PROJ: MR005 08 5201
TASK: 2
MONITOR: NAVMED , MR005.08-5201-2

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (*RADIATION EFFECTS, BONES), (*BONES, RADIATION EFFECTS), WHOLE BODY IRRADIATION, PARTIAL BODY IRRADIATION, X RAYS, GROWTH(PHYSIOLOGY), TISSUES(BIOLOGY), HEAD(ANATOMY), ABDOMEN, THORAX, RAT(U)

RADIATION-INDUCED RETARDATION OF FEMUR AND TIBIA GROWTH WAS DETERMINED IN YOUNG MALE RATS AT 60 DAYS AFTER TOTAL- OR PARTIAL-BODY EXPOSURE TO 450 R OF X-RAYS. APPROXIMATELY 52% OF THE GROWTH REDUCTION COULD BE ATTRIBUTED TO LOCAL IRRADIATION EFFECTS ON THE LIMB, AND THE REMAINING 48% OF THE RETARDATION WAS ASCRIBED TO SYSTEMIC IRRADIATION EFFECTS. THE SYSTEMIC RESPONSE DID NOT APPEAR TO BE DEPENDENT UPON THE MASS OF TISSUE IRRADIATED, NOR UPON THE INDUCTION OF POSTIRRADIATION PARTIAL INANITION. HOWEVER, THE REGION OF THE ANIMAL EXPOSED DID APPEAR TO BE IMPORTANT. BY EXPOSING VARIOUS REGIONS OF THE BODY, THE SYSTEMIC RESPONSE WAS SUBDIVIDED INTO ABSCOPAL COMPONENTS. HEAD, ABDOMEN AND THORAX IRRADIATION YIELDED 42%, 40% AND 18%, RESPECTIVELY, OF THE TOTAL SYSTEMIC EFFECT. THE LOCAL AND ABSCOPAL RESPONSES APPEAR TO BE ADDITIVE RATHER THAN SYNERGISTIC, WITH THE TOTAL RADIATION EFFECT THE RESULTANT SUM OF THE ABSCOPAL AND LOCAL COMPONENTS. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD- 624 934 6/18
AEROSPACE TECHNOLOGY DIV LIBRARY OF CONGRESS WASHINGTON D C

EFFECT OF IONIZING RADIATION ON ANIMALS AND PLANTS, (U)

DEC 65 22P SMITH, JANICE L. ;
REPT. NO. ATD-65-110
MONITOR: TT , 65-64828

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: TRANS. FROM AKADEMIYA NAUK SSSR. INSTITUT GENETIKI. TRUDY, V32 1965.

DESCRIPTORS: (*RADIOBIOLOGY, ABSTRACTS), (*ANIMALS, RADIATION EFFECTS), (*PLANTS(BOTANY), RADIATION EFFECTS), GAMMA RAYS, X RAYS, NEUTRONS, METABOLISM, SEEDS, ETHYLENIMINES, EMBRYOS, CHLOROPHYLLS, MUTATIONS, PROTEINS, MAMMALS, BLOOD, TESTES, AGING(PHYSIOLOGY), REPRODUCTIVE SYSTEM, TISSUES(BIOLOGY), PATHOLOGY, ESTROGENS, ADRENAL CORTEX, AMINES, CHROMOSOMES, LIVER, MICE (U)

CONTENTS: EFFECT OF CELLULAR METABOLIC REGULATORS ON GAMMA-IRRADIATED BARLEY SEED; EFFECT OF CULTIVATION CONDITIONS AND MATURITY ON GAMMA-IRRADIATED BARLEY; EFFECT OF ETHYLENIMINE ON NEUTRON-IRRADIATED BARLEY; EMBRYONIC SELECTION AND CHLOROPHYLL MUTATION IN IRRADIATED BARLEY; PROTEIN METABOLISM DISTURBANCES IN ANIMALS EXPOSED TO X-RAYS; RADIOSENSITIVITY OF VARIOUS MAMMALIAN STRAINS AND SPECIES; RADIOSENSITIVITY OF PERIPHERAL BLOOD IN VARIOUS ANIMAL GENOTYPES; DAMAGE TO TESTES OF MICE IRRADIATED IN EMBRYO; RBE BASED ON TESTICULAR DAMAGE AND DOMINANT LETHAL GAMETE MUTATIONS IN MICE; AGE AND RADIOSENSITIVITY IN MICE; TESTICULAR RADIOSENSITIVITY IN NEWBORN MICE; REACTIVITY OF VARIOUS TYPES OF TISSUE TO IRRADIATION AND DIETHYLSTILBESTROL IN MICE; EFFECT OF A CHEMICAL PROTECTOR (CO) ON SURVIVAL AND INTERNAL PATHOLOGY IN MICE EXPOSED TO X-RAYS; EFFECT OF ESTROGENS AND RADIATION ON ADRENAL CATECHOL AMINE METABOLISM; CHEMICAL PROTECTION OF RABBIT SPERMATAZOA FROM GENETIC RADIATION DAMAGE; EFFECT OF IONIZING RADIATION ON ADRENAL CORTEX FUNCTION IN MICE. (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD- 625 949 6/18
YOKOHAMA MUNICIPAL UNIV (JAPAN) FACULTY OF MEDICINE

THE EFFECT OF COBALT-60 GAMMA RADIATION ON THE CENTRAL NERVOUS SYSTEM. (U)

DESCRIPTIVE NOTE: SEMI-ANNUAL REPT. 4 AUG 64-3 FEB 65,

FEB 65 10P TAUYA,AKIRA ;
CONTRACT: DA-CRD-AG-S92-544-64-G24
MONITOR: ARDG(FE) , J-223

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (*CENTRAL NERVOUS SYSTEM, RADIATION), (*RADIATION EFFECTS, CENTRAL NERVOUS SYSTEM), BRAIN, GAMMA RAYS, X RAYS, RADIATION DOSAGE, WHOLE BODY IRRADIATION, PATHOLOGY, ELECTROENCEPHALOGRAPHY, JAPAN (U)

DIFFERENT SENSITIVITY TO THE IONIZING RADIATION ON THE VARIOUS PARTS OF THE BRAIN WERE STUDIED, ELECTROENCEPHALOGRAPHICALLY. BETWEEN THE FRONTAL CORTEX AND THE HIPPOCAMPUS, DIFFERENT TRANSITION OF THE SLEEPY STAGE WAS DEMONSTRATED, SUGGESTING DISSOCIATED RESPONSE IN THESE REGIONS, BY IRRADIATION OVER 1000R. SUBCORTICAL STRUCTURE IS REMAINED TO BE STUDIED FOR FUTURE INVESTIGATION. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD- 627 069 6/18
FOREIGN TECHNOLOGY DIV WRIGHT-PATTERSON AFB OHIO

EFFECT OF IONIZING RADIATION ON THE HEART; REACTION OF THE HEART IN NORMAL CONDITIONS TO RADIATION, (U)

DEC 65 22P ANTONYAN,S. G. ;
REPT. NO. FTD-TT-65-1082
MONITOR: TT , 65-60359

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: UNEDITED ROUGH DRAFT TRANS. OF AKADEMIYA NAUK ARMYANSKOI SSR, EREVAN. IZVESTIYA. BIOLOGICHESKIE NAUKI V17 N7 P45-54 1964.

DESCRIPTORS: (*HEART, RADIATION EFFECTS), (*RADIATION, HEART), REVIEWS, CARDIOVASCULAR SYSTEM, RADIATION DOSAGE, X RAYS, GAMMA RAYS, RADIATION, RADIATION SICKNESS, AUTONOMIC NERVOUS SYSTEM, HEMORRHAGE, NECROSIS, PATHOLOGY, ELECTROCARDIOGRAPHY, HISTOLOGY, METABOLISM, ELECTROPHYSIOLOGY, MORPHOLOGY(BIOLOGY), EPINEPHRINE, ACETYCHOLINE (U)

TRANSLATION OF RUSSIAN RESEARCH: EFFECT OF IONIZING RADIATION ON THE HEART; REACTION OF THE HEART IN NORMAL CONDITIONS TO RADIATION.

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD- 627 287 6/5
WALTER REED ARMY INST OF RESEARCH WASHINGTON D C

THE ABSORPTION OF NONFERROUS METALS IN IRON DEFICIENCY, (U)

DEC 64 4P POLLACK,SIMEON ;GEORGE,JAMES N. ;PEBA,RICHARD C. ;KAUFMAN,RICHARD M. ; CROSBY,WILLIAM H. ;

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (*IRON, NUTRITIONAL DEFICIENCY DISEASES), (*ABSORPTION(BIOLOGICAL), METALS), DIET, TRANSPORT PROPERTIES, METABOLISM, HEMORRHAGE, COBALT, MANGANESE, CESIUM, MAGNESIUM, MERCURY, CALCIUM, COPPER, ZINC, RA(U)

THE INTESTINAL ABSORPTION OF COBALT AND MANGANESE WAS INCREASED IN RATS RENDERED IRON DEFICIENT BY BLEEDING AND DIET. THE INTESTINAL ABSORPTION OF CESIUM, MAGNESIUM, MERCURY, CALCIUM, AND COPPER WAS NOT INCREASED IN RATS CONSUMING AN IRON-DEFICIENT DIET BUT WAS UNCHANGED IN BLED RATS. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD- 627 292 6/18 6/3
WALTER REED ARMY MEDICAL CENTER WASHINGTON D C

RADIATION-INDUCED PREMATURE AGING IN LEAVES AND AUTUMNAL EVENTS IN NATURE, (U)

MAR 65 21P KREBS, ADOLPH T. ;

UNCLASSIFIED REPORT
AVAILABILITY: PUBLISHED IN BEITRAGE ZUR BIOLOGIE DER PFLANZEN V41 P157-74 1965. COPIES TO DDC USERS ONLY.
SUPPLEMENTARY NOTE:

DESCRIPTORS: (*RADIOBIOLOGY, AGING(PHYSIOLOGY)), (*AGING(PHYSIOLOGY), RADIATION EFFECTS), (*PLANTS(BOTANY), RADIATION EFFECTS), COLORS, PERIODIC VARIATIONS, ORGANIC PIGMENTS, METABOLISM, CHLOROPHYLLS, RADIATION DOSAGE, MAMMALS, GROWTH SUBSTANCES (U)

IN CONSIDERING THE REPORTED FINDINGS IN PLANTS, PLANT CELLS AND LEAVES AND RELATING THEM TO PRESENT BOTANICAL THEORIES ON AGING OF PLANT SYSTEMS IN AUTUMN AND TO EXISTING HYPOTHESES AND THEORIES ON RADIATION 'AGING' AND NATURAL AGING IN MAMMALS, IT BECOMES EVIDENT THAT THERE ARE BRIDGES CONNECTING 'EARLY' AND NATURAL FALL EVENTS. AS IN MAMMALIAN RADIOBIOLOGY, WHERE RADIATION 'AGING' AND SPONTANEOUS AGING SHARE CERTAIN BASIC MECHANISMS, SO ALSO HERE IN THE PLANT KINGDOM RADIATION-INDUCED AGING AND NATURAL AGING HAVE A COMMON DENOMINATOR. FINAL PROOF OF THIS RELATIONSHIP AND CONFIRMATION OF THE ROLE OF AUXIN IN THE AGING PROCESS AND IN RADIOBIOLOGICAL PHENOMENA WOULD BE A VALUABLE CONTRIBUTION TO THE DISCUSSIONS ON AGING, AND WOULD DEMONSTRATE AT THE SAME TIME THE STIMULUS AND IMPETUS OF THE AUXIN STUDIES IN THE LATE TWENTIES AND EARLY THIRTIES ON FURTHER RESEARCH IN BOTANY, RADIOBIOLOGY AND GERONTOLOGY. (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD- 627 569 6/18
NAVAL RADIOLOGICAL DEFENSE LAB SAN FRANCISCO CALIF

SYSTEMIC FACTOR IN RECOVERY OF RAT KIDNEY FROM X IRRADIATION: THYMIDINE-H3 INCORPORATION STUDIES, (U)

DEC 65 25P WACHTEL,LOUIS W. ;PHILLIPS, THEODORE L. ;COLE,LEONARD J. ;
REPT. NO. USNRDL-TR-945
MONITOR: NAVMED , MR005.08-1200-7

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (*KIDNEYS, RADIATION EFFECTS), (*RADIATION EFFECTS, KIDNEYS), X RAYS, THYMIDINES, TRITIATED COMPOUNDS, AUTORADIOGRAPHY, WHOLE BODY, PARTIAL BODY IRRADIATION, RADIOLOGICAL, HUMAN BODY, GROWTH(PHYSIOLOGY), MITOSIS, RECOVERY, RATS (U)

THE EFFECT OF X IRRADIATION ON THYMIDINE-H3 INCORPORATION INTO KIDNEY CELLS (THYMIDINE INDEX) WAS MEASURED AT 4-8 HOUR INTERVALS UP TO 96 HOURS IN UNILATERALLY NEPHRECTOMIZED FEMALE WEANLING RATS. A SHARP DROP IN THE THYMIDINE INDEX OCCURRED DURING THE FIRST 16 HOURS AFTER THE KIDNEY ONLY WAS IRRADIATED WITH 1000 RAD, AND ALSO AFTER THE KIDNEY WAS IRRADIATED WITH 125 RAD OR 500 RAD AT THE SAME TIME THE BODY RECEIVED 500 RAD. IRRADIATION OF THE BODY, BUT WITH THE KIDNEY COMPLETELY SHIELDED HAD NO APPARENT INHIBITORY EFFECT ON KIDNEY THYMIDINE INCORPORATION. THE ABILITY OF THE IRRADIATED KIDNEY TO INCORPORATE THYMIDINE REAPPEARED IN 24 HOURS IF THE REMAINDER OF THE BODY WAS NOT IRRADIATED. WHEN BOTH THE BODY AND THE KIDNEY WERE IRRADIATED, RECOVERY OF THYMIDINE UPTAKE DEPENDED ON THE AMOUNT OF RADIATION RECEIVED BY EACH. AN EXPLANATION FOR THE ABOVE OBSERVATIONS IS OFFERED ON THE BASIS OF A POSTULATED SYSTEMIC FACTOR, THE FORMATION OR INDUCTION OF WHICH COULD BE AFFECTED BY RADIATION AND WHICH IS ESSENTIAL FOR THYMIDINE INCORPORATION IN THE KIDNEY. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD- 627 877 6/18
DEFENCE CHEMICAL BIOLOGICAL AND RADIATION LABS OTTAWA (ONTARIO)

THE EFFECT OF DAMAGE ON CELL CONDUCTIVITY IN ELECTRONIC CELL SIZE DISTRIBUTION. (U)

DESCRIPTIVE NOTE: TECHNICAL NOTE,
MAY 65 4P VITTORIO,P. V. ;
REPT. NO. DCBRL-TN-65-7

UNCLASSIFIED REPORT
AVAILABILITY: PUBLISHED IN CANADIAN JOURNAL OF PHYSIOLOGY AND PHARMACOLOGY V43 P1027-9 1965. COPIES TO DDC USERS ONLY.
SUPPLEMENTARY NOTE:

DESCRIPTORS: (*RADIATION EFFECTS, LYMPHOCYTES), (*LYMPHOCYTES, COUNTING METHODS), (*CELL, RADIATION EFFECTS), BLOOD COUNTS, ELECTRONIC, X RAYS, BONE MARROW, MEMBRANES(BIOLOGY), RADIATION DOSAGE, RATS, IN VITRO ANALYSIS (U)
IDENTIFIERS: SIZES(DIMENSIONS), TRANSIENT RADIATION EFFECTS(ELECTRONICS) (U)

USING A COULTER COUNTER, THE STUDY WAS CARRIED OUT TO DETERMINE WHETHER CELL MEMBRANE INJURY FROM IRRADIATION OR BY MECHANICAL MEANS CHANGED CELL CONDUCTIVITY TO SUCH AN EXTENT THAT FALSE CELL SIZE DISTRIBUTION CURVE WOULD RESULT. (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD- 629 512 6/18
NAVAL RADIOLOGICAL DEFENSE LAB SAN FRANCISCO CALIF

X-RAY INDUCED GLOMERULOSCLEROSIS IN RATS: MODIFICATION OF LESION BY FOOD RESTRICTION, UNINEPHRECTOMY, AGE, (U)

FEB 66 20P WACHTEL,L. W. ;COLE,L. J. ; ROSEN,V. J. ,JR.;
REPT. NO. USNRDL-TR-977,
MONITOR: NAVMED , MR005.08-1200-7

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (*RADIATION EFFECTS, KIDNEYS), (*KIDNEYS, RADIATION EFFECTS), PATHOLOGY, FOOD, DIET, AGING(PHYSIOLOGY), X RAYS, RADIATION INJURIES, GROWTH(PHYSIOLOGY), BODY WEIGHT, BLOOD VESSELS, DEOXYRIBONUCLEIC ACIDS, RADIATION DOSAGE, EXCISION, RATS (U)

THE DEVELOPMENT OF GLOMERULOSCLEROSIS WAS MEASURED IN THE KIDNEYS OF RATS UNDER VARIOUS CONDITIONS OF IRRADIATION AND GROWTH. WEANLING RATS SHOWE KIDNEYS WERE IRRADIATED DIRECTLY WITH 1,000 RAD OR 2,000 RAD DEVELOPED GLOMERULOSCLEROTIC LESIONS IN 2 MONTHS; ONE-YEAR OLD RATS SHOWED NO EVIDENCE OF LESIONS 2 MONTHS AFTER IRRADIATION WITH 2,000 RAD. IN THE WEANLING RAT THE RAPIDITY OF DEVELOPMENT AND SEVERITY OF THE GLOMERULOSCLEROTIC LESIONS WERE INCREASED BY GROWTH OR ENLARGEMENT OF THE KIDNEY SUBSEQUENT TO IRRADIATION, AND WERE SLOWED BY GROWTH RETARDATION ARTIFICIALLY PRODUCED THROUGH LOW-FOOD INTAKE. THE INDUCTION OF GLOMERULOSCLEROSIS BY X-IRRADIATION OF THE KIDNEY IS BELIEVED TO BE A LATENT RESULT OF DAMAGE TO THE KIDNEY'S VASCULAR SYSTEM, AND THAT EFFECTS OF THIS DAMAGE ARE ACCENTUATED IN THE GROWING KIDNEY. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD- 629 865 6/18 6/16 6/5
DEPARTMENT OF THE NAVY WASHINGTON D C

THE EFFECT OF MICROWAVES ON THE FUNCTIONAL STATE OF NERVE, (U)

66 13P KAMENSKII,YU. I. ;
REPT. NO. TRANSLATION-2121,
MONITOR: TT , 66-60757

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: DEISTVIE MIKROVOLN NA FUNKTSIONALNOE SOSTOIANIE NERVA, TRANS. OF BIOFIZIKA (USSR) V9 N6 P695-700 1964.

DESCRIPTORS: (*RADIOBIOLOGY, MICROWAVES), (*NERVES, MICROWAVES), (*MICROWAVES, NERVOUS SYSTEM), AMPHIBIANS, PHYSIOLOGY, USSR, THRESHOLDS(PHYSIOLOGY), THERMAL PROPERTIES (U)
IDENTIFIERS: MICROWAVE EFFECTS(BIOLOGICAL) (M)

THE RESULTS ARE DESCRIBED OF STUDIES OF THE FUNCTIONAL STATE OF FROG NERVE (N. ISCHIADICUS): OF THE STIMULUS THRESHOLDS, OF THE VELOCITIES OF STIMULUS CONDUCTION, OF THE ABSOLUTE AND RELATIVE REFRACTORY PHASES, OF THE AMPLITUDE OF THE ACTION POTENTIALS--UPON IRRADIATION BY MICROWAVES OF NON-THERMAL INTENSITY DURING CONTINUOUS AND PULSED REGIMES. (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD- 630 103 6/18
NAVAL RADIOLOGICAL DEFENSE LAB SAN FRANCISCO CALIF

EFFECTS OF TOTAL-BODY X IRRADIATION ON PERITONEAL AND CIRCULATING LEUCOCYTES OF MICE, (U)

JAN 66 26P KORNFELD,LOTTIE ;GREENMAN, VIVIAN ;

REPT. NO. USNRDL-TR-966,
MONITOR: NAVMED , MR005.08-1200-4

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (*LEUKOCYTES, RADIATION EFFECTS), (*X RAYS, WHOLE BODY IRRADIATION), PERITONEUM, MICE, BLOOD CIRCULATION, CELLS(BIOLOGY), PHAGOCYTES (U)

TOTAL-BODY X IRRADIATION OVER A WIDE RANGE OF DOSES WAS FOUND TO ALTER THE NUMBER AND DISTRIBUTION OF CELLS IN THE PERITONEAL CAVITY OF UNSTIMULATED LAF-1 MICE. UNIRRADIATED CONTROLS YIELDED 5-7 X 10 TO THE 6TH POWER MONONUCLEAR CELLS, ABOUT 30% OF WHICH WERE MACROPHAGES AND 70% SMALL AND MEDIUM LYMPHOCYTES. FOLLOWING EXPOSURE TO SUBLETHAL X RAY DOSES (90-590 R), MACROPHAGE COUNTS WERE ESSENTIALLY UNALTERED FOR TWO WEEKS BUT DECLINED SLIGHTLY DURING THE 3RD WEEK AFTER 390-590 R. FOLLOWING A MIDLETHAL DOSE (690 R), THE NUMBER OF MACROPHAGES WAS UNCHANGED FOR ONE WEEK BUT FELL TO ABOUT 50% OF THE NORMAL VALUE BY 21 DAYS POSTIRRADIATION. AFTER LETHAL IRRADIATION (790-1190 R), MACROPHAGE COUNTS REMAINED UNALTERED FOR 3 DAYS BUT DECREASED ON THE 7TH DAY. THE NUMBER OF LYMPHOCYTES IN THE PERITONEAL CAVITY DECREASED SHARPLY WITHIN 24 HOURS AFTER EVERY DOSE EMPLOYED AND THEN DECLINED FURTHER AT A MORE GRADUAL RATE. BOTH THE INITIAL AND THE SUBSEQUENT DISAPPEARANCE OF LYMPHOCYTES INCREASED IN SEVERITY WITH INCREASING EXPOSURE. DURING THE FIRST WEEK POSTIRRADIATION, A LINEAR RELATION EXISTED BETWEEN THE PERCENTAGE OF LYMPHOCYTES IN THE PERITONEAL CELL POPULATION AND THE X RAY DOSE. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD- 630 870 6/18
NAVAL RADIOLOGICAL DEFENSE LAB SAN FRANCISCO CALIF

AN ULTRASTRUCTURAL STUDY OF THE DEVELOPMENT OF RADIATION INJURY IN THE LUNG, (U)

FEB 66 23P PHILLIPS,THEODORE L. ;
REPT. NO. USNRDL-TR-973,
MONITOR: NAVMED , MR005.08-5201

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (*LUNG, *RADIATION INJURIES), RADIATION DOSAGE, COLLAGEN, CELLS(BIOLOGY), MEMBRANES(BIOLOGY), CAPILLARIES, X RAYS, TISSUES(BIOLOGY), ELECTRON MICROSCOPY (U)

RADIATION DOSES OF 2000 R WERE GIVEN TO THE LEFT HEMITHORAX OF A GROUP OF 25 RATS. AT INTERVALS OF FROM ONE HOUR TO ONE YEAR FOLLOWING IRRADIATION SECTIONS OF THE LUNG WERE EXAMINED WITH THE ELECTRON MICROSCOPE. THE INITIAL SITE OF RADIATION DAMAGE APPEARS TO LIE CHIEFLY IN THE ENDOTHELIUM. THE ENDOTHELIUM IS SLOUGHED AND THE ORIGINAL ENDOTHELIAL SPACE IS REPLACED BY COLLAGEN AND MAST CELL INFILTRATES. SOME CAPILLARIES ARE RECANALIZED BY NEW ENDOTHELIAL CELLS. EVENTUALLY THESE CAPILLARIES ATTAIN AN APPEARANCE SIMILAR TO THAT OF THE ORIGINAL CAPILLARY BUT WITH A SLIGHTLY THICKENED ENDOTHELIUM AND BASEMENT MEMBRANE. IF THE ORIGINAL CAPILLARY ARCHITECTURE IS NOT MAINTAINED, MASSIVE FIBROSIS RESULTS. THE MAST CELL PARTICIPATES EXTENSIVELY IN THE REPAIR OF THE RADIATION DAMAGE AND IS CLOSELY ASSOCIATED WITH COLLAGEN AND NEW CAPILLARY FORMATION. IT IS STRESSED THAT THE DEGREE OF DAMAGE OCCURRING AFTER A GIVEN DOSE OF IRRADIATION VARIES WIDELY AND THAT THESE OBSERVATIONS WERE MADE ON ONLY SMALL SAMPLES OF LUNGS. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD- 632 282 6/18
NAVAL RADIOLOGICAL DEFENSE LAB SAN FRANCISCO CALIF

DIFFERENTIAL SENSITIVITY OF CIRCULATING AND PERITONEAL MONONUCLEAR CELLS OF MICE TO TOTAL-BODY X IRRADIATION, (U)

MAY 66 18P KORNFELD,LOTTIE ;GREENMAN, VIVIAN ;

REPT. NO. USNRDL-TR-999,
PROJ: DA-3A-014501-A71-H,
MONITOR: NAVMED , MR005.08-1200-4

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (*LYMPHOCYTES, *RADIATION EFFECTS), LEUKOCYTES, X RAYS, PERITONEUM, WHOLE BODY IRRADIATION, PHAGOCYTES, SENSITIVITY, MICE (U)

DOSE-RESPONSE CURVES OBTAINED 1 AND 3 DAYS AFTER EXPOSURE TO TOTAL-BODY X IRRADIATION INDICATE THAT THE MONONUCLEAR CELLS IN THE CIRCULATING BLOOD AND IN THE PERITONEAL CAVITY OF LAF SUB1 MICE MAY BE ARRANGED IN THE FOLLOWING ORDER OF DECREASING SENSITIVITY: CIRCULATING LYMPHOCYTES, SMALL PERITONEAL LYMPHOCYTES, MEDIUM PERITONEAL LYMPHOCYTES, PERITONEAL MACROPHAGES. HOWEVER, ON THE 3RD DAY POSTIRRADIATION, THE CURVE OF THE SMALL PERITONEAL LYMPHOCYTES CLOSELY APPROACHED THAT OF THE CIRCULATING LYMPHOCYTES. IT IS SUGGESTED THAT THE GREATER SENSITIVITY TO IRRADIATION OF SMALL THAN OF MEDIUM PERITONEAL LYMPHOCYTES IS NOT DUE TO ENVIRONMENTAL FACTORS BUT TO AS YET UNIDENTIFIED DIFFERENCES IN THE CELLS. ON THE OTHER HAND, THE GREATER LOSS OF CIRCULATING LYMPHOCYTES THAN OF SMALL PERITONEAL LYMPHOCYTES 1 DAY AFTER X RAY EXPOSURE MAY MERELY REFLECT MORE EFFICIENT REMOVAL OF DAMAGED CELLS FROM THE CIRCULATION THAN FROM THE PERITONEAL CAVITY. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD- 637 574 6/18 6/1 6/15 6/20
CHICAGO UNIV ILL TOXICITY LAB

EFFECTS OF X-IRRADIATION ON THE HEXOBARBITAL METABOLIZING ENZYME SYSTEM OF RAT LIVER MICROSOMES. (U)

DESCRIPTIVE NOTE: REPT. FOR 1 DEC 65-31 MAY 66.
JUN 66 33P YAM,KEI-MING ;DUBOIS,K. P.
;
CONTRACT: AF 41(609)-2977,
PROJ: AF-7757,
TASK: 775702,

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (*RADIATION EFFECTS, ENZYMES), (*ENZYME INHIBITORS, X RAYS), (*ENZYMES, BIOSYNTHESIS), (*HYPNOTICS AND SEDATIVES, METABOLISM), DETOXIFICATION, BARBITURATES, OXIDATION, MICROSOMES, LIVER, REGENERATION, EXCISION, SUBLETHAL DOSAGE, TOXICITY, HYPNOSIS, SLEEP, HEAD(ANATOMY), MALES, FEMALES, RATS (U)
IDENTIFIERS: HEXOBARBITAL (U)

A STUDY WAS CONDUCTED ON THE INFLUENCE OF X-RAY ON THE DEVELOPMENT OF A HEPATIC MICROSOMAL OXIDASE THAT CATALYZES THE OXIDATIVE DETOXIFICATION OF HEXOBARBITAL. EXPOSURE OF 23-DAY OLD MALE RATS TO 400 R OF X-RAY COMPLETELY INHIBITED THE RAPID INCREASE IN ENZYME ACTIVITY THAT NORMALLY OCCURS AT THIS AGE IN MALE RATS. AFTER THREE WEEKS FOLLOWING RADIATION EXPOSURE, REVERSAL OF THE INHIBITION WAS OBSERVED. EXPOSURE OF ONLY THE HEADS OF MALE RATS ALSO RESULTED IN INHIBITION OF THE ENZYME DEVELOPMENT IN THE LIVER, AND HYPOPHYSECTOMIZED, UNIRRADIATED RATS FAILED TO EXHIBIT THE NORMAL INCREASE IN ENZYME ACTIVITY. THESE FINDINGS RESEMBLED THE RESULTS OF PREVIOUS INVESTIGATIONS IN THIS LABORATORY ON OTHER MICROSOMAL ENZYMES AND PROVIDED FURTHER EVIDENCE THAT RADIATION ACTS ON SOME PROCESS INVOLVED IN THE SYNTHESIS OF INCREASED ENZYME ACTIVITY IN THE LIVERS OF MALE RATS THROUGH AN INDIRECT MECHANISM PROBABLY INVOLVING HORMONAL REGULATION OF MICROSOME ENZYME SYNTHESIS. X-IRRADIATION (400 R) ALSO INHIBITED THE SYNTHESIS OF THE HEXOBARBITAL OXIDIZING ENZYME IN THE LIVER OF PARTIALLY HEPATECTOMIZED MALE RATS. A PROLONGED DURATION OF ACTION OF HEXOBARBITAL IN IRRADIATED YOUNG MALE RATS AND HEPATECTOMIZED, ADULT RATS DEMONSTRATED THE IN VIVO EFFECTS OF INHIBITION OF ENZYME SYNTHESIS ON DRUG METABOLISM. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD- 639 192 6/18
SOUTHWEST RESEARCH INST SAN ANTONIO TEX DEPT OF PHYSICAL AND BIOLOGICAL SCIENCES

THE EFFECTS OF IONIZING RADIATION ON OXIDATION STATES OF BIOLOGICAL SYSTEMS. (U)

DESCRIPTIVE NOTE: FINAL REPT., JUL 65-JUL 66.
JUL 66 54P JOHNSON, DONALD E. ; REGISTER, JAMES W., JR. ; STOREY, WILLIAM H., JR. ; BOLLINGER, JAMES N. ;
CONTRACT: AF 41(609)-2816,
PROJ: SWRT-05-1755

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (*RADIOBIOLOGY, OXIDATION), (*ELECTRON PARAMAGNETIC RESONANCE, MITOCHONDRIA), RADIATION EFFECTS, ENZYMES, CYTOCHROME OXIDASE, OXIDOREDUCTASES, MOLYBDENUM, IRON, OXIDATION REDUCTION REACTIONS, MICE(U)

CHANGES IN THE OXIDATION STATE OF BIOLOGICAL SYSTEMS AS A FUNCTION OF IONIZING RADIATION WERE STUDIED BY MEASURING THE ACTIVITY OF TWO METALLOENZYMES AND BY EVALUATING ELECTRON SPIN RESONANCE SIGNALS PRODUCED BY MITOCHONDRIA. THE SPECIFIC ACTIVITY OF LIVER CYTOCHROME OXIDASE AND XANTHINE OXIDASE WAS NOT ALTERED IN MICE EXPOSED TO TOTAL-BODY IRRADIATION OF 150 TO 22,500 RAD. IRON (FE(II)), MOLYBDENUM (MO(V)), AND FREE RADICALS (PROBABLY FLAVOQUINONES) YIELDED THE MOST PREDOMINANT SIGNALS IN ELECTRON SPIN RESONANCE ANALYSIS OF LIVER MITOCHONDRIA ISOLATED FROM BOTH IRRADIATED AND CONTROL MICE. BOTH THE ELECTRON SPIN RESONANCE AND CYTOCHROME OXIDASE DATA SUGGEST THAT THE ELECTRON TRANSPORT SYSTEM IS NOT DAMAGED BY THE LEVELS OF IONIZING RADIATION USED IN THIS INVESTIGATION. THE FACT THAT MOLYBDENUM ELECTRON SPIN RESONANCE SIGNALS OCCUR IN THE MITOCHONDRIAL PREPARATIONS AND THAT PRELIMINARY DATA INDICATE THIS METAL UNDERGOES OXIDATIVE CHANGES DUE TO RADIATION INDICATES THE NEED FOR MORE EXTENSIVE INVESTIGATION OF THE RELATIONSHIP BETWEEN THIS METAL AND IONIZING RADIATION. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD- 639 758 6/18 20/8 11/9
TEXAS NUCLEAR CORP AUSTIN

EXPERIMENTAL FAST NEUTRON DOSIMETRY AND LD 50/30 STUDIES IN MICE. (U)

DESCRIPTIVE NOTE: FINAL REPT.
AUG 66 53P
CONTRACT: AF 41(609)-2947,
PROJ: AF-7757,
TASK: 775704,

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (*NEUTRON SCATTERING, *RADIOBIOLOGY), (*PLASTICS, NEUTRON SCATTERING), FAST NEUTRONS, DOSIMETERS, LETHAL DOSAGE, POLYETHYLENE PLASTICS, NYLON, DOSE RATE, NEUTRON FLUX, NEUTRON DETECTORS, GAMMA RAYS, MICE (U)

THE REPORT CONCERNS EXPERIMENTAL 14 MEV NEUTRON DOSIMETRY USING MICE AS NEUTRON SCATTERING SAMPLES AND AN LD 50/30 STUDY OF MICE USING 14 MEV NEUTRONS AND 2 MEV X-RAYS. THE IRRADIATIONS FOR THE LD 50/30 STUDY WERE CARRIED OUT USING COMPUTED NEUTRON-FLUX-TO-DOSE VALUES. THE EXPERIMENTAL NEUTRON DOSIMETRY STUDY IS DESCRIBED, NOT ONLY FOR MICE BUT FOR THREE TISSUE-EQUIVALENT TYPE MATERIALS: POLYETHYLENE, NYLON, AND SHONKA PLASTIC. (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD- 640 316 6/18
NAVAL RADIOLOGICAL DEFENSE LAB SAN FRANCISCO CALIF

THE RESPONSE OF ERYTHROPOIETIC STEM CELLS OF MICE TO IRRADIATION WITH FISSION NEUTRONS, (U)

AUG 66 31P KREBS, J. S. ;
REPT. NO. USNRDL-TR-1059,
MONITOR: NAVMED MR005.08-0009

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (*FISSION NEUTRONS, *RADIOBIOLOGY), (*HEMOPOIETIC SYSTEM, *RADIATION EFFECTS), (*ERYTHROCYTES, RADIATION EFFECTS), CELLS(BIOLOGY), BONE MARROW, RADIATION DOSAGE, MATHEMATICAL MODELS, MICE (U)

THE DESTRUCTION OF ERYTHROPOIETIC STEM CELLS BY IRRADIATION WITH FISSION NEUTRONS WAS STUDIED IN PLETHORIC C57 LEADEN MALE MICE BY MEASURING THE INCORPORATION OF FE59 INTO ERYTHROCYTES 48 HOURS AFTER A DOSE OF ERYTHROPOIETIN. THE SURVIVAL OF STEM CELLS IN MICE EXPOSED TO SINGLE DOSES OF NEUTRONS AT 37 RAD/MIN. FOLLOWED THE SINGLE-HIT MULTI-TARGET MODEL OF RADIATION INJURY TO CELLS. D IS DOSE, D SUB 0 IS 37% DOSE, AND E IS TARGET MULTIPLICITY. D SUB 0 WAS A CONSTANT, EQUAL TO 27.8 RADS FOR ALL ANIMALS, BUT E VARIED FROM 1 TO 4 IN DIFFERENT ANIMALS. THE SURVIVAL OF STEM CELLS IN MICE EXPOSED TO SINGLE DOSES OF NEUTRONS AT 1.75 RAD/MIN. FOLLOWED THE SINGLE-HIT MULTI-TARGET MODEL, WITH D SUB 0 = 26 RAD, FOR THOSE ANIMALS FOR WHICH E = 1, BUT ANIMALS WITH E>1 DID NOT FIT THE MODEL. THE SURVIVAL OF STEM CELLS IN MICE EXPOSED TO 3 DOSES AT 37 RAD/MIN. AT INTERVALS OF 10-12 HOURS ALSO FOLLOWED THE SINGLE-HIT MULTI-TARGET MODEL, WITH MEAN D SUB 0 = 26 RAD, AND A DISTRIBUTION OF VALUES OF E SIMILAR TO THAT IN THE SINGLE DOSE. THE DATA STRONGLY IMPLY THAT THE LOSS OF STEM CELLS FOLLOWS THE MULTI-TARGET MODEL, BUT THAT E, INSTEAD OF BEING A CONSTANT, IS A BASIC BIOLOGICAL VARIABLE OF THE RESPONSE. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD- 643 434 6/18
MELPAR INC FALLS CHURCH VA

EFFECTS OF RADIO-FREQUENCY IRRADIATION ON THE ENZYMES OF BEEF MUSCLE TISSUE. (U)

DESCRIPTIVE NOTE: FINAL TECHNICAL REPT., 13 APR 64-13 APR 65,
DEC 65 60P NELSON,S. ;
CONTRACT: DA-19-129-AMC-262(N)
PROJ: DA-1K025601A033
MONITOR: FD 33

UNCLASSIFIED REPORT

DESCRIPTORS: (*ELECTROMAGNETIC RADIATION, RADIOBIOLOGY), (*PEPTIDE HYDROLASES, RADIOBIOLOGY), (*BEEF, PEPTIDE HYDROLASES), (*RADIOBIOLOGY, BEEF), TISSUES(BIOLOGY), RADIOFREQUENCY, PURIFICATION, BIOASSAY, PH FACTOR, TEMPERATURE, LIVER, ENZYMES (U)

THE OBJECTIVE OF THE PROGRAM IS TO STUDY THE CONDITIONS NECESSARY TO INACTIVATE THE NATURAL PROTEOLYTIC ENZYMES OF BEEF MUSCLE TISSUE BY RADIO-FREQUENCY ENERGY. PRELIMINARY EXPERIMENTS USING PURIFIED PROTEOLYTIC ENZYMES ISOLATED FROM BEEF LIVER TISSUE WERE CONDUCTED TO DETERMINE THE EFFECTS OF VARIOUS R-F PARAMETERS. FROM 4 DESIGN STUDIES, IT COULD NOT BE CONCLUSIVELY DETERMINED AS TO WHAT THE LEVELS OF THE MAIN FACTORS AND THE INTERACTION FACTORS NECESSARY FOR MAXIMUM INACTIVATION ARE. IT HAS BEEN SHOWN, HOWEVER, THAT A SET CONDITION ABOUT 40% INACTIVATION OF THE PROTEOLYTIC ENZYMES CAN BE EFFECTED. R-F RADIATION EXPERIMENTS ON GROUND BEEF TISSUE GAVE INCONCLUSIVE RESULTS. CHIEF PROBLEM AREA LIES IN THE FACT THAT THE EXTRACTION AND PURIFICATION PROCESS DOES NOT YIELD CONSISTENT RESULTS. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD- 644 451 6/18 20/8
SCHOOL OF AEROSPACE MEDICINE BROOKS AFB TEX

PROTON DEPTH-DOSE DOSIMETRY, (U)

AUG 65 21P MITCHELL,JOHN C. ;DALRYMPLE, GLENN V. ;WILLIAMS,GWILYM H. ;HALL,JAMES D. ; MORGAN,IRA L. ;
REPT. NO. SAM-TR-65-262
TASK: 775701 ,775704

UNCLASSIFIED REPORT
AVAILABILITY: PUBLISHED IN RADIATION RESEARCH V28 N2 P390-405 JUN 1966.
SUPPLEMENTARY NOTE: PREPARED IN COOPERATION WITH TEXAS NUCLEAR CORP., AUSTIN.

DESCRIPTORS: (*RADIATION HAZARDS, SPACE FLIGHT), (*PROTONS, *RADIOBIOLOGY), DOSIMETERS, PRIMATES, RADIATION DOSAGE (U)
IDENTIFIERS: ALANINES (U)

GLASS ROD MICRODOSIMETERS AND ALANINE WERE IRRADIATED WITH PROTON ENERGIES RANGING FROM 6.8 TO 400 MEV. EXPOSURES WERE MADE UNDER CONDITIONS OF MINIMAL SCATTER AS WELL AS IN SEVERAL PHANTOMS WHICH INCLUDED STATIONARY BLOCKS AND ROTATED LUCITE AND MASONITE CYLINDERS. IN ADDITION TO THESE, TWO SPECIALLY CONSTRUCTED PRIMATE PHANTOMS WERE IRRADIATED IN THE SAME MANNER AS THE PRIMATES USED FOR THE BIOLOGICAL EXPERIMENTS. THE DEPTH-DOSE MEASUREMENTS ARE CONSIDERED IN LIGHT OF CALCULATIONS MADE WITH A DIGITAL COMPUTER, AND THE CALCULATED DEPTH-DOSE DISTRIBUTIONS IN REPRESENTATIVE TISSUE PHANTOMS ARE PRESENTED FOR 32-MEV, 55-MEV, 138-MEV, 250-MEV, AND 400-MEV PROTON EXPOSURES. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD- 645 979 6/18
LIBRARY OF CONGRESS WASHINGTON D C AEROSPACE TECHNOLOGY DIV

SOVIET RESEARCH ON THE NEURAL EFFECTS OF MICROWAVES. (U)

DESCRIPTIVE NOTE: ATD WORK ASSIGNMENT NO. 79-67-1.
NOV 66 38P DODGE ,CHRISTOPHER ;KASSEL, SIMON ;
REPT. NO. ATD-66-133
MONITOR: TT 67-60561

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: BASED ON SOVIET OPEN SOURCES PUB. 1952-66. REPT. ON SURVEYS OF FOREIGN SCIENTIFIC AND TECHNICAL LITERATURE.

DESCRIPTORS: (*RADIOBIOLOGY, *ELECTROMAGNETIC RADIATION), (*CENTRAL NERVOUS SYSTEM, RADIOBIOLOGY), MICROWAVES, ELECTROPHYSIOLOGY, NEUROLOGY, RADIATION INJURIES, MAGNETIC FIELDS, REFLEXES, BRAIN, NERVE CELLS, IN VIVO ANALYSIS, LOW FREQUENCY, HYGIENE, THERAPY, BIBLIOGRAPHIES, REVIEWS, USSR (U)

THE PRIMARY PURPOSE OF THE REPORT IS TO OUTLINE SOVIET RESEARCH ON THE EFFECT OF LOW-INTENSITY MICROWAVE RADIATION ON THE CENTRAL NERVOUS SYSTEM OF LIVING ORGANISMS, INCLUDING MAN. THERE ARE SIX SECTIONS IN THE REPORT: (1) SCOPE OF EFFORT: ORGANIZATIONS AND INDIVIDUAL RESEARCHERS; (2) SUBJECT DEVELOPMENT; (3) SPECIFIC NEURAL FUNCTIONS AND STRUCTURES; (4) IN VIVO NEURAL EFFECTS; (5) NEURAL EFFECTS OF LOW-FREQUENCY ELECTROMAGNETIC AND MAGNETIC FIELDS; (6) CLINICAL, THERAPEUTIC, AND HYGIENIC ASPECTS. A DISCUSSION SUMMARIZES IMPORTANT FACTS AND DEDUCTIONS FROM THE FOREGOING SECTIONS AND SPECULATES ON THE INTENSITY AND TYPE OF SOVIET RESEARCH EFFORTS IN THIS AREA IN THE FUTURE. THE BIBLIOGRAPHY AT THE END OF THE REPORT INCLUDES 42 ENTRIES. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD- 647 752 6/18 6/5
OAK RIDGE NATIONAL LAB TENN

THE RADIOBIOLOGY OF THE CANCER CELL, (U)

JAN 59 24P UPTON, A. C. ;
MONITOR: SAM 59-22

UNCLASSIFIED REPORT

DESCRIPTORS: (*CANCER, *RADIOBIOLOGY), NEOPLASMS, RADIATION EFFECTS, PATHOLOGY, METABOLISM, GROWTH(PHYSIOLOGY), GENETICS, RADIATION INJURIES, RADIOTHERAPY, MITOSIS, CHROMOSOMES, RADIATION HAZARDS, X RAYS, RADIATION DOSAGE (U)
IDENTIFIERS: RADIATION TOLERANCE (U)

THROUGH STUDY OF THE EFFECTS OF IONIZING RADIATION, FUNDAMENTAL INFORMATION HAS BEEN GAINED ABOUT THE BIOLOGY OF NORMAL AND NEOPLASTIC CELLS AND ABOUT THE PROCESS OF NEOPLASIA. A VARIETY OF DISTURBANCES HAVE BEEN OBSERVED IN IRRADIATED CELLS, INCLUDING ALTERATIONS IN METABOLISM, GROWTH, AND DIFFERENTIATION, BUT EXISTING EVIDENCE SUGGESTS THAT THE MOST SIGNIFICANT PRIMARY ACTION OF RADIATION IS ON THE GENETIC APPARATUS OF THE CELL. THAT RADIATION-INDUCED GENETIC EFFECTS MAY INITIATE TUMOR FORMATION IS HIGHLY CONCEIVABLE; HOWEVER, SOME OTHER MECHANISM SEEMS TO BE INVOLVED IN CERTAIN INSTANCES OF RADIATION CARCINOGENESIS. WHATEVER THE MECHANISM, THE DEVELOPMENT OF MALIGNANCY APPEARS TO BE A COMPLEX, MULTISTAGE PROCESS. THE MATERIAL BASIS FOR THE LARGE VARIATION IN RADIOSENSITIVITY THAT EXISTS AMONG CELLS OF DIFFERENT TYPES IS STILL POORLY UNDERSTOOD; HOWEVER, WITH INCREASING KNOWLEDGE OF THE MODE OF ACTION OF RADIATION AND OF THE FACTORS INFLUENCING THE RADIOSENSITIVITY OF THE CELL, WAYS ARE BEING FOUND TO INCREASE, DECREASE, AND REPAIR RADIATION INJURY. THESE ADVANCES HOLD PROMISE OF PROVIDING MEANS OF ENHANCING THE EFFECTIVENESS OF RADIOTHERAPY IN THE TREATMENT OF CANCER AND OF REDUCING THE HAZARD OF RADIATION AS A CARCINOGENIC AGENT. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 647 936 6/18 6/3
NORTHWESTERN UNIV EVANSTON ILL DEPT OF BIOLOGICAL SCIENCES

DIURNAL VARIATION IN ORGANISMIC RESPONSE TO VERY WEAK GAMMA RADIATION, (U)

66 9P BROWN,FRANK A. , JR.;PARK, YOUNG H. ;ZENO,JOSEPH R. ;

UNCLASSIFIED REPORT
AVAILABILITY: PUBLISHED IN NATURE V211 N5051 P830-3 AUG 20 1966.
SUPPLEMENTARY NOTE: SUPPORTED BY A CONTRACT WITH ONR, AND GRANTS FROM NIH AND NSF.

DESCRIPTORS: (*RADIOBIOLOGY, *DIURNAL VARIATIONS), GAMMA RAYS, METABOLISM, RESPONSE(BIOLOGY), BACKGROUND, RADIOACTIVITY, OXYGEN CONSUMPTION, RHYTHM(BIOLOGY) (U)

AN EXPERIMENT WAS DESIGNED TO DETERMINE: (1) WHETHER SMALL CHANGES IN LEVEL OF RADIATION HAVE ANY MEASURABLE INFLUENCE ON THE OVERALL SPONTANEITY OF AN ORGANISM; (2) WHETHER THE CHARACTERISTIC, FUNDAMENTAL 24-H PATTERN OF METABOLIC VARIATION IS REFLECTED IN ANY COMPARABLE VARIATION IN RESPONSIVENESS TO A VERY WEAK RADIATION FIELD. THIS ARTICLE DESCRIBES AND DISCUSSES THE FINDINGS. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD- 648 028 6/18
UPPSALA UNIV (SWEDEN) GUSTAF WERNER INST

LOCALIZED RADIOLESIONS IN THE CENTRAL NERVOUS SYSTEM. BIBLIOGRAPHY. (U)

DESCRIPTIVE NOTE: FINAL TECHNICAL REPT.
DEC 63 3P
CONTRACT: AF-EOAR-62-84
MONITOR: AFOSR 64-0022

UNCLASSIFIED REPORT

DESCRIPTORS: (*RADIOBIOLOGY, BIBLIOGRAPHIES), (*CENTRAL NERVOUS SYSTEM, RADIATION EFFECTS), PATHOLOGY, HISTOLOGY, SWEDEN (U)

THE BIBLIOGRAPHY LISTS 7 REPORTS OF RESEARCH CONDUCTED IN THE FIELD OF RADIOBIOLOGY AND THE EFFECTS OF IONIZING RADIATION ON THE CENTRAL NERVOUS SYSTEM. (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD- 648 204 6/18 6/5
ARMED FORCES INST OF PATHOLOGY WASHINGTON D C

SOME EFFECTS OF NEODYMIUM LASER RADIATION UPON THE HEADS OF DOGS, (U)

67 7P EARLE,KENNETH M. ;GARNER, F. M. ;KRANER,KEITH L. ;MCKNIGHT,WILLIAM B. ;DEARMAN,JAMES R. ;

UNCLASSIFIED REPORT
AVAILABILITY: PUBLISHED IN MILITARY MEDICINE V132 N2 P122-7 FEB 1967.
SUPPLEMENTARY NOTE: PREPARED IN COOPERATION WITH AMC, REDSTONE ARSENAL, ALA.

DESCRIPTORS: (*LASERS, WOUNDS AND INJURIES), (*RADIOBIOLOGY, LASERS), DOGS, HEAD(ANATOMY), NEODYMIUM, HISTOLOGICAL TECHNIQUES, PATHOLOGY (U)

FOUR BEAGLE CROSS DOGS WERE EXPOSED TO SINGLE FOCUSED AND UNFOCUSED SHOTS OF NEODYMIUM LASER RADIATION DIRECTED UPON THEIR SHAVED FOREHEADS. THE ENERGY OF THE SHOTS ON TARGET WERE AS FOLLOWS: (1) 610 JOULES UNFOCUSED OVER AN AREA ABOUT ONE CM. IN DIAMETER, (2) 490 JOULES FOCUSED OVER AN AREA ABOUT TWO MM. IN DIAMETER, (3) 800 JOULES UNFOCUSED OVER AN AREA ABOUT ONE CM. IN DIAMETER, (4) 610 JOULES FOCUSED OVER AN AREA ABOUT TWO MM. IN DIAMETER. THE SEQUENCE OF EVENTS WAS STUDIED BY HIGH SPEED MOVIES (UP TO 7000 FRAMES/SEC.), BY REGULAR SPEED MOVIES, AND BY CLOSED CIRCUIT TELEVISION. ON TELEVISION THE HEADS OF THE DOGS APPEARED TO MOVE AS A DIRECT RESULT OF THE SHOT, BUT HIGH SPEED PHOTOGRAPHS REVEALED THAT THE MOVEMENT CAME APPROXIMATELY 0.1 SECOND AFTER THE SHOT. THE MOVEMENT OF THE HEAD CAME AFTER THE BURNING OFF PERIOD HAD COMPLETELY CLEARED AND COULD NOT HAVE BEEN DUE TO ANY EXPLOSIVE, ROCKET-LIKE, OR OTHER PROPULSIVE EFFECT. THE TIME INTERVAL IS COMPATIBLE WITH REACTION TO STARTLE OR PAIN. THE DOGS APPEARED NORMAL AFTER THE SHOTS WITH NO EVIDENCE OF CONCUSSION. TWO DOGS WERE OBSERVED FOR THREE MONTHS AFTER THE SHOTS AND TWO DOGS WERE OBSERVED FOR SIX MONTHS. AUTOPSY REVEALED SUPERFICIAL SCARRING OF SKIN WITH FAILURE OF HAIR TO RE-GROW AT THE SITES OF THE INITIAL BURNS. THE SKULL, DURA, AND BRAIN OF EACH DOG SHOWED NO EVIDENCE OF DAMAGE FROM THE LASER RADIATION ON GROSS OR MICROSCOPIC EXAMINATION. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD- 649 460 6/18
LIBRARY OF CONGRESS WASHINGTON D C AEROSPACE TECHNOLOGY DIV

CHANGES IN THE TIGROID SUBSTANCE OF NEURONS UNDER THE EFFECT OF RADIO WAVES, (U)

JAN 67 17P BILOKRYNTSKYI,V. S. ;
REPT. NO. ATD-67-3
MONITOR: TT 67-61396

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: ZMINY TYGROYIDNOYI RECHOVYNY NEIRONIV PID VPLYVOM RADIOKHVYL, TRANS. OF FIZIOLOGICHNYI ZHURNAL (USSR) V12 N1 P70-8 1966. TRANSLATIONS OF FOREIGN SCIENTIFIC AND TECHNICAL LITERATURE.

DESCRIPTORS: (*RADIOBIOLOGY, *RADIO WAVES), (*NERVE CELLS, RADIOBIOLOGY), RADIATION INJURIES, MORPHOLOGY(BIOLOGY), SUPERHIGH FREQUENCY, SPINAL CORD, GANGLIA, BRAIN, CELL STRUCTURE, HISTOLOGY, USSR (U)

EXPOSURE TO SINGLE RADIATION OF A HIGH-INTENSITY 3-CM-BAND SHF FIELD (0.4-0.5 W/SQ CM) FOR 1 HOUR RESULTS IN INJURY BEGINNING IN THE CEREBRAL AND SPINAL-CORD NERVE CELLS OF CATS, TAKING THE FORM OF VOLUME AND SHAPE CHANGES, CHANGES IN THE POSITION AND TINCTORIAL PROPERTIES OF THE NUCLEUS AND NUCLEOLUS, AND REGROUPING OF THE BASOPHILIC GRANULARITY OF THE CHROMATOPHIL SUBSTANCE UP TO PULVERIZATION. THESE INJURIES ARE MORE PRONOUNCED IN SOME FUNCTIONAL GROUPS OF NEURONS THAN IN OTHERS. THE SENSORY NEURONS ARE MORE LABILE, THOSE BELONGING IN THE VEGETATIVE NERVE SYSTEM ARE LESS RESISTANT, AND THE MOTOR SOMATIC NEURONS ARE THE MOST RESISTANT. THE DEGREE OF MORPHOLOGICAL CHANGE IN NEURONS IN THE CASE OF AN ENTIRE ORGANISM BEING EXPOSED TO AN SHF FIELD CAN SERVE AS A RELIABLE INDICATOR OF THE INJURIOUS EFFECT OF RADIO WAVES. IN DETERMINING THE FUNCTIONAL CONDITION OF THE NEURON FROM THE HISTOLOGIC POINT OF VIEW, IT IS OBVIOUSLY NECESSARY TO TAKE INTO ACCOUNT THE CONDITION OF THE NUCLEOLUS, ITS TINCTORIAL PROPERTIES, AND ITS POSITION, AS WELL AS CHANGES IN THE CONDITION OF THE TIGROID SUBSTANCE AND NUCLEUS. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD- 649 810 6/18
ARMED FORCES INST OF PATHOLOGY WASHINGTON D C

ORIENTATION OF EUGLENA BY RADIO-FREQUENCY FIELDS, (U)

JUL 66 5P GRIFFIN,J. L. ;STOWELL,R. E. ;

UNCLASSIFIED REPORT
AVAILABILITY: PUBLISHED IN EXPERIMENTAL CELL RESEARCH V44 N2/3 P684-8.
SUPPLEMENTARY NOTE: SUPPORTED IN PART BY ARMY MEDICAL RESEARCH AND DEVELOPMENT COMMAND, WASHINGTON, D. C.

DESCRIPTORS: (*RADIOBIOLOGY, *PROTOZOA), RADIOFREQUENCY, ALIGNMENT, CELLS(BIOLOGY), ELECTRICAL CONDUCTIVITY, CULTURE MEDIA, RESPONSE(BIOLOGY) (U)

PRELIMINARY SURVEYS HAVE SHOWN THAT RADIO-FREQUENCY FIELDS CAUSE STRIKING SPATIAL ORIENTATION OF VARIOUS PROTOZOA AND BACTERIA. THE ELECTROMAGNETIC SPECTRUM (10 HZ TO 200 MHZ) WAS SURVEYED AND TWO NEW OBSERVATIONS WERE MADE. FIRST, LIVING CELLS OF SEVERAL KINDS EXHIBITED TWO CRITICAL FREQUENCY RANGES FOR CHANGES OF ORIENTATION. IN ADDITION TO THE ORIENTATION CHANGE NEAR 10 MHZ, A SECOND FREQUENCY RANGE WAS OBSERVED ABOVE 100 MHZ, AT WHICH THE ORGANISM RETURNED FROM ACROSS-THE-FIELD ORIENTATION TO WITH-THE-FIELD ORIENTATION. SECOND, CHANGING THE ELECTRICAL CONDUCTIVITY OF THE MEDIUM ALTERED TRANSITION FREQUENCIES. HIGH CONDUCTIVITIES CAUSED LIVING CELLS TO ORIENT ONLY WITH THE FIELD, THUS BEHAVING LIKE NONLIVING PARTICLES. THE PHYTOFLAGELLATE EUGLENA GRACILIS WAS SELECTED FOR DETAILED STUDIES BECAUSE THE CELLS ARE HARDY, ELONGATED, FREE-SWIMMING, AND RELATIVELY EASY TO ORIENT. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD- 651 879 6/18
NAVAL RADIOLOGICAL DEFENSE LAB SAN FRANCISCO CALIF

ALTERED RECUPERATIVE POTENTIAL IN PREVIOUSLY IRRADIATED MICE, (U)

APR 67 25P AINSWORTH,E. J. ;LARSEN, REX M. ;
REPT. NO. USNRDL-TR-67-35
MONITOR: NAVMED MR005.08-0017

UNCLASSIFIED REPORT

DESCRIPTORS: (*RADIATION INJURIES, RECOVERY), X RAYS, RADIATION DOSAGE, SUBLETHAL DOSAGE, MICE (U)

EARLIER STUDIES HAVE SHOWN A NON-RECUPERABLE COMPONENT OF RADIATION INJURY IN RODENTS. THIS COMPONENT IS MANIFESTED BY A SMALL INCREASE IN RADIOSENSITIVITY AND AS INCOMPLETE RECOVERY OF THE HEMATOPOIETIC SYSTEM. THE PRESENT STUDIES WERE DESIGNED TO EVALUATE THE INFLUENCE OF PREVIOUS SUBLETHAL IRRADIATION, AND PERHAPS NON-RECUPERABLE LESIONS, ON THE ABILITY OF LAF 1 MALE MICE TO RECUPERATE FROM X-RADIATION INJURY. RECUPERATION FROM RADIATION INJURY WAS STUDIED USING THE SPLIT-DOSE METHOD. MICE WERE GIVEN AN INITIAL EXPOSURE TO 450 R OF X-RADIATION FROM WHICH THEY WERE ALLOWED TO RECUPERATE. AT 14 OR 30 DAYS AFTER THE INITIAL EXPOSURE, THE LD50'S OF THE ANIMALS HAD RETURNED TO NORMAL. WHEN RECUPERATION POTENTIAL WAS MEASURED AT 14 DAYS FOLLOWING THE INITIAL EXPOSURE, A SIGNIFICANT DELAY IN RECUPERATION WAS OBSERVED. THUS, THE RETURN TO A NORMAL LD50 DOES NOT PREDICT COMPLETE RESTORATION OF RECUPERATIVE CAPACITY. THE DELAY IN RECUPERATION OBSERVED AT 14 DAYS WAS NOT PRESENT AT 30 DAYS AFTER THE INITIAL EXPOSURE. THIS INDICATES THAT THE RADIATION LESION WHICH INFLUENCES RECUPERATION IS NOT A PERSISTENT LESION. THESE FINDINGS HAVE BEARING ON THE CONCEPT OF EQUIVALENT RESIDUAL DOSE (ERD) WHICH IS USED TO PREDICT RADIATION LETHALLY IN MULTIPLE EXPOSURE SITUATIONS INVOLVING HUMANS. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD- 652 941 6/18
WALTER REED ARMY INST OF RESEARCH WASHINGTON D C

LATE HISTOPATHOLOGICAL CHANGES IN KIDNEYS OF GRID-IRRADIATED MICE, (U)

66 10P BUCCI,THOMAS J. ;
MCLAUGHLIN,MARY M. ;CONANT,CHARLES N. ;
KREBS,ADOLPH T. ;WOODWARD,KENT T. ;

UNCLASSIFIED REPORT
AVAILABILITY: PUBLISED IN STRAHLENTHERAPIE V131 N3 P352-60 1966.

DESCRIPTORS: (*RADIOTHERAPY, SHIELDING), (*KIDNEYS, RADIATION EFFECTS), HISTOLOGY, PATHOLOGY, AGING(PHYSIOLOGY), RADIATION DOSAGE, X RAYS, MICE (U)

MICE IRRADIATED WITH HIGH DOSES (1100, 2000, AND 3000 R) OF X-RAY THROUGH LEAD GRIDS WERE OBSERVED FOR MANY MONTHS FOLLOWING EXPOSURE. ANIMALS WERE EXAMINED AT INTERVALS FOR GROSS AND MICROSCOPIC CHANGES. GRID-SHIELDED MICE MAINTAINED THEIR HEALTHY APPEARANCE THROUGHOUT THE EXPERIMENT. GRID PATTERNS OF EPILATION APPEARED IN THE FUR WITHIN A FEW WEEKS, BUT THE EARLIEST GROSS EVIDENCE OF AN INTERNAL GRID PATTERN WAS SEEN ONLY AFTER 11 MONTHS IN KIDNEYS OF MICE EXPOSED TO 3000 R. IN ANIMALS EXPOSED TO LOWER DOSES THIS WAS DELAYED. TYPICAL RADIATION NEPHROPATHY CAN BE PRODUCED IN FOCAL AREAS CORRESPONDING TO THE GRID PORES. THE INTERVENING RENAL TISSUE OF THE SAME KIDNEY IS THEN AVAILABLE AS CONTROL MATERIAL. IT IS SUGGESTED THAT THIS TECHNIQUE MAY BE OF CONSIDERABLE VALUE IN SEPARATING CHANGES DUE TO AGING FROM CHANGES DUE TO RADIATION IN THE KIDNEY, AND PERHAPS IN OTHER ORGANS AS WELL. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD- 653 063 6/18
NAVAL RADIOLOGICAL DEFENSE LAB SAN FRANCISCO CALIF

THE INFLUENCE OF WHOLE-BODY EXPOSURE TO X-RAYS OR NEUTRONS ON THE LIFE SPAN DISTRIBUTION OF TUMORS AMONG MALE RATS, (U)

APR 67 60P CASTANERA,TORIBIO J. ;JONES, DAVE C. ;KIMELDORF,DONALD J. ;ROSEN,V. J. ;

REPT. NO. USNRDL-TR-67-36
MONITOR: NAVMED MR005.08-0018

UNCLASSIFIED REPORT

DESCRIPTORS: (*WHOLE BODY IRRADIATION, *NEOPLASMS), LIFE SPAN, RADIATION EFFECTS, X RAYS, NEUTRONS, CANCER, RATS (U)

ADULT MALE RATS WERE IRRADIATED WITH SINGLE, WHOLE-BODY DOSES OF X-RAYS (430 OR 680 RADS) OR WITH NEUTRONS (230 OR 320 RADS) AND MAINTAINED IN A DURATION OF LIFE STUDY. AN ANALYSIS OF THE EXTENT OF TUMORIGENESIS WAS MADE ACCORDING TO THE TYPE OF TUMOR, THE NUMBER OF ANIMALS WITH TUMORS AND THE DISTRIBUTION OF TUMORS AMONG ORGANS FOR EACH DOSE GROUP. GREATER PROPORTIONS OF THE IRRADIATED GROUPS DEVELOPED GREATER NUMBERS OF TUMORS THAN DID THE CONTROLS, EVEN THOUGH LIFESPAN WAS REDUCED BY IRRADIATION. RADIATION WAS PARTICULARLY EFFECTIVE IN INDUCING MALIGNANT TUMORS OF EPITHELIAL ORIGIN ALTHOUGH THERE WERE SIGNIFICANT EXCESSES OF ANIMALS WITH MALIGNANT NON-EPITHELIAL TUMORS AND WITH BENIGN TUMORS OF BOTH EPITHELIAL AND NON-EPITHELIAL ORIGIN. AMONG THE NUMEROUS ORGANS AND TISSUES IN WHICH TUMORS DEVELOPED, THE SKIN, KIDNEY, LUNG AND ISLETS OF LANGERHANS APPEARED ESPECIALLY RESPONSIVE TO IRRADIATION. CONSISTENT RELATIONSHIPS BETWEEN INCIDENCES OF ANIMALS WITH TUMORS AND DOSE OR QUALITY OF RADIATION WERE NOT APPARENT. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD- 653 848 6/18
FLORIDA UNIV GAINESVILLE COLL OF MEDICINE

FUNCTION OF MAMMALIAN RETINA DURING X-IRRADIATION. (U)

DESCRIPTIVE NOTE: FINAL REPT., 1 JUN 65-1 DEC 66, FEB 67 33P DAWSON,WILLIAM W. ;
CONTRACT: DA-49-193-MD-2733

UNCLASSIFIED REPORT

DESCRIPTORS: (*RADIATION EFFECTS, *RETINA), X RAYS, RADIATION DOSAGE, EYE, EYE PIGMENTS, PHOTORECEPTORS, THRESHOLDS(PHYSIOLOGY), MAMMALS, ELECTRORETINOGRAPHY, VISION, ADAPTATION(PHYSIOLOGY), ELECTROPHYSIOLOGY, NERVOUS SYSTEM (U)

THE ELECTRICAL POTENTIALS ELICITED BY LIGHT AND LOW-DOSE X-IRRADIATION WERE MEASURED WITHIN THE VITREOUS BODY OF THE EYES OF RABBITS. NERVE BLOCK AGENTS AND PHARMACOLOGICAL DEGENERATION OF THE VISUAL RECEPTORS SUPPORT THE CONCLUSION THAT ALTHOUGH THE EYE IS EXCITED BY X-RAYS THE EXCITATION DOES NOT OCCUR AT THE SITE(S) RESPONSIBLE FOR LIGHT RECEPTION. THE RESULTS ARE CONSISTANT WITH NEURAL INTERACTION EFFECTS, SPECIFICALLY, INTERACTIONS WITH THE LATERAL INHIBITORY SYSTEM WHICH ENCODES RETINAL INFORMATION AND INCREASES THE SHARPNESS OF FIGURE-GROUND RELATIONSHIPS. THESE FINDINGS ARE INCONSISTANT WITH PHOTOPIGMENT BLEACHING BY X-RAYS WHICH HAS BEEN SUGGESTED AS THE BASIS FOR VISUAL EXCITATION BY IONIZING RAYS OF ALL ENERGIES. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD- 653 864 6/16 6/18
NAVAL RADIOLOGICAL DEFENSE LAB SAN FRANCISCO CALIF

ANTIBODY PLAQUE-FORMING CELLS IN UNSENSITIZED MICE: SPECIFICITY AND RESPONSE TO NEONATAL THYMECTOMY, X IRRADIATION AND PHA, (U)

JUL 67 33P HEGE,JOHN S. ;COLE,LEONARD J. ;

REPT. NO. USNRDL-TR-67-47
MONITOR: NAVMED MR005.08-0006

UNCLASSIFIED REPORT

DESCRIPTORS: (*ANTIGEN ANTIBODY REACTIONS, WHOLE BODY IRRADIATION), ANTIGENS + ANTIBODIES, BIOSYNTHESIS, HEMOLYSIS, THYMUS, EXCISION, X RAYS, IMMUNE SERUMS, AGGLUTININS, MICE, SPLEEN (U)

USING THE STANDARD ANTIBODY PLAQUE TECHNIQUE, NUMBERS OF BACKGROUND ANTI-SHEEP ERYTHROCYTE PLAQUE-FORMING CELLS (PFC'S) IN SPLEENS OF UNSENSITIZED MICE HAVE BEEN DETERMINED AFTER NEONATAL THYMECTOMY, AFTER WHOLE BODY X IRRADIATION AND AFTER INJECTION OF PHYTOHEMAGGLUTININ-M OR TYPHOID PARATYPHOID VACCINE. THE RESULTS SHOW THAT NUMBERS OF BACKGROUND PFC'S ARE NOT AFFECTED BY NEONATAL THYMECTOMY OR BY WHOLE BODY X IRRADIATION AT DOSE LEVELS KNOWN TO INHIBIT CELLULAR PROLIFERATION, BUT THAT THEY ARE SIGNIFICANTLY INCREASED (10-20 FOLD) BY PHYTOHEMAGGLUTININ, TYPHOID VACCINE AND OTHER UNRELATED ANTIGENS. SIMULTANEOUS DETERMINATIONS OF BACKGROUND ANTI-SHEEP ERYTHROCYTE AND ANTI-HORSE ERYTHROCYTE PFC'S INDICATE THAT THESE TWO POPULATIONS ARE INDEPENDENT OF ONE ANOTHER. FROM THESE AND OTHER STUDIES IT IS CONCLUDED THAT BACKGROUND PFC'S (1) PRODUCE SPECIFIC HEMOLYSIN, (2) ARE THYMUS INDEPENDENT, (3) ARE RELATIVELY LONG LIVED (AVERAGE LIFE TIME > 7 DAYS), (4) ARE NOT RELATED TO THE ANTIGEN SENSITIVE PRECURSORS OF THE PRIMARY RESPONSE PFC'S. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD- 657 609 6/18
NAVAL RADIOLOGICAL DEFENSE LAB SAN FRANCISCO CALIF

CLONAL REPOPULATION IN RETICULAR TISSUES OF X-IRRADIATED MICE: EFFECT OF DOSE AND OF LIMB-SHIELDING, (U)

AUG 67 23P NOWELL,PETER C. ;COLE, LEONARD J. ;

REPT. NO. USNRDL-TR-67-79
PROJ: NAVMED-MR005.08-0024

UNCLASSIFIED REPORT

DESCRIPTORS: (*RADIATION EFFECTS, *CHROMOSOMES), (*HEMOPOIETIC SYSTEM, RADIATION EFFECTS), WHOLE BODY IRRADIATION, RADIATION DOSAGE, TISSUES(BIOLOGY), REGENERATION, LYMPHATIC SYSTEM, THYMUS, SHIELDING, X RAYS, EXTREMITIES, GROWTH(PHYSIOLOGY), ANOMALIES, MIC(U)

CHROMOSOME STUDIES IN IRRADIATED MICE HAVE INDICATED THAT FOLLOWING HIGH SUBLETHAL WHOLE-BODY EXPOSURE REGENERATION OF THE RETICULAR TISSUES OCCURS IN A CLONAL FASHION. WITH INCREASING DOSES, FROM 100 TO 700 RADS, THESE ORGANS APPEARED TO BE REPOPULATED FROM FEWER AND FEWER SURVIVING STEM CELLS. IN A FEW INSTANCES AT THE HIGHEST DOSE, THE PROGENY OF THE SAME CELL APPARENTLY DIFFERENTIATED TO MARROW CELLS AT ONE SITE AND LYMPHOID CELLS IN OTHERS, SUGGESTIVE EVIDENCE OF A TOTIPOTENT HEMATOPOIETIC STEM CELL IN THE ADULT MOUSE. CHROMOSOME STUDIES IN MICE RECEIVING 900 RADS WITH ONE LIMB SHIELDED HAVE INDICATED REPOPULATION OF THE THYMUS AND OTHER RETICULAR TISSUES BY UNDAMAGED CELLS FROM THE SHIELDED MARROW. SUCH MARROW-DERIVED CELLS, PERHAPS BY RESTORING IMMUNOLOGICAL COMPETENCE OR BY NONIMMUNOLOGICAL CONTACT INHIBITION, COULD ACCOUNT FOR THE KNOWN EFFECT OF LIMB SHIELDING IN REDUCING THE INCIDENCE OF RADIATION-INDUCED THYMIC LYMPHOMAS. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD- 666 179 6/18 5/10
ARMY MEDICAL RESEARCH LAB FORT KNOX KY

SOME EFFECTS OF RUBY LASER IRRADIATION ON RAT PERFORMANCE. (U)

DESCRIPTIVE NOTE: INTERIM REPT.,
NOV 67 29P REVUSKY,SAMUEL H. ;
REPT. NO. USAMRL-759
PROJ: DA-3A014501B71R
TASK: 01

UNCLASSIFIED REPORT

DESCRIPTORS: (*RADIOBIOLOGY, *LASERS), BEHAVIOR, RADIATION INJURIES, ABDOMEN, DOSAGE, THRESHOLDS(PHYSIOLOGY), DEGRADATION, PERFORMANCE(HUMAN), RATS (U)

A TOTAL DOSE OF 100 JOULES DELIVERED DURING 1.8 MS AT A DENSITY OF 20 J/SQ CM ON THE MIDLINE OF THE ABDOMEN DISRUPTED PERFORMANCE IN THE PRESENCE OF THE REWARDED STIMULUS, BUT DID NOT APPEAR TO DISORGANIZE THE ANIMALS; THAT IS, THE DISCRIMINATION BETWEEN THE REWARDED STIMULUS AND THE NONREWARDED STIMULI REMAINED INTACT. THE EFFECT DISAPPEARED ON THE THIRD DAY AFTER IRRADIATION. LOWER DOSES APPEARED TO BE INEFFECTIVE, ALTHOUGH DIFFERENCES IN INDIVIDUAL SUSCEPTIBILITY TO IRRADIATION PRECLUDE A DEFINITE FINDING AT THIS POINT. A SIMILAR DOSE OF 200 JOULES TO THE HEAD APPEARED TO BE THE THRESHOLD FOR PERFORMANCE DECREMENT. THERE WAS SOME EVIDENCE THAT HEAD INJURY COULD PRODUCE A LONGER LASTING PERFORMANCE DECREMENT AND COULD DISORGANIZE BEHAVIOR IN A MANNER NOT OBTAINABLE WITH IRRADIATION OF THE ABDOMEN. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD- 666 713 6/18
CALIFORNIA UNIV LOS ANGELES SCHOOL OF MEDICINE

USE OF CHROMOSOME ABERRATIONS TO ESTIMATE X-RAY AND GAMMA-RAY DOSE TO MAN. (U)

DESCRIPTIVE NOTE: TECHNICAL REPT. SEP 65-AUG 66, DEC 67 24P NORMAN,AMOS ;SASAKI,MASAO S. ;OTTOMAN,RICHARD E. ;VEOMETT,ROBERT C. ;

CONTRACT: AF 41(609)-2944
TASK: 775702
MONITOR: SAM TR-67-112

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: CONTINUATION OF CONTRACTS AF 41(657)-391 AND AF 41(609)-1909.

DESCRIPTORS: (*RADIOBIOLOGY, CHROMOSOMES), (*CHROMOSOMES, ANOMALIES), RADIATION DOSAGE, X RAYS, GAMMA RAYS, LYMPHOCYTES, RADIATION EFFECTS, SAMPLING, CULTURE MEDIA (U)

THE FREQUENCY OF CHROMOSOME ABERRATIONS IN LYMPHOCYTES TAKEN FROM THE PERIPHERAL BLOOD PROVIDES A USEFUL MEASURE OF ABSORBED DOSE. THE ESTIMATION OF DOSE IS AFFECTED BY TIME IN CULTURE OF THE LYMPHOCYTES, BY SAMPLING ERROR AND SAMPLING TIME, AND BY SIZE, RATE, DISTRIBUTION, AND QUALITY OF RADIATION DOSE. DATA ON THE EFFECT OF THESE VARIABLES ARE PRESENTED. DOSE IS ESTIMATED FOR FIVE PEOPLE ACCIDENTALLY EXPOSED TO IONIZING RADIATION. FOUR APPENDIXES GIVE A DETAILED ACCOUNT OF OPTIMAL TECHNICS FOR MAKING CHROMOSOME PREPARATIONS, THE YIELDS OF ABERRATIONS AS A FUNCTION OF DOSE IN 50-HOUR AND 72-HOUR CULTURES, AND THE YIELD OF ACENTRIC FRAGMENTS PER DICENTRIC. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD- 668 619 6/18
TUFTS UNIV MEDFORD MASS DEPT OF BIOLOGY

THE ACTION OF MICROWAVE RADIATION ON THE EYE, (U)

68 17P CARPENTER,RUSSELL L. ;VAN UMMERSEN,CLAIR A. ;
CONTRACT: AF 41(657)-86, PHS-GM-09495

UNCLASSIFIED REPORT
AVAILABILITY: PUBLISHED IN THE JOURNAL OF MICROWAVE POWER, P3-20 N.D.
SUPPLEMENTARY NOTE: PRESENTED AT SYMPOSIUM ON MICROWAVE POWER (1967), STANFORD UNIV., MARCH 30, 1967.

DESCRIPTORS: (*RADIOBIOLOGY, *MICROWAVES), (*RADIATION INJURIES, *EYE), PATHOLOGY, THRESHOLDS(PHYSIOLOGY), TISSUES(BIOLOGY), RADIATION HAZARDS, EXPOSURE(PHYSIOLOGY) (U)

MICROWAVE POWER CAN CAUSE FORMATION OF OPACITIES IN THE LENS OF THE RABBIT EYE EXPOSED TO CONTINUOUS WAVE OR PULSED WAVE RADIATION AT FREQUENCIES FROM 2.45 GHZ TO 10 GHZ. WHEN THE EYE IS IRRADIATED IN A FREE FIELD, THE OPACITY (CATARACT) DEVELOPS IN THE POSTERIOR PART OF THE LENS; IN LOCATION, FORM AND GROWTH, IT RESEMBLES CATARACTS CAUSED BY IONIZING RADIATION. WHEN THE EYE IS IRRADIATED AT THE SAME FREQUENCIES AS PART OF A 'CLOSED' WAVEGUIDE SYSTEM, THE CATARACT DEVELOPS IN THE ANTERIOR PART OF THE LENS, LIKE THOSE CAUSED BY INFRARED RADIATION. ALTHOUGH FOR EVERY POWER LEVEL THERE IS A MINIMAL EXPOSURE PERIOD WHICH WILL CAUSE AN OPACITY, REPEATED SHORTER EXPOSURES CAN HAVE A CUMULATIVE EFFECT, THE MAIN DETERMINING FACTOR BEING THE TIME INTERVAL BETWEEN SUCCESSIVE EXPOSURES. EXPERIMENTAL EVIDENCE SUGGESTS THAT MICROWAVE CATARACTS ARE NOT SIMPLY A RESULT OF MICROWAVE HEATING BUT ARE CAUSED BY SOME OTHER PROPERTY OF THE RADIATION. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD- 668 686 6/18
FLORIDA UNIV GAINESVILLE

CELLULAR RESPONSE TO RADIATION. (U)

DESCRIPTIVE NOTE: FINAL REPT. 1 APR 66-31 MAR 67,
MAR 67 23P CROMROY,HARVEY ;
REPT. NO. TRC-67-40
CONTRACT: N00228-66-C-1103
MONITOR: OCD 3146A

UNCLASSIFIED REPORT

DESCRIPTORS: (*CELLS(BIOLOGY), *RADIOBIOLOGY), RADIATION EFFECTS, MAMMALS, INSECTS, PLANTS(BOTANY), CHROMOSOMES, RADIATION TOLERANCE, SURVIVAL(PERSONNEL), DEOXYRIBONUCLEIC ACIDS, X RAYS, GAMMA RAYS, LEAST SQUARES METHOD, WHOLE BODY IRRADIATION, RADIATION DOSAGE (U)

THE RADIOSENSITIVITY AND NUCLEAR VOLUMES WERE DETERMINED FOR SEVEN SPECIES OF MAMMALS, EIGHT SPECIES OF INSECTS, AND ONE SPECIES OF PLANT, ARAUCARIA EXCELSA. THE FOLLOWING CELLS WERE SELECTED AS INDICATORS OF RADIATION SENSITIVITY: (1) MAMMALS -- COLUMNAR EPITHELIAL CELLS OF THE DUODENAL INTESTIONAL MUCOSA; (2) INSECTS -- ENDOTHELIAL CELLS LINING THE MID GUT; (3) PLANTS -- THE NON-DIVIDING, INTERPHASE NUCLEI OF THE TUNICA AND OUTER CORPUS CELL LAYER OF THE TERMINAL SHOOT MERISTEM. THE MAMMALS WERE WHOLE-BODY IRRADIATED WITH A 1 MVP X-RAY UNIT; THE INSECTS WHOLE-BODY IRRADIATED WITH A 300 KVP X-RAY UNIT; AND THE PLANT, TOTALLY IRRADIATED WITH COBALT 60 GAMMA RAYS. THE INTERPHASE CHROMOSOME VOLUME (NUCLEAR VOLUME DIVIDED BY THE DIPLOID NUMBER OF CHROMOSOMES) FOR EACH SPECIES WAS DETERMINED AND PLOTTED AGAINST ITS RESPECTIVE LD50. THE MAMMALIAN SPECIES HAD A POSITIVE SLOPE WHEREAS THE INSECT SPECIES HAD A NEGATIVE SLOPE. THE PLANT, ARAUCARIA, WHEN PLOTTED WITH THE DATA OBTAINED BY CAPELLA AND CONGER (JUNE, 1966) ALSO HAD A NEGATIVE SLOPE. THE POSITIVE SLOPE OBTAINED WITH MAMMALIAN SPECIES INDICATED THAT THE LARGER THE INTERPHASE NUCLEAR VOLUME, THE LESS SENSITIVE THE ANIMAL WAS TO IONIZING RADIATION. THE INVERSE OF THIS WAS TRUE FOR PLANTS AND INSECTS. IT WAS CONCLUDED THAT A RELATIONSHIP BETWEEN LD50 AND INTERPHASE NUCLEAR VOLUME DOES EXIST AND WOULD BE VALUABLE AS A PREDICTOR. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD- 669 144 6/1 6/18
INDIANA UNIV BLOOMINGTON DEPT OF CHEMISTRY

REDUCTION AND ALKYLATION OF IMMUNOGLOBULINS FROM NORMAL, IRRADIATED AND SPLENECTOMIZED RABBITS, (U)

67 4P KNIGHT,KATHERINE L. ;
CONTRACT: NONR-3104(00), PHS-GM-01852

UNCLASSIFIED REPORT
AVAILABILITY: PUBLISHED IN PROCEEDINGS OF THE SOCIETY FOR EXPERIMENTAL BIOLOGY AND MEDICINE, V124 P1122-4 1967.

DESCRIPTORS: (*GAMMA GLOBULIN, ALKYLATION), MOLECULAR STRUCTURE, ELECTROPHORESIS, REDUCTION(CHEMISTRY), SPLEEN, EXCISION, RADIATION EFFECTS, X RAYS, IMMUNITY, RADIATION DOSAGE, ANTIGENS + ANTIBODIES (U)

THE L CHAIN PATTERNS OF REDUCED AND ALKYLATED GAMMA-GLOBULIN PREPARATIONS FROM SPLENECTOMIZED, IRRADIATED AND NORMAL RABBITS WERE COMPARED BY STARCH GEL ELECTROPHORESIS. ANIMALS IRRADIATED WITH THEIR SPLEEN SHIELDED PRODUCED GAMMA-GLOBULIN WITH L CHAINS SIMILAR TO THOSE OF SPLENECTOMIZED AND NORMAL RABBITS. THUS, THE L CHAINS FORMED IN THE SPLEEN APPARENTLY DO NOT DIFFER ELECTROPHORETICALLY FROM THE L CHAINS OF GAMMA-GLOBULIN FORMED IN OTHER ORGANS. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD- 669 787 6/15 6/18
NAVAL RADIOLOGICAL DEFENSE LAB SAN FRANCISCO CALIF

CHEMICAL RADIOPROTECTION OF HEMOPOIETIC COLONY-FORMING CELLS: COMPARATIVE EFFECT OF AET, ANOXIA AND URETHAN, (U)

APR 68 24P COLE,L. J. ;DAVIS,W. E. , JR;

REPT. NO. USNRDL-TR-68-44
PROJ: NAVMED-MR005-08-0022

UNCLASSIFIED REPORT

DESCRIPTORS: (*RADIOPROTECTIVE AGENTS, HEMOPOIETIC SYSTEM), BONE MARROW, SPLEEN, RADIATION DOSAGE, ANOXIA, MORTALITY RATES, IN VIVO ANALYSIS, X RAYS, WHOLE BODY IRRADIATION (U)
IDENTIFIERS: AET, URETHAN (U)

THE HEMOPOIETIC COLONY-FORMING UNIT (CFU) TECHNIQUE OF TILL AND MCCULLOCH WAS EMPLOYED TO TEST THE RADIOPROTECTIVE EFFECT OF AET, ANOXIA AND URETHAN ON MARROW CELLS IRRADIATED IN VIVO. FOR AET AND ANOXIA, A DOSE-REDUCTION FACTOR OF 1.9 TO 2.1 WAS FOUND. SINCE THE MARROW CELLS WERE ASSAYED FOR CFU CONTENT IMMEDIATELY AFTER IRRADIATION OF THE DONOR, THE OBSERVED EFFECT CAN BE INTERPRETED AS A 'TRUE' RADIATION DOSE REDUCTION. BY CONTRAST, URETHAN INJECTION DID NOT INCREASE THE SURVIVAL OF MARROW CFU ASSAYED IMMEDIATELY AFTER WHOLE-BODY X IRRADIATION. HOWEVER, URETHAN AS WELL AS AET, AFFORDED RADIOPROTECTION OF ENDOGENOUS CFU CONTENT OF SPLEEN AND BONE MARROW, BUT NOT OF ENDOGENEOUS SPLEEN COLONY COUNT. IT IS CONCLUDED THAT THE MECHANISM OF RADIOPROTECTION BY URETHAN IS FUNDAMENTALLY DIFFERENT FROM THAT OF AET OR ANOXIA. THE DATA ALSO SUGGEST THAT MOUSE BONE MARROW CFU CONTENT, ASSAYED IMMEDIATELY AFTER IRRADIATION, DOES NOT NECESSARILY CORRELATE WITH ANIMAL SURVIVAL. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD- 671 054 6/18
NAVAL RADIOLOGICAL DEFENSE LAB SAN FRANCISCO CALIF

EARLY ALVEOLAR CELL MITOTIC ACTIVITY AND PULMONARY TUMOR INCIDENCE IN URETHAN TREATED X-IRRADIATED MICE. (U)

APR 68 17P BIRDWELL,THOMAS R. ;COLE, LEONARD J. ;
REPT. NO. USNRDL-TR-68-51
PROJ: NAVMED MR005.08-0025

UNCLASSIFIED REPORT

DESCRIPTORS: (*CANCER, *LUNG), (*RADIATION EFFECTS, NEOPLASMS), MITOSIS, X RAYS, RADIATION DOSAGE, INHIBITION (U)
IDENTIFIERS: URETHAN (U)

GROUPS OF YOUNG ADULT LAF1 MICE RECEIVED A SINGLE INTRAPERITONEAL INJECTION OF URETHAN (1 MG/G BODY WEIGHT) GIVEN EITHER ALONE, BEFORE (1 OR 7 DAYS) OR AFTER (7 DAYS) A 300 R WHOLE BODY DOSE OF X RADIATION. THE EFFECTS OF THESE TREATMENTS ON ALVEOLAR CELL MITOTIC ACTIVITY DURING THE SUBSEQUENT 15 DAYS, AND ON PULMONARY TUMOR INCIDENCE AT 13 TO 24 WEEKS WERE DETERMINED. THE MICE RECEIVING URETHAN ONLY, ALL SHOWED LUNG TUMORS AT 24 WEEKS. THE GROUPS IRRADIATED PRIOR TO OR AFTER URETHAN INJECTION SHOWED SIGNIFICANT DECREASES IN THE NUMBER OF TUMORS PER MOUSE, AS WELL AS A DECREASE IN MITOTIC ACTIVITY 15 DAYS POSTTREATMENT. THE SUPPRESSION IN BOTH THESE PARAMETERS WAS MORE PRONOUNCED WHEN X RADIATION PRECEDED URETHAN TREATMENT BY 1 WEEK, THAN WHEN IT WAS ADMINISTRATED 1 WEEK AFTER URETHAN. THE RESULTS INDICATE THAT AT THIS MODERATE DOSE OF X RADIATION (300 R) THERE IS AN INHIBITORY EFFECT ON URETHAN LUNG TUMORIGENESIS. IT IS SUGGESTED THAT X IRRADIATED ALVEOLAR CELLS UNDER THESE EXPERIMENTAL CONDITIONS ARE RELATIVELY RESISTANT TO THE EFFECTS OF URETHAN, AS REFLECTED BOTH IN MITOTIC ACTIVITY, AND IN SUBSEQUENT TUMOR PRODUCTION. THE THEORETICAL BASES FOR THESE OBSERVATIONS ON LUNG TUMORIGENESIS ARE BRIEFLY DISCUSSED. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD- 671 436 6/18
LIBRARY OF CONGRESS WASHINGTON D C AEROSPACE TECHNOLOGY DIV

SOVIET RADIOBIOLOGY. (U)

DESCRIPTIVE NOTE: SURVEYS OF FOREIGN SCIENTIFIC AND TECHNICAL LITERATURE,
JUN 68 94P FORTUNATOW,E. ;
REPT. NO. ATD-68-105-108-9

UNCLASSIFIED REPORT

DESCRIPTORS: (*RADIOBIOLOGY, ABSTRACTS), SPACE FLIGHT, RADIATION EFFECTS, RADIOPROTECTIVE AGENTS, GENETICS, ELECTROMAGNETIC RADIATION, MAGNETIC FIELDS, ELECTRIC FIELDS, RADIATION INJURIES, SHIELDING, ELECTROPHYSIOLOGY, RADIATION DOSAGE, USSR (U)

CONTENTS: SPACE ORIENTED RADIOBIOLOGY; GENETIC ASPECTS OF RADIOBIOLOGY; RADIOPROTECTIVE MEASURES; EFFECTS OF RADIATION COMBINED WITH OTHER SPACEFLIGHT FACTORS; NON SPACE-ORIENTED RADIOBIOLOGY; BIOLOGICAL EFFECTS OF MAGNETIC, ELECTROMAGNETIC, AND ELECTRIC FIELDS. (U)

AD-A047 300 DEFENSE DOCUMENTATION CENTER ALEXANDRIA VA F/G 6/18
RADIOBIOLOGY.(U)
NOV 77

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 671 806 6/5
NAVAL RADIOLOGICAL DEFENSE LAB SAN FRANCISCO CALIF

ONTOGENY OF THE MOUSE IMMUNE SYSTEM: IMMUNOGLOBULIN PRODUCING CELLS, (U)

MAY 68 16P TYAN,MARVIN L. ;HERZENBERG, LEONARD A. ;
REPT. NO. USNRDL-TR-68-57
PROJ: MR005.08-0023

UNCLASSIFIED REPORT

DESCRIPTORS: (*EMBRYOS, IMMUNITY), (*GAMMA GLOBULIN, EMBRYOS), THYMUS, EXCISION, CELLS(BIOLOGY), LYMPHOCYTES, TISSUES(BIOLOGY), ANTIGENS + ANTIBODIES, X RAYS, RADIATION DOSAGE, MEMBRANES(BIOLOGY) (U)

WHEN MOUSE FETAL TISSUES OF VARIOUS AGES WERE TRANSFERRED TO ALLOGENEIC OR CONGENIC HOSTS WHICH DIFFERED FROM THE IMMUNOGLOBULIN LOCUS IG 1, IT WAS FOUND THAT CELLS WHICH HAVE THE POTENTIAL TO DIFFERENTIATE INTO IMMUNOGLOBULIN PRODUCING CELLS APPEAR IN THE YOLK SAC, LIVER AND CAUDAL HALF OF THE EMBRYO BY THE 9TH DAY OF GESTATION. LATE IN PREGNANCY THESE CELLS ARE FOUND IN THE THYMUS, GUT, LUNG, SPLEEN, FEMUR AND PERIPHERAL BLOOD. CERTAIN OF THE DATA SUGGEST THAT IMMUNOGLOBULIN PRODUCING CELL LINES AND THOSE WHICH MEDIATE CELL-BOUND IMMUNE RESPONSE ARISE EARLY INGESTATION AS SEPARATE CELL POPULATIONS. FURTHER, IT WAS SHOWN THAT IMMUNOGLOBULIN SYNTHESIS PER SE IS INDEPENDENT OF THE THYMUS. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD- 672 621 6/18
WALTER REED ARMY INST OF RESEARCH WASHINGTON D C

IN VIVO DOSIMETRY BY ELECTRON SPIN RESONANCE SPECTROSCOPY, (U)

DEC 67 6P BRADY,JOHN M. ;AARESTAD, NORMAN O. ;SWARTZ,HAROLD M. ;

UNCLASSIFIED REPORT
AVAILABILITY: PUB. IN HEALTH PHYSICS, V15 P43-47 1968.
SUPPLEMENTARY NOTE: REVISION OF REPORT DATED 13 OCT 67.

DESCRIPTORS: (*ELECTRON PARAMAGNETIC RESONANCE, RADIATION MEASURING INSTRUMENTS), (*RADIATION INJURIES, IN VIVO ANALYSIS), TISSUES(BIOLOGY), RADIATION DOSAGE, TEETH, X RAYS, GAMMA RAYS, BONES, NAILS(TISSUES), HEALTH PHYSICS (U)

SEVERAL TISSUES, ESPECIALLY HARD TISSUES, SHOWED PERSISTENT ELECTRON SPIN RESONANCES FOLLOWING IN VIVO OR IN VITRO IRRADIATIONS. THE RESONANCES HAD A LINEAR RELATION TO DOSE. DOSE MEASUREMENTS WERE MADE IN TEETH AT LESS THAN 100 RADS OF 60CO RADIATION. THE METHOD APPEARS TO BE APPLICABLE FOR DOSIMETRY OF ACCIDENTAL IRRADIATIONS, ESPECIALLY X- OR GAMMA-RAY EXPOSURES. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD- 672 819 6/18

NORTHROP CORPORATE LABS HAWTHORNE CALIF LIFE SCIENCES LABS

FLUOROMETRIC DETECTION OF BIOLOGIC CHANGES IN IRRADIATED LABORATORY ANIMALS. (U)

DESCRIPTIVE NOTE: FINAL REPT. OCT 66-NOV 67, MAY 68 30P DEMETRIOU,JAMES A. ;BEATTIE, JOHN M. ;

CONTRACT: F41609-67-C-0036

PROJ: AF-7757

TASK: 775702

MONITOR: SAM TR-68-43

UNCLASSIFIED REPORT

DESCRIPTORS: (*RADIOBIOLOGY, LABORATORY ANIMALS), RADIATION EFFECTS, SUBLETHAL DOSAGE, WHOLE BODY IRRADIATION, URINE, FLUORESCENCE, CHROMATOGRAPHIC ANALYSIS, PRIMATES, RODENTS (U)

THE EXCRETION OF FLUORESCENT PRODUCTS BY RODENTS AND PRIMATES AFTER EXPOSURE TO WHOLE-BODY SUBLETHAL 60CO GAMMA IRRADIATION WAS INVESTIGATED. GEL FILTRATION CHROMATOGRAPHY AND THIN-LAYER CHROMATOGRAPHY WERE USED TO FRACTIONATE AND QUANTITATE RADIATION-RESPONSIVE FLUORESCENT URINARY PRODUCTS. A MAJOR ADVANCEMENT IN QUANTITATING FLUORESCENT URINE PRODUCTS WAS ACHIEVED BY THE FLUORESCENCE-SCANNING OF THIN-LAYER CHROMATOGRAMS. CERTAIN RADIATION DOSE-RESPONSE RELATIONSHIPS WERE MEASURABLE IN TWO MAJOR FLUORESCENT FRACTIONS FROM GEL FILTRATION CHROMATOGRAPHY AND THIN-LAYER CHROMATOGRAPHY OF RODENT AND PRIMATE URINE EXTRACTS WITHIN TWENTY-FOUR HOURS POSTIRRADIATION. SPECIES VARIATIONS BETWEEN RODENTS AND PRIMATES MAY ACCOUNT FOR DIFFERENT RESPONSES OF FLUORESCENT URINARY PRODUCTS AFTER IRRADIATION. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD- 673 584 6/18
SCHOOL OF AEROSPACE MEDICINE BROOKS AFB TEX

ACUTE SOMATIC EFFECTS IN PRIMATES OF PROTONS TO 400 MEV, (U)

67 9P LINDSAY, IAN R. ; DALRYMPLE, GLENN V. ;
REPT. NO. SAM-TR-65-284
PROJ: AF-7757
TASK: 775704

UNCLASSIFIED REPORT
AVAILABILITY: PUB. IN RADIATION RESEARCH, SUPPL 7 P330-335 1967.

DESCRIPTORS: (*PROTONS, *RADIOBIOLOGY), RADIATION EFFECTS, RADIATION DOSAGE, MORTALITY RATES, DOSE RATE, PENETRATION, TISSUES(BIOLOGY), PRIMATES (U)

THE RESULTS OF STUDIES WITH PROTONS THAT PENETRATE ONLY THE SUPERFICIAL TISSUES AND PROTONS THAT HAVE SUFFICIENT RANGE TO PENETRATE THE ENTIRE BODY THICKNESS OF THE PRIMATE ARE DISCUSSED. THE RBE'S OF SEVERAL ENERGIES OF PROTONS AND THE ETIOLOGY OF DEATHS AFTER IRRADIATION ARE CONSIDERED. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. ZOM07

AD- 676 008 6/18
LIBRARY OF CONGRESS WASHINGTON D C AEROSPACE TECHNOLOGY DIV

DEVELOPMENTS IN RADIATION. (U)

DESCRIPTIVE NOTE: SURVEYS OF FOREIGN SCIENTIFIC AND TECHNICAL LITERATURE,
AUG 68 248P SCHIROKI,L. L. ;
REPT. NO. ATD-68-126

UNCLASSIFIED REPORT

DESCRIPTORS: (*RADIOBIOLOGY, REPORTS), RADIATION HAZARDS, SPACE FLIGHT, COSMIC RAYS, SAFETY, RADIATION EFFECTS, RADIOPROTECTIVE AGENTS, HEMOPOIETIC SYSTEM, RADIATION TOLERANCE, RADIATION INJURIES, RADIATION SICKNESS, REVIEWS, USSR (U)

THE REPORT REFLECTS SOVIET ACHIEVEMENTS, CAPABILITIES, TRENDS, AND PROBLEMS IN RADIATION DETECTION, PROTECTION AND TREATMENT, BASED ON SOVIET AND EAST EUROPEAN OPEN LITERATURE FROM 1964 TO DATE. THE DOCUMENT IS GROUPED INTO 4 PARTS: RADIATION UNDER SPACEFLIGHT CONDITIONS; RADIATION BIOLOGICAL EFFECTS; RADIATION PROTECTIVE AGENTS; AND PROPHYLAXIA AND THERAPY OF RADIATION INJURIES. (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD- 678 365 6/3 6/18
ARMED FORCES RADIOBIOLOGY RESEARCH INST BETHESDA MD

ACUTE MORTALITY OF MICE AND RATS EXPOSED TO MIXED GAMMA-NEUTRON RADIATIONS OR TO X RAYS. (U)

DESCRIPTIVE NOTE: SCIENTIFIC REPT.,
APR 68 30P STRIKE,T. A. ;SEIGNEUR,L. J. ;STANLEY,R. E. ;
REPT. NO. AFRRI-SR68-6

UNCLASSIFIED REPORT

DESCRIPTORS: (*RODENTS, RADIATION EFFECTS), (*RADIATION EFFECTS, *MORTALITY RATES), WHOLE BODY IRRADIATION, GAMMA RAYS, NEUTRONS, X RAYS, MICE, RATS, DOSE RATE, SURVIVAL(PERSONNEL), LETHAL DOSAGE, FAST NEUTRONS (U)

MORTALITY DATA FOR C57BL MICE AND SPRAGUE-DAWLEY RATS WERE COLLECTED AS A PART OF THE PROGRAM TO BIOLOGICALLY CHARACTERIZE AFRRI-TRIGA REACTOR RADIATIONS AND TO PROVIDE REFERENCE INFORMATION FOR FUTURE STUDIES. UNILATERAL WHOLE BODY EXPOSURES TO MIXED GAMMA-NEUTRON RADIATIONS FROM THE REACTOR OR TO 250 KVP X RAYS WERE CARRIED OUT OVER A RANGE OF MIDLINE TISSUE DOSES FROM 370 TO 875 RADS. THE 30-DAY MEDIAN LETHAL DOSES WERE CALCUALTED TO BE 589 AND 432 RADS FOR MICE EXPOSED TO THE X RAYS AND TO THE REACTOR RADIATIONS, RESPECTIVELY. THE CORRESPONDING VALUES FOR THE RAT EXPOSURES WERE 740 AND 434 RADS. USING THE LD50/30 VALUES AS THE END POINTS FOR COMPARISON, THE REACTOR RADIATIONS WERE 1.4 AND 1.7 TIMES MORE EFFECTIVE IN MICE AND RATS, RESPECTIVELY, THAN WERE THE X RAYS. THE SURVIVAL TIMES OF THE MICE AND RATS EXPOSED TO REACTOR RADIATIONS WERE SIGNIFICANTLY LESS THAN THOSE OF THE ANIMALS EXPOSED TO SIMILAR DOSES OF X RAYS. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD- 680 403 6/18 6/16
SCHOOL OF AEROSPACE MEDICINE BROOKS AFB TEX

MEASURING IRON METABOLISM IN HEMATOPOIETIC CENTERS USING 59FE IN THE PRESENCE OF 51CR AND 125I. (U)

DESCRIPTIVE NOTE: REPT. FOR JAN-MAR 68,
SEP 68 12P STRONG,GUY M. ;LOGSDON,
DONALD F. ;GREEN,JAMES F. ;
REPT. NO. SAM-TR-68-92
PROJ: AF-7755
TASK: 775502

UNCLASSIFIED REPORT

DESCRIPTORS: (*IRON, *METABOLISM), (*RADIOBIOLOGY, METABOLISM), LIVER, SPLEEN, HEMOGLOBIN, RADIOACTIVE ISOTOPES, CHROMIUM, IODINE, SCINTILLATION COUNTERS (U)

THE 59FE CONCENTRATION IN THE HEMATOPOIETIC CENTERS (SACRUM, LIVER, AND SPLEEN) CAN BE ACCURATELY AND REPRODUCIBLY DETERMINED WITH A RATE METER, A PHOTOMULTIPLIER PROBE, AND A SCINTILLATION CRYSTAL DETECTION SYSTEM. WHEN THE THREE ISOTOPES 51CR, 125I, AND 59FE ARE PRESENT, A 10 MM. LEAD FILTER SCREENS OUT ESSENTIALLY ALL OF THE CHROMIUM AND IODINE ISOTOPE ACTIVITY WHILE ALLOWING 60% OF THE 59FE ACTIVITY TO PASS. THE USE OF A CONSTANT STANDARD AND THE CALCULATION OF THE R FACTOR (AREA OF RADIATION SITE/AREA OF STANDARD) MAKES DECAY CORRECTION UNNECESSARY. SINCE IRON METABOLISM IS NORMALLY MEASURED AS PART OF A LARGER STUDY OF ERYTHROKINETICS AND BLOOD PARAMETERS, THIS TECHNIC ALLOWS TWO OR MORE ISOTOPE STUDIES OF HEMATOPOIETIC CENTERS TO BE CONDUCTED SIMULTANEOUSLY. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD- 680 611 6/18
NAVAL RADIOLOGICAL DEFENSE LAB SAN FRANCISCO CALIF

EARLY INCREASE IN THE MISCIBLE DEOXYCYTIDINE POOL IN RATS AFTER X IRRADIATION. (U)

NOV 68 20P GURI,CHARLES D. ;MINOT, HENRY J. ;SWINGLE,KARL F. ;
REPT. NO. USNRDL-TR-68-138
PROJ: MR005.08-0022

UNCLASSIFIED REPORT

DESCRIPTORS: (*WHOLE BODY IRRADIATION, RATS), (*PYRIMIDINES, METABOLISM), X RAYS, LABELED SUBSTANCES, HALF LIFE, BLOOD PLASMA, BLOOD CHEMISTRY, RADIATION EFFECTS (U)
IDENTIFIERS: CYTIDINE, DEOXYCYTIDINE (U)

INTRAPERITONEAL AND INTRAVENOUS INJECTIONS OF TRACER QUANTITIES OF 3H- OR 14C-LABELED DEOXYCYTIDINE (CDR) WERE USED TO INVESTIGATE THE BIOLOGIC HALF-LIFE, THE MISCIBLE POOL SIZE, AND THE TURNOVER RATE OF CDR IN NORMAL AND X-IRRADIATED RATS. THE SPECIFIC ACTIVITY OF HIGHLY PURIFIED CDR ISOLATED FROM BLOOD PLASMA SAMPLES TAKEN AT VARIOUS TIMES AFTER INJECTION OF THE TRACER CDR WAS USED AS THE BASIS FOR CALCULATING THESE VALUES. THE MEAN VALUES OBSERVED FOR NORMAL RATS WERE: BIOLOGIC HALF-LIFE 116 MINUTES, MISCIBLE POOL 790 MICRO G/RAT (100 TO 180 G), AND TURNOVER RATE 7.0 MG/24 HOURS/RAT. THE MISCIBLE POOL OF CDR APPEARED TO BE NON-UNIFORM, WITH THE INTRACELLULAR CONCENTRATION APPRECIABLE HIGHER THAN THE GENERAL BODY-WATER CONCENTRATION. ABOUT ONE-THIRD OF THE TOTAL MISCIBLE CDR APPEARED TO BE INTRACELLULAR. AFTER RELATIVELY LOW DOSES OF WHOLE-BODY X-IRRADIATION (25 TO 100 RADS), THERE WERE ALTERATIONS IN THE TURNOVER KINETICS OF CDR, BUT THE PRESENCE OF NON-STEADY STATE MADE COMPUTATION OF THE ABOVE THREE VALUES IMPOSSIBLE. HOWEVER, THE DATA ARE FULLY CONSISTENT WITH AN INCREASE IN THE MISCIBLE POOL SIZE OF CDR, OCCURRING AS EARLY AS 1 HOUR POSTIRRADIATION. THE DATA DO NOT PROVIDE INFORMATION AS TO THE MECHANISM FOR THIS APPARENT INCREASE. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD- 681 465 6/18
SCHOOL OF AEROSPACE MEDICINE BROOKS AFB TEX

EARLY EFFECTS OF 150-MEV PROTON IRRADIATION IN RHESUS MONKEYS. (U)

DESCRIPTIVE NOTE: REPT. FOR JUL-NOV 67,
SEP 68 15P TRAYNOR,JOSEPH E. ;SIEGAL, ALAN M. ;
REPT. NO. SAM-TR-68-87
PROJ: AF-7757
TASK: 775704

UNCLASSIFIED REPORT

DESCRIPTORS: (*RADIOBIOLOGY, *RADIATION EFFECTS), MONKEYS, PROTON BEAMS, MORTALITY RATES, HEMATOLOGY, SURVIVAL(PERSONNEL), LETHAL DOSAGE, TEST METHODS (U)
IDENTIFIERS: COMPARISON (U)

RHESUS MONKEYS WERE EXPOSED TO 150-MEV PROTON IRRADIATION AT 11 RADS PER MINUTE. AFTER EXPOSURE, THE ANIMALS WERE OBSERVED FOR CLINICAL CHANGES AND MORTALITY. HEMATOLOGIC STUDIES WERE PERFORMED UP TO 80 DAYS AFTER EXPOSURE. ON THE BASIS OF ACUTE MEDIAN LETHAL DOSE, MEAN SURVIVAL TIME, CLINICAL OBSERVATIONS, AND BLOOD CELL DEPRESSION, AN RBE OF UNITY WAS ASSIGNED WHEN COMPARING THE 150-MEV PROTON EXPOSURES WITH 2-MEV X-RAY EXPOSURES. A DECREASE IN MEDIAN LETHAL DOSE WAS NOTED WITH LOWERED DOSE RATE WHEN PROTON EXPOSURES AT 57 RADS PER MINUTE AND 11 RADS PER MINUTE WERE COMPARED.
(AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD- 683 364 6/18
ARMY BIOLOGICAL LABS FREDERICK MD

RADIOBIOLOGY IN THE USSR; UTILIZATION OF RADIATION AND RADIOISOTOPES IN BIOLOGY AND MEDICINE IN THE USSR. (U)

JUL 68 18P
REPT. NO. TRANS-325

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: TRANS. OF RUSSIAN LANGUAGE ARTICLES.

DESCRIPTORS: (*RADIOBIOLOGY, USSR), NUCLEAR RADIATION, RADIOACTIVE ISOTOPES, BLOOD COAGULATION, BLOOD TRANSFUSION, BLOOD DISEASES, CHEMICAL REACTIONS, SYNTHESIS(CHEMISTRY), RADIATION EFFECTS (U)

CONTENTS: HEMATOLOGICAL RESEARCH; CHEMOSYNTHESIS; HYPOTHERMY; RADIATION. (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD- 684 213 6/18 6/16
DEFENCE CHEMICAL BIOLOGICAL AND RADIATION ESTABLISHMENT
OTTAWA (ONTARIO)

THE EFFECT OF RADIOPROTECTIVE AGENTS ON
ERYTHROPOIESIS IN IRRADIATED MICE, (U)

AUG 68 8P VITTORIO,P. V. ;WATKINS,E.
A. ;DZIUBALO-BLEHM,S. ;
REPT. NO. DCBRE-568

UNCLASSIFIED REPORT
AVAILABILITY: PUB. IN CANADIAN JOURNAL OF
PHYSIOLOGY AND PHARMACOLOGY, V47 N1 P65-71 1969. NO
COPIES FURNISHED.

DESCRIPTORS: (*RADIOPROTECTIVE AGENTS, *ERYTHROCYTES),
RADIATION EFFECTS, PROTECTION, SURVIVAL(PERSONNEL),
MICE, TOXINS AND ANTITOXINS, HEMOPOIETIC SYSTEM,
SEROTONIN, IRON, BLOOD, SPLEEN, LIVER, CANADA (U)

THE RADIOIRON TEST (I.E. 59FE UPTAKE BY BLOOD,
SPLEEN, AND LIVER) WAS USED TO EVALUATE THE DEGREE
OF PROTECTION (1 DAY AFTER IRRADIATION) AND
EFFECT ON RECOVERY (7 DAYS AFTER IRRADIATION) OF
THE ERYTHROPOIETIC SYSTEM WHEN RADIOPROTECTIVE AGENTS
WERE ADMINISTERED. IN BLOOD, SPLEEN, AND LIVER,
AET ADMINISTERED PRIOR TO IRRADIATION CAUSED A
DECREASED RADIATION EFFECT ON 59FE UPTAKE 1 DAY
AFTER IRRADIATION, AND A SUBSEQUENT PARALLEL RETURN
WITH THE IRRADIATED NONPROTECTED GROUP TO THE CONTROL
VALUE. THIS INDICATED THAT THE EARLY RECOVERY BY
THE PROTECTED GROUP WAS PROBABLY DUE TO LESS INITIAL
DAMAGE. THE AMOUNT OF PROTECTION AFFORDED THE
ERYTHROPOIETIC SYSTEM BY SULFHYDRYL AGENTS WAS IN
GOOD AGREEMENT WITH IRRADIATION SURVIVAL STUDIES AND
INDICATED THAT A GOOD SYLFHYDRYL RADIOPROTECTIVE
AGENT PROVIDED GOOD PROTECTION, AND A POOR SULFHYDRYL
RADIOPROTECTIVE AGENT PROVIDED POOR PROTECTION TO THE
ERYTHROPOIETIC SYSTEM. THUS THE RADIOIRON TEST IS
A GOOD METHOD TO EVALUATE SULFHYDRYL COMPOUNDS AS
RADIOPROTECTIVE AGENTS. ENDOTOXIN DEMONSTRATED
POOR CORRELATION BETWEEN THE EARLY (1 DAY)
ERYTHROPOIETIC EFFECT AND SURVIVAL IN IRRADIATED
MICE, BUT RECOVERY STUDIES (7DAYS) SHOWED MUCH
BETTER AGREEMENT. THE BIOLOGICAL AMINE SEROTONIN
PRODUCED POORER INITIAL PROTECTION TO THE
ERYTHROPOIETIC SYSTEM AND SLOWER RECOVERY THAN AET
EVEN THOUGH THE DOSE REDUCTION FACTOR OF EACH WAS
COMPARABLE. SEROTONIN MUST, THEREFORE, PROTECT
OTHER SYSTEMS WHICH THEN CONTRIBUTE TO THE EVENTUAL
RECOVERY OF THE ERYTHROPOIETIC SYSTEM, AND SURVIVAL.(U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD- 685 373 6/18 9/3 6/12
ARMY BIOLOGICAL LABS FREDERICK MD

THE ALL-UNION CONFERENCE ON THE APPLICATION OF RADIOELECTRONICS IN BIOLOGY AND MEDICINE (2ND), (U)

JUL 68 4P MANDELTSVAI,YU. B. ;
REPT. NO. TRANS-916

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: TRANS. OF MEDITSINSKAYA RADIOLOGIYA (USSR) V7 N8 P100-101 1962.

DESCRIPTORS: (*ELECTRONIC EQUIPMENT, *RADIOBIOLOGY), MEDICAL RESEARCH, NEOPLASMS, DIAGNOSIS(MEDICINE), BLOOD CIRCULATION, RADIOACTIVE ISOTOPES, ELECTROENCEPHALOGRAPHY, PHARMACOLOGY, SYMPOSIA, USSR (U)
IDENTIFIERS: TRANSLATIONS (U)

AT 11 SECTIONAL MEETINGS, MORE THAN 100 REPORTS WERE MADE. ONE OF THE SECTIONS WAS DEVOTED TO ELECTRONIC EQUIPMENT IN PHYSIOLOGICAL RESEARCH USING ISOTOPES. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD- 685 486 6/18 6/5
FOREIGN TECHNOLOGY DIV WRIGHT-PATTERSON AFB OHIO

BIOLOGICAL ACTION OF HIGH-ENERGY PROTONS, VOLUME 2, (U)

OCT 68 320P GRIGOREVA,YU. G. ;
REPT. NO. FTD-MT-24-150-68-VOL-2

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: EDITED MACHINE TRANS. OF MONO. VOLUME 2, BIOLOGICHESKOE DEISTVIE PROTONOV VYSOKIKH ENERGII (K OTSENKE RADIATSIONNOI OPASNOSTI KOSMICHESKIKH POLETOV), MOSCOW, 1967 P1-508. SEE ALSO VOLUME 1, AD-685 622.

DESCRIPTORS: (*PROTONS, *RADIOBIOLOGY), (*AEROSPACE MEDICINE, RADIOBIOLOGY), (*SPACE BIOLOGY, RADIOBIOLOGY), PLANTS(BOTANY), SAFETY, BONE MARROW, GAMMA RAYS, MICROORGANISMS, ALGAE, GROWTH(PHYSIOLOGY), USSR (U)
IDENTIFIERS: TRANSLATIONS (U)

THIS MONOGRAPH DEALS WITH RADIOBIOLOGICAL PROBLEMS WHICH MUST BE SOLVED BEFORE MAN CAN MASTER OUTER SPACE. IT DEALS IN PARTICULAR WITH THE IMMEDIATE AND REMOTE EFFECTS OF IONIZING RADIATION ON MAN. IT CONSISTS OF SEVEN CHAPTERS, SOME OF WHICH CONTAIN SEVERAL SEPARATE ARTICLES. THESE ARE BY VARIOUS AUTHORS WHO CITE THE RESULTS OF THEIR OWN EXPERIMENTS AND ALSO REFER VERY EXTENSIVELY TO OTHER INVESTIGATIONS, BOTH SOVIET AND FOREIGN. THESE ARTICLES ARE CONSOLIDATED UNDER THE FOLLOWING MAIN HEADINGS: PHYSICAL ASPECTS OF RADIATION SAFETY OF SPACE FLIGHT; BIOLOGICAL FOUNDATIONS FOR RADIATION SAFETY OF SPACE FLIGHTS; MODEL RADIOBIOLOGICAL INVESTIGATIONS OF THE ACTION OF HIGH-ENERGY PROTONS; BIOLOGICAL ACTION OF PROTONS ON MAMMALS AND BIRDS; RADIOBIOLOGICAL EFFECTS OF THE ACTION OF PROTONS ON PLANTS; CLINICO-PHYSIOLOGICAL OBSERVATIONS OF PERSONS WORKING ON ACCELERATORS; PROPHYLAXIS AND THERAPY OF PROTON INJURIES; RADIOBIOLOGICAL MATERIALS AS THE BASIS FOR THE LOCAL PROTECTION OF ASTRONAUTS. (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD- 689 096 6/18 6/1
ARMED FORCES RADIOBIOLOGY RESEARCH INST BETHESDA MD

EFFECT OF X RAYS AND 60CO GAMMA RAYS ON THE LIVER ENZYME SYSTEM RESPONSIBLE FOR FATTY ACID SYNTHESIS. (U)

DESCRIPTIVE NOTE: SCIENTIFIC REPT.,
APR 69 22P CATRAVAS,G. N. ;
REPT. NO. AFRRI-SR69-7

UNCLASSIFIED REPORT

DESCRIPTORS: (*ENZYMES, RADIATION EFFECTS), FATTY ACIDS, METABOLISM, LIVER, BIOSYNTHESIS, GAMMA RAYS, X RAYS, IN VIVO ANALYSIS, RADIATION DOSAGE, RATS, BLOOD CHEMISTRY, WHOLE BODY IRRADIATION (U)

THE REPORT DESCRIBES EFFECTS OF IN VIVO EXPOSURE TO X RAYS AND 60CO GAMMA RAYS ON THE FATTY ACID SYNTHESIZING LIVER ENZYME SYSTEM. BOTH FED AND FASTED YOUNG FEMALE SPRAGUE-DAWLEY RATS WERE UTILIZED IN THESE STUDIES. ALL IRRADIATED ANIMALS RECEIVED A SINGLE WHOLE-BODY EXPOSURE OF 1200 R AT 20 R/MIN. THE IRRADIATED ANIMALS AS WELL AS SHAM IRRADIATED CONTROLS WERE SACRIFICED AT PREDETERMINED TIMES AFTER EXPOSURE AND CELL-FREE LIVER HOMOGENATES WHICH CONTAINED THE ENZYME SYSTEM UNDER INVESTIGATION WERE PREPARED. IT WAS FOUND THAT THE ACTIVITY OF THE LIVER ENZYME SYSTEM RESPONSIBLE FOR THE BIOSYNTHESIS OF FATTY ACIDS IS GREATLY STIMULATED BY X OR 60CO GAMMA RAYS AND THAT THE CYTOPLASMIC SOLUBLE ENZYMES ARE AFFECTED BY RADIATION TO A MUCH GREATER EXTENT THAN THE MITOCHONDRIAL ENZYMES. BLOOD GLUCOSE DETERMINATIONS WERE CARRIED OUT IN IRRADIATED AND CONTROL RATS AS WELL AS IN RATS WHICH WERE MADE ALLOXAN DIABETIC. THE RESULTS INDICATE THAT THE ENHANCEMENT OF ENZYME ACTIVITY OBSERVED IS NOT DUE TO AN INCREASE IN THE BLOOD GLUCOSE LEVEL OF THE ANIMAL AS A RESULT OF EXPOSURE TO RADIATION BUT TO SOME OTHER FACTOR THE NATURE OF WHICH HAS NOT YET BEEN ELUCIDATED. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD- 689 941 6/18 6/15
DEFENCE CHEMICAL BIOLOGICAL AND RADIATION ESTABLISHMENT
OTTAWA (ONTARIO)

THE EFFECT OF RADIOPROTECTIVE AGENTS ON STEM CELL RECOVERY AFTER IRRADIATION, (U)

JUL 68 13P VITTORIO,P. V. ;DZIUBALO-
BLEHM,S. ;AMEY,E. A. ;
MONITOR: DREO 586

UNCLASSIFIED REPORT
AVAILABILITY: PUB. IN RADIATION RESEARCH, V37 N3 P653-664 MAR 69. NO COPIES FURNISHED.

DESCRIPTORS: (*HEMOPOIETIC SYSTEM, RADIOPROTECTIVE AGENTS), CELLS(BIOLOGY), RADIATION DOSAGE, RECOVERY, BLOOD, SPLEEN, SURVIVAL(PERSONNEL), MICE, IRON, UREA, BROMIDES, SEROTONIN, AMINO ACIDS, ORGANIC SULFUR COMPOUNDS, CANADA (U)
IDENTIFIERS: HOMOCYSTEINE, PENICILLAMINE, PSEUDOUREA/ 2-(2-AMINOETHYL)-2-THIO (U)

ERYTHROPOIETIC STEM CELL DAMAGE AND RECOVERY AFTER TREATMENT WITH RADIO-PROTECTIVE AGENTS FOLLOWED BY GAMMA IRRADIATION WAS MEASURED IN TRANSFUSION-INDUCED POLYCYTHEMIC MICE IN CONJUNCTION WITH 59FE RED CELL INCORPORATION AS THE INDICATOR OF ERYTHROPOIETIC ACTIVITY. IN IRRADIATED MICE, THE ADMINISTRATION OF S-2 AMINOETHYL ISOTHIOUREA DIHYDROBROMIDE (AET) PRIOR TO IRRADIATION RESULTS IN LESS INITIAL DAMAGE TO THE BLOOD AND SPLEEN, AND THIS IS RESPONSIBLE FOR THE EARLIER RECOVERY OF THE ERYTHROPOIETIC SYSTEM. BLOOD AND SPLEEN 59FE VALUES AT 1 OR 7 DAYS AFTER IRRADIATION WITH 200 OR 700 RADS, RESPECTIVELY, CAN BE USED TO COMPARE THE RELATIVE VALUE OF DIFFERENT SULFHYDRYL AGENTS IN AIDING SURVIVAL. USING THE SPLIT-DOSE TECHNIQUE, IT WAS SHOWN THAT AET GIVEN PRIOR TO THE SECOND RADIATION DOSE PROVIDED PROTECTION TO THE HEMATOPOIETIC SYSTEM AND INCREASED SURVIVAL. HOWEVER, AET, PRIOR TO THE FIRST RADIATION DOSE (200 RADS), DID NOT PRODUCE ANY INCREASED PROTECTIVE EFFECT OVER THAT PRODUCED BY THE FIRST RADIATION DOSE WHEN THE MICE WERE IRRADIATED 10 DAYS LATER. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD- 689 947 6/18
WALTER REED ARMY INST OF RESEARCH WASHINGTON D C

HISTOCHEMICAL INVESTIGATION OF THE MUCOSA OF THE EXTERIORIZED SMALL INTESTINE OF THE RAT EXPOSED TO X-RADIATION, (U)

69 19P JERVIS,HELEN R. ;DONATI, ROBERT M. ;STROMBERG,LAWAYNE R. ;SPRINZ, HELMUTH ;

UNCLASSIFIED REPORT
AVAILABILITY: PUB. IN STRAHLENTHERAPIE. ARCHIV FUER KLINISCHE UND EXPERIMENTELLE RADIOLOGIE, V137 N3 P326-343 1969.
SUPPLEMENTARY NOTE: LIMITED NUMBER OF COPIES CONTAINING COLOR OTHER THAN BLACK AND WHITE ARE AVAILABLE UNTIL STOCK IS EXHAUSTED. REPRODUCTIONS WILL BE MADE IN BLACK AND WHITE ONLY.

DESCRIPTORS: (*INTESTINES, *RADIATION EFFECTS), X RAYS, RATS, MORPHOLOGY(BIOLOGY), HISTOLOGY, INHIBITION, ENZYMES, METABOLISM, NECROSIS, LIPIDS (U)
IDENTIFIERS: MORPHOLOGY, MUCOSA (U)

IRRADIATION OF THE EXTERIORIZED SMALL INTESTINE OF RATS WITH 2000 R X-RAYS, THE REST OF THE BODY BEING SHIELDED, RESULTS IN A DISCONTINUOUS MUCOSAL INJURY OF VARYING INTENSITY, RANGING FROM MILD CRYPT LESIONS REPAIRED IN 2 DAYS TO EXTENSIVE ULCERATIONS. EVEN IN THE ABSENCE OF SEVERE MORPHOLOGIC CHANGES AT THE LIGHT MICROSCOPIC LEVEL DURING THE FIRST TWO DAYS AFTER RADIATION, THE ENZYMATIC ACTIVITY OF THE EPITHELIAL CELLS IS ALTERED AND ABSORPTION FROM THE LUMEN AND SYNTHESIS OF SULFATED MUCINS IN THE GOBLET CELLS ARE DEPRESSED. SUPPRESSION OF HISTOCHEMICALLY DEMONSTRABLE ENZYMATIC ACTIVITY IN THE ABSORPTIVE CELLS IS ASSOCIATED WITH SEVERE PATHOLOGIC CHANGES. REGENERATION IN THE MORE SEVERELY AFFECTED AREAS BEGINS AT 4-5 DAYS AFTER EXPOSURE AND, IN RATS WHICH DO NOT SUCCOMB TO THE ACUTE INTESTINAL RADIATION SYNDROME, IS STILL INCOMPLETE 4 WEEKS AFTER IRRADIATION. IN THESE AREAS RADIATION MAY EFFECT THE REGENERATIVE CELLS OF THE CRYPTS LEADING TO AN INCREASE IN CELL SIZE, AND TO GROSS IRREGULARITIES OF THE MUCOSAL STRUCTURE. THE MUCOSAL ENZYMATIC FUNCTIONS AND THE ABSORPTION OF LIPIDS REMAIN DEPRESSED AND SULFATION OF MUCIN IS IMPAIRED. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD- 691 153 6/18
FOREIGN TECHNOLOGY DIV WRIGHT-PATTERSON AFB OHIO

NEUTRONS IN RADIOBIOLOGICAL EXPERIMENTS, (U)

NOV 68 297P ISAEV,B. M. ;BREGADZE,YU. I. ;

REPT. NO. FTD-MT-24-258-68

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: EDITED MACHINE TRANS. OF MONO. NEITRONY V RADIOBIOLOGICHESKOM EKSPERIMENTE, MOSCOW, 1967 P1-292.

DESCRIPTORS: (*NEUTRONS, *RADIOBIOLOGY), RADIATION EFFECTS, DOSE RATE, PARTICLES, MEASUREMENT, BIOPHYSICS, USSR (U)

THE METHOLOGY OF RADIO BIOLOGICAL EXPERIMENTS USING RADIOACTIVE ISOTOPES AS NEUTRON SOURCES IS DISCUSSED AS ARE ACCELERATORS AND REACTORS. THE PHYSICAL MECHANISMS OF NEUTRON INTERACTION WITH BIOLOGICAL OBJECTS, METHODS OF MEASURING AND CALCULATING THE ABSORBED DOSES, AND ARE CONSIDERED 'QUALITY' OF IRRADIATION, DETERMINED BY ITS BIOLOGICAL EFFECTIVENESS IS STUDIED IN DETAIL. MEASURING AND CALCULATING THE DISTRIBUTION OF ABSORBED DOSES ACCORDING TO LINE AT ENERGY LOSS IS DISCUSSED. THESE PARAMETERS CHARACTERIZING THE INTERACTION OF RADIATION WITH THE MATERIAL MUST BE CONSIDERED DURING THE FORMULATION OF QUALITATIVE RADIOBIOLOGICAL INVESTIGATIONS. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD- 692 342 6/13 6/18
FORT DETRICK FREDERICK MD

PATHOLOGICAL CHANGES IN RABBITS INJECTED WITH PASTEURELLA TULARENSIS KILLED BY IONIZING RADIATION, (U)

JAN 69 6P FINEGOLD,MILTON J. ;PULLIAM, JAMES D. ;LANDAY,MARSHALL E. ;WRIGHT,GEORGE G. ;

UNCLASSIFIED REPORT
AVAILABILITY: PUB. IN JNL. OF INFECTIOUS DISEASES, V119 N6 P635-640 JUN 69.

DESCRIPTORS: (*PASTEURELLA TULARENSIS, VACCINES), (*VACCINES, *RADIOBIOLOGY), COBALT, PATHOLOGY, RABBITS, SPLEEN, LUNG, KIDNEYS, HEART, LIVER, HEMORRHAGE, NECROSIS, THROMBOSIS, IMMUNITY, TOXINS AND ANTITOXINS, CORTICOSTEROID AGENTS, HISTOLOGY, EFFECTIVENESS, ALLERGIC DISEASES (U)

SUSPENSIONS OF PASTEURELLA TULARENSIS KILLED BY EXPOSURE TO IONIZING RADIATION WERE LETHAL FOR RABBITS WITHIN 24 HR AFTER INTRAVENOUS INJECTION. THE MAJOR PATHOLOGIC CHANGES WERE EXTENSIVE HEMORRHAGIC NECROSIS OF THE SPLEEN, FOCAL COAGULATION NECROSIS OF THE LIVER, PNEUMONITIS, AND GLOMERULAR CAPILLARY OCCLUSION BY FIBRIN THROMBI. SIMILAR LESIONS WERE PRODUCED WHEN 2 SMALLER DOSES OF THE SUSPENSION WERE GIVEN INTRAVENOUSLY 24 HR APART. THE LOCALIZED SHWARTZMAN REACTION WAS PRODUCED BY AN INTRADERMAL INJECTION FOLLOWED IN 24 HR BY AN INTRAVENOUS INJECTION. RABBITS WERE PROTECTED AGAINST THE LETHAL ACTION OF THE IRRADIATED SUSPENSION AND AGAINST DEVELOPMENT OF GLOMERULAR THROMBOSIS BY PRIOR ADMINISTRATION OF A SINGLE DOSE OF 25 MG OF CORTISONE. THE PATHOLOGICAL FINDINGS WERE SIMILAR TO THOSE IN RABBITS GIVEN ENDOTOXINS FROM MENINGOCOCCI OR OTHER GRAM-NEGATIVE ORGANISMS AND MAY BE INTERPRETED AS A COMBINATION OF THE LOCAL AND GENERALIZED SHWARTZMAN REACTIONS. SIMILARITIES WERE ALSO NOTED BETWEEN RESPONSES TO THE IRRADIATED SUSPENSION AND THOSE OCCURRING DURING EXPERIMENTAL TULAREMIA INFECTION IN RABBITS. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD- 695 597 6/3 6/18
CALIFORNIA UNIV SAN FRANCISCO SCHOOL OF MEDICINE

'SANDWICH' SOLID PHASE RADIOIMMUNOASSAY FOR THE QUANTITATIVE DETERMINATION OF HUMAN IMMUNOGLOBULINS, (U)

NOV 68 9P SALMON,SYDNEY E. ;MACKEY, GAIL ;FUDENBERG,H. HUGH ;
CONTRACT: NONR-3656(12), PHS-HE-05997

UNCLASSIFIED REPORT
AVAILABILITY: PUB. IN JNL. OF IMMUNOLOGY, V103 N1 P120-137 JUL 69.

DESCRIPTORS: (*GAMMA GLOBULIN, *QUANTITATIVE ANALYSIS), (*BIOASSAY, *RADIOBIOLOGY), HUMANS, ANTIGENS + ANTIBODIES, IMMUNOLOGY, MEASUREMENT (U)

THIS REPORT DESCRIBES A SENSITIVE, RELATIVELY SIMPLE SOLID-PHASE 'SANDWICH' RADIOIMMUNOASSAY AND ITS APPLICATION TO THE QUANTITATIVE MEASUREMENT, AND ANTIGENIC ANALYSIS, OF IMMUNOGLOBULIN COMPONENTS, USING ANTISERA TO THE HEAVY CHAINS OF IGG, IGA AND IGM. WITH THIS TECHNIQUE, THE SOLID-PHASE, CONSISTING OF DISPOSABLE PLASTIC TUBES OR COMMERCIAL ISOTHIOCYANATE-SUBSTITUTED PLASTIC DISCS, IS SENSITIZED BY SEQUENTIAL BINDING OF PURE ANTIGEN TO THE PLASTIC POLYMER, ANTIBODY TO THE ANTIGEN, AND UNLABELED OR LABELED ANTIGEN TO THE ANTIBODY. THE QUANTITATIVE BINDING OF LABELED ANTIGEN BY THE SANDWICH-SENSITIZED SOLID-PHASE IS GREATLY ENHANCED AS COMPARED WITH TRACER BINDING BY SOLID-PHASE POLYMER COATED ONLY WITH ANTIBODY. THE SANDWICH TECHNIQUE ALLOWS QUANTITATION OF IMMUNOGLOBULINS IN THE NANOGRAM TO MICROGRAM RANGE, AND IS APPLICABLE TO A VARIETY OF IMMUNOLOGIC STUDIES WHERE THIS RANGE OF SENSITIVITY IS REQUIRED. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD- 697 662 6/18
ARMED FORCES RADIOBIOLOGY RESEARCH INST BETHESDA MD

IN VITRO MOTOR ACTIVITY OF RAT SMALL INTESTINE FOLLOWING WHOLE-BODY X IRRADIATION. (U)

DESCRIPTIVE NOTE: SCIENTIFIC REPT., OCT 69 24P KAGNOFF,M. F. ;HARVEY,S. A. ;
REPT. NO. AFRRI-SR69-15

UNCLASSIFIED REPORT

DESCRIPTORS: (*RADIATION EFFECTS, INTESTINES), (*INTESTINES, CONTRACTION), IN VITRO ANALYSIS, WHOLE BODY IRRADIATION, X RAYS, RADIATION INJURIES, PHYSIOLOGY, PATHOLOGY, RATS (U)

IN VITRO CONTRACTIONS OF SMALL INTESTINAL SEGMENTS WERE STUDIED AT VARYING TIMES FOLLOWING EXPOSURE OF RATS TO WHOLE-BODY X IRRADIATION. JEJUNAL CONTRACTIONS WERE MEASURED 20 TO 40 MINUTES, 4 TO 6 HOURS, 1 DAY, 2 DAYS, 3 DAYS, 5 DAYS, 7 DAYS, 11 DAYS AND 30 DAYS FOLLOWING 25 R, 100 R, AND 700 R, AS WELL AS DURING THE FIRST 3 DAYS FOLLOWING 1500 R. DUODENUM AND ILEUM WERE STUDIED 2 AND 3 DAYS FOLLOWING 1500 R. SHAM IRRADIATED RATS SERVED AS CONTROLS. THE IRREGULAR 'MULTICOMPONENT' CONTRACTION PATTERN CHARACTERISTIC OF JEJUNAL SEGMENTS FROM NONIRRADIATED RATS WAS CHANGED TO A MORE REGULAR PATTERN 2 AND 3 DAYS AFTER 1500 R, 700 R, AND 100 R; IN ADDITION, EXPOSURES WITH 1500 R AND 700 R INCREASED CONTRACTION AMPLITUDE. TWO AND THREE DAYS FOLLOWING 1500 R, DUODENAL BUT NOT ILEAL SEGMENTS SHOWED INCREASED REGULARITY. FURTHERMORE, THE GRADIENT OF CONTRACTION FREQUENCY (DUODENUM>JEJUNUM>ILEUM) WAS MAINTAINED, BUT THE GRADIENT OF CONTRACTION REGULARITY (ILEUM> JEJUNUM>DUODENUM) WAS CHANGED. CHANGES IN SMALL INTESTINAL MOTOR FUNCTION FOLLOWING WHOLE-BODY RADIATION MAY SIGNIFICANTLY CONTRIBUTE TO THE PATHOPHYSIOLOGY OF INTESTINAL RADIATION INJURY. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD- 704 167 6/18
ARMED FORCES RADIOBIOLOGY RESEARCH INST BETHESDA MD

ANNUAL RESEARCH REPORT: 1 JULY 1968-30 JUNE 1969. (U)

JUN 69 57P
REPT. NO. AFRRI-ARR-3

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO AD-687 119.

DESCRIPTORS: (*RADIOBIOLOGY, REVIEWS), GASTROINTESTINAL SYSTEM, IMMUNOLOGY, HEMOPOIETIC SYSTEM, BIOCHEMISTRY, CYTOLOGY, BONE MARROW, PHYSIOLOGY, BEHAVIOR, PARTIAL BODY IRRADIATION, BLOOD PLASMA, URINE, AMINO ACIDS, PROTEINS(CONJUGATED), MAMMALS, MORTALITY RATES, RADIATION INJURIES, RADIATION EFFECTS, RADIATION DOSA(U)

CONTENTS INCLUDE: ACUTE MORTALITY RESPONSE OF LARGER MAMMALS TO IONIZING RADIATION; INVESTIGATION OF INCAPACITATING DOSES OF RADIATION IN LARGER MAMMALS; THE EFFECT OF PARTIAL-BODY SHIELDING; ACUTE MORTALITY OF MICE AND RATS EXPOSED TO 14 MEV NEUTRONS; BEHAVIORAL INCAPACITATION STUDIES; THE BEHAVIORAL PERFORMANCE OF THE UNRESTRAINED MONKEY FOLLOWING MIXED GAMMA-NEUTRON IRRADIATION; IDENTIFICATION OF PROMINENT SITES OF RADIATION INJURY; HEMOGRAM AND BONE MARROW DIFFERENTIAL OF THE CHINCHILLA; EFFECTS OF IONIZING RADIATIONS ON BIOSYNTHESIS OF COMPLEX PROTEINS; EFFECT OF MIXED GAMMA-NEUTRON RADIATIONS ON PLASMA AND URINE AMINO ACID LEVELS IN THE RAT; EFFECTS OF IONIZING RADIATION ON IMMUNE RESPONSES; POSTIRRADIATION GASTROINTENTINAL INJURY; AND RADIATION FIELDS PRODUCED BY THE AFRRI-TRIGA REACTOR. (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD- 705 996 6/18 6/1
ARMED FORCES RADIOBIOLOGY RESEARCH INST BETHESDA MD

ACTIVITY OF RAT LIVER ENZYMES RESPONSIBLE FOR GLYCOGEN METABOLISM AFTER WHOLE-BODY IRRADIATION, (U)

DESCRIPTIVE NOTE: SCIENTIFIC REPT., APR 70 26P CATRAVAS,G. N. ;MCHALE, C. G. ;
REPT. NO. AFRRI-SR70-3

UNCLASSIFIED REPORT

DESCRIPTORS: (*RADIATION EFFECTS, ENZYMES), (*ENZYMES, LIVER), (*GLYCOGEN, METABOLISM), WHOLE BODY IRRADIATION, X RAYS, NUCLEAR RADIATION, BIOSYNTHESIS, INHIBITION, RATS (U)

THE ACTIVITIES OF LIVER ENZYMES INVOLVED IN THE BREAKDOWN AND SYNTHESIS OF GLYCOGEN HAVE BEEN INVESTIGATED IN RATS EXPOSED TO 1200 RADS MIDLINE KERMA DOSE, FREE-IN-AIR, OF X RAYS OR MIXED GAMMA-NEUTRON RADIATION. IT WAS FOUND THAT GLYCOGEN PHOSPHORYLASE AND AMYLO-1,6-GLUCOSIDASE, BOTH OF WHICH ARE INVOLVED IN THE BREAKDOWN OF GLYCOGEN TO 3GLUCOSE3 UNITS, ARE GREATLY INHIBITED BY BOTH QUALITIES OF RADIATION. A CONSIDERABLE INHIBITION IN THE ACTIVITY OF AMYLO-(1,4 TO 1,6)-TRANS-GLUCOSIDASE (BRANCHING ENZYME) WAS ALSO OBSERVED. IN CONTRAST, IT WAS FOUND THAT THE ACTIVITY OF UDP-GLUCOSE-GLYCOGEN TRANSGLUCOSYLASE WHICH IS RESPONSIBLE FOR THE IN VIVO SYNTHESIS OF 1,4-POLYSACCHARIDES IS GREATLY ENHANCED WHEN THE ANIMAL RECEIVED X RAYS OR MIXED GAMMA-NEUTRON RADIATION. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD- 707 468 6/5 6/18
JOHNS HOPKINS UNIV BALTIMORE MD SCHOOL OF MEDICINE

INVESTIGATIONS OF THE PATHOLOGY OF INFECTIOUS DISEASES AND SUPPLEMENTARY CONSULTATION SERVICES. (U)

DESCRIPTIVE NOTE: REPT. NO. 14 (ANNUAL), 1 JUN 69-31 MAY 70,
70 80P DANNENBERG,ARTHUR M. , JR.;
SQUIRE,ROBERT A. ;
CONTRACT: DA-18-064-AMC-104(A)

UNCLASSIFIED REPORT
AVAILABILITY: PUB. IN VARIOUS JNLS.
SUPPLEMENTARY NOTE: SEE ALSO ANNUAL REPT. NO. 13, AD-855 084. ERRATA SHEET INSERTED.

DESCRIPTORS: (*MYCOBACTERIUM TUBERCULOSIS, PATHOLOGY), (*INFECTIOUS DISEASES, *RADIOBIOLOGY), DISEASES, PHAGOCYTES, ENZYMES, RIBONUCLEASE, DEOXYRIBONUCLEIC ACIDS, LEUKOCYTES, WHOLE BODY IRRADIATION, SKIN(ANATOMY), HISTOLOGY, RESPIRATORY SYSTEM, LUNG, ENZYMES, RETICULOENDOTHELIAL SYSTEM (U)

THIS REPORT CONSISTS OF 3 REPRINTS ON RADIATION, INFECTION AND MACROPHAGE FUNCTION (J. RETICULOENDOTHELIAL SOCIETY 7, 53-78, 79-90, 91-108, 1970) AND ONE REPRINT ON MACROPHAGE DNASE AND RNASE (IBID. 7, 15-31, 1970). (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD- 706 812 6/18
DEFENCE RESEARCH ESTABLISHMENT OTTAWA (ONTARIO)

CHANGES IN ACUTE RADIATION HAZARDS ASSOCIATED WITH CHANGES IN EXPOSURE GEOMETRY, (U)

JUL 69 10P CLIFFORD,C. E. ;FACEY,R. A. ;
REPT. NO. DREO-596

UNCLASSIFIED REPORT
AVAILABILITY: PUB. IN HEALTH PHYSICS PERGAMON PRESS, V18 P217-225 1970. NO COPIES FURNISHED.
SUPPLEMENTARY NOTE: REVISION OF REPORT DATED 9 APR 69.

DESCRIPTORS: (*RADIATION HAZARDS, *WHOLE BODY IRRADIATION), (*RADIATION DOSAGE, WHOLE BODY IRRADIATION), HUMAN BODY, GEOMETRY, EXPOSURE(PHYSIOLOGY), TISSUES(BIOLOGY), X RAYS, GAMMA RAYS, ABSORPTION(BIOLOGICAL), CANADA (U)

THE RATIOS OF THE MEAN BONE-MARROW DOSE AND OF THE MIDLINE ABDOMEN DOSE TO THE CORRESPONDING EXPOSURES WERE MEASURED FOR A PHANTOM EXPOSED IN A ROTATIONAL GEOMETRY ABOUT ITS VERTICAL AXIS TO BROAD BEAMS OF X- AND GAMMA-RADIATION INCIDENT AT ANGLES FROM -30 DEGREES TO +75 DEGREES TO THE NORMAL TO THE AXIS OF ROTATION. THE ENERGY OF THE RADIATION VARIED FROM 0.06 TO 0.66 MEV. THE RATIO OF THE DOSE TO THE EXPOSURE WAS HEAVILY DEPENDENT ON THE IRRADIATION GEOMETRY. FOR MANY EXPOSURE CONDITIONS IT WAS SHOWN THAT THE RATIO OF DOSE TO EXPOSURE OBTAINED AT NORMAL INCIDENCE WOULD NOT BE SUFFICIENT TO ASSESS THE HAZARD FOR ACUTE EFFECTS OF WHOLE-BODY IRRADIATION. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD- 712 532 16/6 6/18 18/4
AMERICAN NUCLEAR SOCIETY WASHINGTON D C SHIELDING AND DOSIMETRY DIV

PROCEEDING OF INVITED PAPERS SHIELDING AND DOSIMETRY DIVISION AMERICAN NUCLEAR SOCIETY HELD AT WASHINGTON, D. C., NOVEMBER 1968, (U)

MAR 70 157P HUDDLESTON,CHARLES M. ;
REPT. NO. ANS-SD-8

UNCLASSIFIED REPORT

DESCRIPTORS: (*FAST REACTORS, SHIELDING), (*RADIATION HAZARDS, DOSE RATE), REACTOR SHIELDING MATERIALS, REACTOR SHIELDING CALCULATIONS, CONCRETE, OPTIMIZATION, RADIOBIOLOGY, REACTOR LATTICE PARAMETERS, RADIATION MEASURING INSTRUMENTS, NEUTRON SPECTRUM, REVIEWS (U)

THE DOCUMENT DISCUSSES VARIOUS PAPERS ON REACTOR SHIELDING AND DOSIMETRY, AND THE APPARENT NEED FOR GREATER RESEARCH IN THESE AREAS. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD- 713 321 6/5 6/18
NAVAL MEDICAL RESEARCH INST BETHESDA MD

SYNERGISM OF THYMUS AND BONE MARROW IN THE PRODUCTION OF GRAFT-VERSUS-HOST SPLENOMEGALY IN X-IRRADIATED HOSTS. (U)

DESCRIPTIVE NOTE: MEDICAL RESEARCH INTERIM REPT., APR 70 14P HILGARD,HENRY R. ;
PROJ: MR005.02
MONITOR: NAVMED MR005.02-0013A-2

UNCLASSIFIED REPORT
AVAILABILITY: PUB. IN JNL. OF EXPERIMENTAL MEDICINE, V132 N2 P317-328, 1 AUG 70.

DESCRIPTORS: (*BONE MARROW, TRANSPLANTATION), (*THYMUS, TRANSPLANTATION), (*TRANSPLANTATION, *SPLEEN), (*RADIOBIOLOGY, TRANSPLANTATION), CELLS(BIOLOGY), IMMUNOLOGY, RESPONSE(BIOLOGY), X RAYS (U)
IDENTIFIERS: *SPLENOMEGALY, *SYNERGISM (U)

GRAFT-VERSUS-HOST SPLENOMEGALY MAY BE ELICITED FROM 500 R X-IRRADIATED F1 HYBRID HOSTS IF THE HOSTS ARE INJECTED WITH BONE MARROW CELLS AND THYMUS CELLS FROM PARENTAL STRAIN DONORS. CELLS FROM THYMUS ONLY OR BONE MARROW ONLY WILL NOT ELICIT GRAFT-VERSUS-HOST SPLENOMEGALY IN THESE HOSTS. IN THIS REQUIREMENT FOR CELLS FROM BOTH SOURCES, THE BONE MARROW CELLS PLAY A NONIMMUNOLOGIC, PROLIFERATIVE ROLE IN THE SPLENOMEGALY, AND THE THYMUS CELLS CARRY OUT THE IMMUNOLOGIC ATTACK. THUS THE MECHANISM OF THIS SYNERGISM IS QUITE DIFFERENT FROM THAT REPORTED FOR THE HUMORAL IMMUNE RESPONSE TO SHEEP ERYTHROCYTES IN WHICH BOTH THYMUS AND MARROW INTERACT IN THE PRODUCTION OF THE SPECIFIC IMMUNOLOGIC RESPONSE ITSELF. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD- 713 354 6/18 6/5
ARMED FORCES INST OF PATHOLOGY WASHINGTON D C

EFFECT OF REGIONAL SHIELDING AND BACTERIAL ENDOCARDITIS IN X-IRRADIATED RATS, (U)

OCT 69 7P HIGHMAN,BENJAMIN ;HANKS,ALAN R. ;RANTANEN,NORMAN W. ;

UNCLASSIFIED REPORT
AVAILABILITY: PUB. IN RADIATION RESEARCH, V43 N3 P691-697 SEP 70.

DESCRIPTORS: (*X RAYS, INFECTIOUS DISEASES), (*CARDIOVASCULAR DISEASES, BACTERIA), (*PARTIAL BODY IRRADIATION, RESISTANCE(BIOLOGY)), PERMISSIBLE DOSAGE, RADIATION DOSAGE, ABDOMEN, HEMOPOIETIC SYSTEM, RADIATION INJURIES, RATS, SPLEEN, LIVER, RETICULOENDOTHELIAL SYSTEM (U)
IDENTIFIERS: *BACTERIAL ENDOCARDITIS (U)

IN PREVIOUS STUDIES, IT WAS SHOWN THAT BACTERIAL ENDOCARDITIS CAN BE READILY INDUCED IN RATS BY INTRAVENOUS INJECTION OF CERTAIN STRAINS OF BACTERIA IF THEIR RESISTANCE HAS BEEN LOWERED BY PRIOR X-IRRADIATION (1) OR ADMINISTRATION OF LARGE DOSES OF EPINEPHRINE IN OIL. IT HAS ALSO BEEN SHOWN THAT THE X-RAY DOSE TOLERATED BY ANIMALS MAY BE INCREASED BY REGIONAL SHIELDING, MORE SO BY SHIELDING THE LOWER HALF THAN THE UPPER HALF OF THE BODY. THE PURPOSE OF THE PRESENT STUDY WAS TO DETERMINE THE EFFECT OF REGIONAL SHIELDING ON THE SUSCEPTIBILITY OF IRRADIATED RATS TO BACTERIAL ENDOCARDITIS. (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD- 713 557 6/18
ARMY ELECTRONICS COMMAND FORT MONMOUTH N J INST FOR EXPLORATORY RESEARCH

REDUCTION OF BIOLOGICAL EFFECTIVENESS OF X-RAYS AT VERY HIGH DOSE RATES, (U)

70 12P KRONENBERG,STANLEY ;LUX, ROBERT ;NILSON,KRISTIAN ;

UNCLASSIFIED REPORT

DESCRIPTORS: (*RADIATION EFFECTS, DOSE RATE), X RAYS, RADIATION DOSAGE, RADIATION CHEMISTRY, RADIOBIOLOGY, DOSIMETERS, SEEDS, GERMINATION, FREE RADICALS (U)

IT HAS BEEN OBSERVED THAT RELATIVE BIOLOGICAL EFFECTIVENESS (RBE) OF X-RAYS OR GAMMA RAYS IS INDEPENDENT OF DOSE RATE PROVIDED THAT THEIR DELIVERY TIME IS SHORT COMPARED TO THE RECUPERATION TIME OF THE ORGANISM. AT HIGHER DOSE RATES, HOWEVER, SEVERAL EFFECTS MAY MODIFY THE RBE. ONE POSSIBLE PROCESS IS CONSIDERED HERE: BIOLOGICAL RADIATION EFFECTS ARE DEPENDENT UPON THE CHEMICAL BEHAVIOR OF FREE RADICALS PRODUCED IN THE IONIZATION PROCESS. THESE FREE RADICALS ARE USUALLY CHEMICALLY ACTIVE, AND CAN PRODUCE PERMANENT DAMAGE BY THEIR INTERACTION WITH PROTEIN CHAINS. SUPPOSE THE CONCENTRATION OF THESE RADICALS IS ALLOWED TO COME TO EQUILIBRIUM BY IRRADIATING A SAMPLE AT A CONSTANT DOSE RATE FOR A SUFFICIENT TIME. FOR LOW AND MODERATE DOSE RATES THE RADICAL CONCENTRATION IS SO LOW THAT DIRECT RADICAL-RADICAL RECOMBINATION MAY BE NEGLECTED. AT A SUFFICIENTLY HIGH DOSE RATE HOWEVER THIS RECOMBINATION MAY BECOME SIGNIFICANT. THE REDUCED RADICAL CONCENTRATION WILL REDUCE THE RBE. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD- 714 124 6/18
SCHOOL OF AEROSPACE MEDICINE BROOKS AFB TEX

RADIOBIOLOGICAL CONCEPTS FOR MANNED SPACE MISSIONS, (U)

70 9P PICKERING,JOHN E. ;
REPT. NO. SAM-TR-70-267

UNCLASSIFIED REPORT
AVAILABILITY: PUB. IN AEROSPACE MEDICINE, V41 N2 P159-165 FEB 70.

DESCRIPTORS: (*RADIATION DOSAGE, *SPACE FLIGHT), RADIATION HAZARDS, RADIOBIOLOGY, THRESHOLDS(PHYSIOLOGY), AEROSPACE MEDICINE, SPACE ENVIRONMENTS, ASTRONANTS, RADIATION MONITORS, SPACE BIOLOGY, NUCLEAR RADIATION (U)
IDENTIFIERS: EXOBIOLOGY (U)

CAREFULLY ESTABLISHED PREMISSION PLANNING DOSES AND MAXIMUM OPERATIONAL DOSE LIMITS ARE CLEARLY ENHANCED BY CLINICAL JUDGEMENTS WHEN GO-NO-GO DECISIONS ARE MADE IN THE EVENT OF AN ASTRONAUT'S EXPOSURE TO IONIZING RADIATION. THE VERY NATURE OF EXTENDED LUNAR MISSIONS (EXPLORATION) AND LONG DURATION LOW EARTH ORBIT MISSIONS ARE CLEAR CASES FOR EVALUATING MAN'S CLINICAL RESPONSE BEFORE GO-NO-GO DECISIONS ARE MADE. THERE ARE WELL IDENTIFIABLE DECISION POINTS IN MISSION PLANS THAT ARE BEST JUDGED BY CLINICAL RESPONSES IF THE MISSION IS TO AVOID PERFORMANCE DECREMENT AT CRITICAL TIMES, I.E., AT THE PEAK OF ASTRONAUT ACTIVITY: DESCENT, EVA, ASCENT, RENDEZVOUS, TRANSFER, ETC. CAREFUL ON-BOARD MONITORING OF THE ASTRONAUT'S CONDITION AND JUDICIOUS RECORDING AND INTERPRETATION OF ACTUAL RADIATION MANIFESTATIONS WITH RESPECT TO TIME CAN AND SHOULD DISSUADE PREMATURE OR UNFOUNDED DECISIONS. THIS PHILOSOPHY HAS ITS GREATEST MERIT IF ONE ACCEPTS THE TENET THAT MAN IS IN THE SYSTEM TO MAKE OBSERVATIONAL JUDGMENTS AND ASSESSMENTS. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD- 714 326 6/16
WALTER REED ARMY INST OF RESEARCH WASHINGTON D C

EFFECT OF COBALT UPON IRON ABSORPTION (34873). (U)

JAN 70 4P SCHADE,STANLEY G. ;FELSHER, BERTRAM F. ;GLADER,BERTIL E. ;CONRAD,MARCEL E. ;

UNCLASSIFIED REPORT
AVAILABILITY: PUB. IN PROCEEDINGS OF THE SOCIETY FOR EXPERIMENTAL BIOLOGY AND MEDICINE, V134 N3 P741-743 JUL 70.

DESCRIPTORS: (*IRON, ABSORPTION(BIOLOGICAL)), (*COBALT, IRON), METABOLISM, INTESTINES, RATS, INHIBITION, HEMATOLOGY (U)

THE ADDITION OF COBALT TO ORAL TEST DOSES OF RADIOIRON DECREASES IRON ABSORPTION. STUDIES WERE PERFORMED IN RATS TO DETERMINE THE SITE AND MECHANISMS OF THIS INHIBITION. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD- 714 421 6/18
FOREIGN TECHNOLOGY DIV WRIGHT-PATTERSON AFB OHIO

RELATIVE BIOLOGICAL EFFECTIVENESS OF IRRADIATION--THE TIME FACTOR IN IRRADIATION, (U)

SEP 70 301P DARENSKAYA,N. G. ;KOZNOVA, L. B. ;AKOEV,I. G. ;NEVSKAYA,G. F. ;
REPT. NO. FTD-HC-23-402-69
PROJ: FTD-60101
TASK: DIA-T69-01-14

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: EDITED TRANS. OF MONO. OTNOSITELNAYA BIOLOGICHESKAYA EFFEDTIVNOST IZLUCHENII. FAKTOR VREMENI OBLUCHENIYA, N.P., 1968 P1-57, 70-139, 169-329.

DESCRIPTORS: (*RADIATION EFFECTS, DOSE RATE), RADIOBIOLOGY, RADIATION DOSAGE, NUCLEAR RADIATION, X RAYS, GAMMA RAYS, PROTONS, USSR (U)
IDENTIFIERS: TRANSLATIONS (U)

THE BOOK ANALYZES DATA FROM THE LITERATURE AND THE AUTHORS' ORIGINAL DATA ON THE RELATIVE BIOLOGICAL EFFECTIVENESS OF VARIOUS IRRADIATION TYPES. CERTAIN REGULAR RELATIONSHIPS ARE ESTABLISHED. RBE (RELATIVE BIOLOGICAL EFFECTIVENESS) COEFFICIENTS FOR VARIOUS IRRADIATIONS HAVE BEEN ESTABLISHED FOR VARIOUS ANIMAL SPECIES AND BIOLOGICAL GROUPS. CLINICAL SYMPTONS OF RADIATION SICKNESS CAUSED BY VARIOUS RAYS HAVE BEEN STUDIED AND SYSTEMATIZED. SIMILARLY, THE AUTHORS HAVE SYSTEMATIZED DATA OBTAINED FROM INVESTIGATIONS OF THE IRRADIATION TIME FACTOR, METHODOLOGICAL APPROACHES TO THE STUDY OF THE DOSE STRENGTH, FRACTIONIZATION, AND THE TOTAL TIME OF IRRADIATION. CONCLUSIONS ARE DRAWN FROM DATA CONCERNING THE EFFECTS OF THE DOSE STRENGTH ON MODEL SYSTEMS AND VARIOUS LIVE ORGANISMS, AS WELL AS ESTABLISHED PATTERNS IN THE EFFECT OF VARIOUS RANGES OF DOSE STRENGTH IN VARIOUS KINDS OF RADIATION SICKNESS. A SIMILAR ANALYSIS MADE IT POSSIBLE TO EVALUATE AND PRESENT INFORMATION ON THE MECHANISM THROUGH WHICH VARIOUS IRRADIATION DOSES AFFECT BIOLOGICAL REACTIONS. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD- 715 018 6/1 6/16
CENTRE D'ETUDE DE L'ENERGIE NUCLEAIRE MOL (BELGIUM)

PENETRATION AND FATE OF EXOGENOUS DNA INTO CELLS OF NORMAL AND IRRADIATED MAMMALIAN TISSUES. (U)

DESCRIPTIVE NOTE: FINAL TECHNICAL REPT.,
AUG 70 31P LEDOUX,LUCIEN ;CHARLES,POL ;
MAISIN,JEAN-RENE ;MATTELIN,GILBERT ;REMY,
JACQUES ;
CONTRACT: DAJA37-69-C-1106
PROJ: DA-2-N-061102-B-71-D
MONITOR: ARDG(E) E-1294

UNCLASSIFIED REPORT

DESCRIPTORS: (*RADIOBIOLOGY, DEOXYRIBONUCLEIC ACIDS), (*DEOXYRIBONUCLEIC ACIDS, CELLS(BIOLOGY)), (*CELLS(BIOLOGY), RADIOBIOLOGY), PENETRATION, ABSORPTION(BIOLOGICAL), MAMMALS, NEOPLASMS, TISSUES(BIOLOGY), LABELED SUBSTANCES, X RAYS, RADIATION EFFECTS, RECOVERY, BELGIUM (U)

A CSCl GRADIENT ANALYSIS OF THE FATE OF EXOGENOUS LABELLED DNA IN ASCITES TUMOUR CELLS REVEALS THAT THOSE CELLS TAKE UP THE FOREIGN MATERIAL AND INTEGRATE IT WITH THEIR OWN DNA AS DOUBLE STRANDED MOLECULES BOUND BY COVALENT LINKAGES TO THE RECIPIENT DOUBLE STRANDED DNA. THIS HETERO DUPLEX SUBSEQUENTLY BECOMES REPLICATED BY THE DIVIDING CELLS AND IS TRANSMITTED TO THE PROGENY. THE IRRADIATION OF THE RECIPIENT CELLS INCREASES THE AMOUNT OF DNA THEY TAKE UP. WHEN BACTERIAL DNA IS INJECTED INTRAPERITONEALLY IN MICE, LARGE AMOUNTS OF POLYMERISED EXOGENOUS DNA APPEAR IN THE BLOOD AND CIRCULATE WITH IT. FOREIGN DNA DOES NOT ASSOCIATE WITH THE RED BLOOD CELLS, BUT IS TAKEN UP BY LIVING ORGANS AND TISSUES. THE INJECTION OF HIGH MOLECULAR DNA IN IRRADIATED MICE INTERACTS WITH THE SEQUENCE OF EVENTS WHICH FOLLOW IRRADIATION IN SUCH A WAY THAT THE MOUSE SURVIVAL IS VERY SIGNIFICANTLY IMPROVED. THE RESTORATIVE EFFECT OF A GIVEN DNA DEPENDS ON THE MOUSE STRAIN, THE DOSE-RATE AND THE TOTAL DOSE USED. (AUTHOR) (U)

UDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD- 715 541 6/1
WALTER REED ARMY INST OF RESEARCH WASHINGTON D C

FERRITIN PRODUCTION IN THE RAT SMALL INTESTINE, (U)

FEB 70 9P BERNIER,GEORGE M. ;SCHADE, STANLEY G. ;CONRAD,MARCEL E. ;

UNCLASSIFIED REPORT

AVAILABILITY: PUB. IN BRITISH JNL. OF HAEMATOLOGY, V19 N3 P361-367 SEP 70.

SUPPLEMENTARY NOTE: REVISION OF REPORT DATED 26 JAN 70.

DESCRIPTORS: (*FERRITIN, BIOSYNTHESIS), INTESTINES, RATS, METABOLISM, PHYSIOLOGY, IRON, DOSAGE, ABSORPTION(BIOLOGICAL), EXCRETION, COBALT (U)

ADMINISTRATION OF IRON TO RATS INCREASES THE AMOUNT OF (14C)AMINO ACID INCORPORATION INTO FERRITIN IN THE RAT INTESTINE. USING A SPECIFIC ANTI-RAT FERRITIN ANTISERUM, SEVERAL VARIABLES AFFECTING DE NOVO SYNTHESIS OF FERRITIN IN THE RAT INTESTINE WERE STUDIED. SYNTHESIS WAS DOSE DEPENDENT IN THE RANGE OF 1-100 MICROMOLES OF ORAL IRON WITH LARGER DOSES PRODUCING NO GREATER EFFECT. HOWEVER, SIGNIFICANT FERRITIN SYNTHESIS WAS EVOKED BY A 150 MICROMOLES DOSE OF ORAL IRON IN ANIMALS PRETREATED WITH SIMILAR DOSES OF ORAL IRON 3 AND 6 HR BEFORE THE TEST DOSE. COBALT, A CATION ABSORBED BY THE INTESTINE IN A FASHION SIMILAR TO IRON, DID NOT STIMULATE FERRITIN SYNTHESIS. ORAL AND PARENTERAL IRON ADMINISTRATION PRODUCED DIFFERENT EFFECTS ON VARIOUS SMALL INTESTINAL SEGMENTS. ORAL IRON INDUCED SYNTHESIS CHIEFLY IN THE PROXIMAL SMALL INTESTINE WHILE INTRAVENOUS IRON PRODUCED IT DOMINANTLY IN THE TERMINAL ILEUM. THESE LATTER FINDINGS ARE CONSISTENT WITH THE CONCEPT THAT FERRITIN FUNCTIONS CHIEFLY AS A BARRIER TO EXCESS IRON ABSORPTION AND AS AN IMPORTANT MECHANISM FOR IRON EXCRETION. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD- 718 315 6/2 6/18
ARMED FORCES RADIOBIOLOGY RESEARCH INST BETHESDA MD

ELECTROCARDIOGRAPHY IN A RADIATION ENVIRONMENT BY THE USE OF TELEMETRY. (U)

DESCRIPTIVE NOTE: TECHNICAL NOTE,
OCT 70 24P KIEFFER,V. A. ;TURBYFILL,
C. L. ;
REPT. NO. AFRRI-TN70-6
PROJ: DASA-NWER-XAXM
TASK: C903

UNCLASSIFIED REPORT

DESCRIPTORS: (*ELECTROCARDIOGRAPHY, *TELEMETER SYSTEMS), (*RADIOBIOLOGY, ELECTROCARDIOGRAPHY), MONITORS, TELEMETERING TRANSMITTERS, HEART, PHYSIOLOGY, ENVIRONMENT, RADIOACTIVE CONTAMINATION (U)

ELECTROCARDIOGRAPHY USING AN IMPLANTABLE RADIATION HARDENED TRANSMITTER IS DESCRIBED. THIS TELEMETRY SYSTEM ALLOWS AN INVESTIGATOR TO RECORD THE ELECTROCARDIOGRAM (ECG) OF UNRESTRAINED ANIMALS IN A RADIATION ENVIRONMENT. THE TRANSMITTER AND ITS USE IN AN INTENSE RADIATION FIELD ARE DESCRIBED. THE SELECTION OF ELECTRODE PLACEMENT, SURGICAL IMPLANTATION OF THE TRANSMITTER, AND THE TRANSMISSION AND RECEPTION OF A SIGNAL REPRESENTATIVE OF THE ELECTRICAL ACTIVITY OF THE HEART FROM WHICH AN ECG RECORDING IS MADE ARE DISCUSSED. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD- 720 589 6/18
RAND CORP SANTA MONICA CALIF

INDUCED FIELDS AND HEATING WITHIN A CRANIAL STRUCTURE IRRADIATED BY AN ELECTROMAGNETIC PLANE WAVE, (U)

NOV 70 33P SHAPIRO,A. R. ;LUTOMIRSKI, R. F. ;YURA,H. T. ;
REPT. NO. P-4458-1

UNCLASSIFIED REPORT

DESCRIPTORS: (*BRAIN, ELECTROMAGNETIC FIELDS), RADIOBIOLOGY, ELECTRICAL PROPERTIES, MICROWAVES, MEASUREMENT, ANATOMICAL MODELS (U)
IDENTIFIERS: *MICROWAVE RADIOBIOLOGY, RADIOFREQUENCY HEATING (U)

THE INDUCED FIELDS AND THE STATIC HEATING PATTERNS WITHIN A MULTI-LAYERED SPHERICAL MODEL THAT APPROXIMATES THE PRIMATE CRANIAL STRUCTURE IRRADIATED BY PLANE WAVES IN THE MICROWAVE SPECTRUM ARE CALCULATED. THE RELATION OF THE MODEL TO THE BIOLOGICAL STRUCTURE AND THE SENSITIVITY OF THE RESULTS TO THE UNCERTAINTIES IN THE DIMENSIONS AND ELECTRICAL PROPERTIES OF BIOLOGICAL MATERIAL ARE INVESTIGATED. A METHOD OF SOLUTION FOR BOTH THE SCATTERED AND INTERIOR FIELDS FOR A SPHERE WITH AN ARBITRARY NUMBER OF ELECTRICALLY DIFFERENT CONCENTRIC LAYERS IS DEVELOPED IN A FORM READILY AMENABLE TO MACHINE COMPUTATION. IT IS SHOWN THAT THE SEMI-INFINITE SLAB MODEL IS INAPPROPRIATE FOR CALCULATING THE MICROWAVE RADIATION DOSAGE TO THE HUMAN HEAD AND SIMILAR STRUCTURES. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD- 720 601 6/3 6/6
INTERNATIONAL INST FOR SCIENTIFIC COOPERATION ULM AN DER DONAU (WEST GERMANY)

SEMINAR ON CELL AND CELL SYSTEM ECOLOGY, HELD IN PARIS, (FRANCE), 13-15 JUNE 1969, (U)

DEC 70 39P FLIEDNER, THEODOR M. ;
CONTRACT: DA-ERO-591-69-G-01
MONITOR: ERO E-14-41-P

UNCLASSIFIED REPORT

DESCRIPTORS: (*CELLS(BIOLOGY), *ECOLOGY), (*SYMPOSIA, *CYTOLOGY), PHYSIOLOGY, MILITARY MEDICINE, MAMMALS, ENVIRONMENT, ATMOSPHERES, BLOOD CELLS, RADIOBIOLOGY, DISEASES, HEALING, WOUNDS AND INJURIES, TRANSPLANTATION, ADAPTATION(PHYSIOLOGY), MICROBIOLOGY, WEST GERMANY (U)

CONTENTS: CELLULAR ECOLOGY - A NEW BRANCH OF CELL PHYSIOLOGY; RELEVANCE OF CELLULAR ECOLOGY FOR MILITARY MEDICINE; ECOLOGICAL EXAMPLES OF RELEVANCE TO MILITARY MEDICINE AT THE LEVEL OF THE WHOLE ORGANISM (INTERACTION BETWEEN ATMOSPHERIC ENVIRONMENT AND THE MAMMALIAN ORGANISM, INTERACTION BETWEEN MICROBIAL ENVIRONMENT AND THE MAMMALIAN ORGANISM, INTERACTION BETWEEN THE PHYSICO-CHEMICAL ENVIRONMENT AND THE MAMMALIAN ORGANISM); ECOLOGICAL EXAMPLES OF RELEVANCE TO MILITARY MEDICINE AT THE CELL SYSTEM LEVEL (WOUND HEALING, ECOLOGICAL PROBLEMS IN CELL TRANSPLANTATION). (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD- 721 699 6/18
ARMED FORCES RADIOBIOLOGY RESEARCH INST BETHESDA MD

SERIAL RIB MARROW ASPIRATION TECHNIQUE AND MYELOGRAM FOR ADULT BEAGLES. (U)

DESCRIPTIVE NOTE: TECHNICAL NOTE,
JAN 71 20P WEST,J. E. ;MITCHELL,F. A. ;VAGHER,J. P. ;
REPT. NO. AFRRI-TN71-1
PROJ: DASA-NWER-XAXM
TASK: D907

UNCLASSIFIED REPORT

DESCRIPTORS: (*BONE MARROW, *RADIATION EFFECTS), DOGS, CELLS(BIOLOGY), THORAX, RADIOBIOLOGY (U)

A RAPID TECHNIQUE FOR OBTAINING MULTIPLE SERIAL BONE MARROW ASPIRATION SAMPLES FROM RIBS OF DOGS FOR DIFFERENTIAL AND TOTAL MARROW CELL COUNTS IS DESCRIBED. STATISTICAL ANALYSES OF DATA PRESENTED IN A MYELOGRAM FROM 216 RIB MARROW ASPIRATES FROM 27 ADULT MALE BEAGLES INDICATED NO SIGNIFICANT DIFFERENCE IN THE CELLULAR COMPOSITION OF MARROW FROM SEVERAL RIBS SAMPLED BY THIS PROCEDURE. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD- 722 324 6/18
NAVAL MEDICAL RESEARCH INST BETHESDA MD

AN EXAMINATION OF REGENERATING HEPATIC TISSUE FOLLOWING IN VIVO EXPOSURE TO R. F. RADIATION. (U)

DESCRIPTIVE NOTE: MEDICAL RESEARCH INTERIM REPT., MAR 71 30P MDLEES,BYRON D. ;FINCH, EDWARD D. ;ALBRIGHT,MARION L. ;
PROJ: MF12.524
TASK: MF12.524.015
MONITOR: NAVMED MF12.524.015-0001B-1

UNCLASSIFIED REPORT

DESCRIPTORS: (*TISSUES(BIOLOGY), *REGENERATION), (*RADIO WAVES, RADIATION EFFECTS), (*CHROMOSOMES, RADIATION EFFECTS), (*RADIATION EFFECTS, MITOSIS), GENETICS, RADIOBIOLOGY, LIVER, RADIOFREQUENCY (U)

IN ORDER TO ELUCIDATE POSSIBLE GENETIC CONSEQUENCES OF EXPOSURE TO RADIO FREQUENCY RADIATION, ADULT MALE RATS HAVE BEEN CONTINUOUSLY IRRADIATED FOR UP TO 44 HOURS AFTER THEY HAVE UNDERGONE A PARTIAL HEPATECTOMY. THE EXPERIMENT, WHICH INVOLVES MONITORING MITOTIC ACTIVITY AND CHROMOSOMAL ABERRATIONS IN THE REGENERATING LIVER, WAS CHOSEN BECAUSE OF ITS DEMONSTRATED SENSITIVITY TO IONIZING RADIATION DAMAGE. THE EFFECTS OF BOTH PULSED AND CW IRRADIATION AT 13.12 MHZ WERE INVESTIGATED. ALL EXPERIMENTS WERE CONDUCTED WITH RADIATION POWER LEVELS JUST BELOW THE HEATING THRESHOLD. AN EXTENSIVE COMPARISON OF THE RESULTS FOR CONTROL AND EXPERIMENTAL ANIMALS HAS FAILED TO REVEAL ANY STATISTICALLY SIGNIFICANT DIFFERENCES IN MITOTIC ACTIVITY OR THE NUMBER OF CHROMOSOMAL ABERRATIONS. IN ADDITION, HISTOLOGIC AND ELECTRON MICROSCOPIC OBSERVATIONS HAVE REVEALED NO EVIDENCE OF TISSUE DAMAGE. RESULTS OF THE EXPERIMENT ARE DISCUSSED VIS-A-VIS PREVIOUSLY REPORTED IN VITRO EXPERIMENTS. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD- 724 294 6/18 6/16
ARMED FORCES RADIOBIOLOGY RESEARCH INST BETHESDA MD

HUMORAL ANTIBODY RESPONSES IN NEWBORN MONKEYS AFTER MIXED GAMMA-NEUTRON IRRADIATION. (U)

DESCRIPTIVE NOTE: SCIENTIFIC REPT.,
FEB 71 17P BOWSER,B. T. ;EXUM,E. D.
;
REPT. NO. AFRRI-SR71-1
PROJ: DASA-NWER-XAXM
TASK: C903

UNCLASSIFIED REPORT

DESCRIPTORS: (*RADIOBIOLOGY, *IMMUNOLOGY), (*RADIATION EFFECTS, ANTIGEN ANTIBODY REACTIONS), IMMUNITY, GAMMA RAYS, NUCLEAR RADIATION, MONKEYS (U)

NEWBORN MONKEYS EXPOSED TO 200 RADS OF MIXED GAMMA-NEUTRON RADIATION AND SUBSEQUENTLY INJECTED WITH BOVINE SERUM ALBUMIN (BSA), INCORPORATED IN SALINE, PRODUCED ANTIBODY TITERS THAT WERE SIGNIFICANTLY HIGHER THAN THOSE OBSERVED IN THE CORRESPONDING NONIRRADIATED CONTROLS ($P<0.05$). THE TITERS OF IRRADIATED ANIMALS INJECTED WITH BSA INCORPORATED IN ADJUVANT (INCOMPLETE FREUND TYPE) WHILE HIGHER THAN THOSE OF THE NONIRRADIATED CONTROLS WERE NOT SIGNIFICANTLY DIFFERENT. IRRADIATED MONKEYS RECEIVING BSA IN ADJUVANT AND NEOPLASTIC TISSUE SIMULTANEOUSLY EXHIBITED SIGNIFICANTLY LOWER TITERS THAN THOSE MONKEYS WHICH WERE ADMINISTERED NEOPLASTIC TISSUES 4 OR MORE DAYS AFTER BSA INJECTIONS. THE ENHANCED ANTIBODY RESPONSES SEEN IN THE NEWBORN MONKEY ARE VIEWED AS UNUSUAL RESPONSES WHILE THE DEPRESSED RESPONSES ARE RECOGNIZED AS MORE TYPICAL. POSITIVE EXPLANATIONS FOR BOTH RESPONSES ARE DISCUSSED. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD- 726 557 6/18
SCHOOL OF AEROSPACE MEDICINE BROOKS AFB TEX

UTILIZATION OF LASERS IN BIOLOGICAL STUDIES (OB ISPOLZOVANII LAZEROV V BIOLOGICHESKIKH ISSLEDOVANYAKH), (U)

71 19P RUBIN,L. B. ;
REPT. NO. SAM-TT-R-1084-0771

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: TRANS. FROM USPEKHI SOVREMENNOI BIOLOGII (USSR) V67(2) 1969.

DESCRIPTORS: (*RADIOBIOLOGY, *LASERS), BIOLOGY, PHOTOCHEMICAL REACTIONS, BIOPHYSICS, RADIATION EFFECTS, PHYSIOLOGY, USSR (U)
IDENTIFIERS: TRANSLATIONS (U)

THE ARTICLE DISCUSSES THE QUESTIONS ASSOCIATED WITH WIDE POSSIBILITIES OF LASER UTILIZATION IN EXPERIMENTAL BIOLOGY. THE AUTHOR ALSO EMPHASIZES THE POSSIBILITY OF STUDIES OF ALL POSSIBLE ACTION MECHANISMS DURING THE INTERACTION OF LASER RADIATION WITH BIOLOGICAL SYSTEMS. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD- 728 416 6/18
ARMED FORCES RADIOBIOLOGY RESEARCH INST BETHESDA MD

DOSIMETRY FOR NEUTRON RADIATION STUDIES IN MINIATURE PIGS. (U)

DESCRIPTIVE NOTE: TECHNICAL NOTE,
MAY 71 29P VERRELLI,D. M. ;
REPT. NO. AFRRI-TN71-2
PROJ: DASA-NWER-XAXM

UNCLASSIFIED REPORT

DESCRIPTORS: (*RADIOBIOLOGY, *SWINE), (*NEUTRONS, DOSIMETERS), LABORATORY ANIMALS, LETHAL DOSAGE, INTESTINES, BRAIN, GAMMA RAYS, IONIZATION CHAMBERS, NEUTRON SPECTRUM (U)

MINIATURE PIG CADAVERS WERE INSTRUMENTED AND IRRADIATED IN A NEUTRON FIELD (INCIDENT NEUTRON TO GAMMA KERMA RATIO OF 5-10) AND A GAMMA RAY FIELD (INCIDENT GAMMA TO NEUTRON KERMA RATIO OF 10-15) FROM THE AFRRI-TRIGA REACTOR. CHARACTERIZATION OF THE RADIATION FIELD INCLUDED FREE-IN-AIR MEASUREMENTS OF THE NEUTRON AND GAMMA RAY COMPONENTS EMPLOYING THE PAIRED CHAMBER CONCEPT. DEPTH-DOSE PATTERNS ACROSS THE BRAIN AND INTESTINAL REGIONS WERE MEASURED FOR EACH OF THE RADIATION FIELDS EMPLOYING A MINIATURE TISSUE-EQUIVALENT IONIZATION CHAMBER. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD- 729 161 6/18
JOHNS HOPKINS UNIV BALTIMORE MD DEPT OF PHARMACOLOGY

THE EFFECT OF MICROWAVE IRRADIATION ON THE TURNOVER RATE OF SEROTONIN AND NOREPINEPHRINE AND THE EFFECT ON MONOAMINE METABOLIZING ENZYMES. (U)

DESCRIPTIVE NOTE: REPT. NO. 2 (FINAL), JUN 67-MAY 71,
AUG 71 33P SNYDER,SOLOMON H. ;
CONTRACT: DADA17-69-C-9144

UNCLASSIFIED REPORT

DESCRIPTORS: (*SEROTONIN, *RADIATION EFFECTS), (*MICROWAVES, RADIATION EFFECTS), (*NEUROLOGY, RADIATION EFFECTS), (*LEVARTERENOL, RADIATION EFFECTS), RADIOBIOLOGY, RATS, BRAIN, ENZYMES, IN VIVO ANALYSIS, TRYPTOPHAN (U)
IDENTIFIERS: *MICROWAVE RADIOBIOLOGY, *NEUROCHEMISTRY, DECARBOXYLASES, *ELECTROMAGNETIC RADIATION HAZARDS (U)

THE RESEARCH PROGRAM WAS DIRECTED AT DETECTING NEUROCHEMICAL ALTERATIONS IN LABORATORY ANIMALS EXPOSED TO MICROWAVE IRRADIATION AT LEVELS OF 10 MW/SQ CM. AT THIS LOW LEVEL OF IRRADIATION, IT WAS FOUND THAT AFTER 7 DAYS EXPOSURE FOR 8 HOURS PER DAY, THERE WAS A MARKED SLOWING OF THE SEROTONIN TURNOVER RATE WHICH WAS ACCOMPANIED BY A SLIGHT DECREASE IN THE ACTIVITY OF TRYPTOPHAN DECARBOXYLASE AND 5-HYDROXYTRYPTOPHAN DECARBOXYLASE. THIS SUGGESTS THAT MICROWAVE IRRADIATION DECREASED THE FIRING RATE OF SEROTONIN NEURONS IN THE BRAIN. SINCE THESE NEURONS ARE KNOWN TO PARTICIPATE IN THE REGULATION OF SLEEP AND WAKEFULNESS AS WELL AS BODY TEMPERATURE, THE FINDINGS MAY ACCOUNT FOR CERTAIN OF THE BEHAVIORAL EFFECTS PURPORTEDLY PRODUCED BY MICROWAVE EXPOSURE. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD- 732 874 6/1 6/16
CENTRE D'ETUDE DE L'ENERGIE NUCLEAIRE MOL (BELGIUM)

PENETRATION AND FATE OF EXOGENOUS DNA IN CELLS OF NORMAL AND IRRADIATED MAMMALIAN TISSUES. (U)

DESCRIPTIVE NOTE: FINAL TECHNICAL REPT.,
AUG 71 54P CHARLES,POL ;WATTERS,C. ;
REMY,JACQUES ;LEDOUX,LUCIEN ;
CONTRACT: DAJA37-70-C-2329
MONITOR: ARDG(E) E-1294-71

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO FINAL TECHNICAL REPORT DATED AUG 70, AD-715 018.

DESCRIPTORS: (*DESOXYRIBONUCLEIC ACIDS, *CELLS(BIOLOGY)), (*RADIOBIOLOGY, DESOXYRIBONUCLEIC ACIDS), (*RADIOTHERAPY, DESOXYRIBONUCLEIC ACIDS), NEOPLASMS, BACTERIA, ABSORPTION(BIOLOGICAL), MAMMALS, TISSUES(BIOLOGY), LABELED SUBSTANCES, BELGIUM (U)

LABELLED BACTERIAL DNA INTRODUCED INTO RATS VIA THE CAROTID IS AT ONCE DISTRIBUTED AMONG DIFFERENT ORGANS, SOME BECOMING PROGRESSIVELY INCORPORATED IN THE ENDOGENOUS DNA. THESE AND OTHER RESULTS SUGGEST THAT DOUBLE STRANDED ENDOGENOUS AND EXOGENOUS DNAS ARE COVALENTLY COMBINED. HEAVY LABELLED MOLECULES CAN BE FOUND IN DNA PREPARED FROM ORGANS OF RATS INFUSED WITH UNLABELLED MICROCOCCUS LYSODEIKTICUS DNA AND TRITIATED THYMIDINE. IN ASCITES TUMOUR CELLS, PENTOBARBITAL DECREASES INCORPORATION OF TRITIATED THYMIDINE WITHOUT MODIFYING UPTAKE OF LABELLED BACTERIAL DNA. ON THE OTHER HAND, DEAE-DEXTRAN INCREASES UPTAKE OF BACTERIAL DNA, BUT DNASE REMOVES 90% OF THE LABEL TAKEN UP. THE RELATIONSHIP OF THESE RESULTS TO THE POST-IRRADIATION THERAPY WITH DNA IS DISCUSSED. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD- 742 513 6/18
ARMY FOREIGN SCIENCE AND TECHNOLOGY CENTER CHARLOTTESVILLE VA

MORPHOLOGICAL CHARACTERISTICS OF THE BIOLOGICAL ACTION PRODUCED BY MAGNETIC FIELDS (MORFOLOGICHESKAYA KHARAKTERISTIKA BIOLOGICHESKOGO DEISTVIYA MAGNITNYKH POLEI), (U)

JAN 72 20P TOROPTSEV,I. V. ;
REPT. NO. FSTC-HT-23-349-72
PROJ: FSTC-T7023012301

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: TRANS. OF ARKHIV PATOLOGII (USSR) V30 N3 P3-12 1968, BY ALBERT L. PEABODY.

DESCRIPTORS: (*ELECTROMAGNETIC FIELDS, *RADIOBIOLOGY), RADIATION EFFECTS, RADIATION DOSAGE, BLOOD CIRCULATION, LYMPH, LUNG, HISTOLOGY, PATHOLOGY, TISSUES(BIOLOGY), CELLS(BIOLOGY), CAPILLARIES, SEX GLANDS, USSR (U)
IDENTIFIERS: TRANSLATIONS (U)

THE AUTHOR PRESENTS A LITERATURE SURVEY ON THE BIOLOGICAL ACTION OF MAGNETIC FIELDS AND THE RESULTS OF EXPERIMENTAL-MORPHOLOGICAL INVESTIGATIONS, CARRIED OUT AT HIS LABORATORY. AS DEMONSTRATED, DIRECT MAGNETIC FIELD, 7,000 OERSTED IN INTENSITY, AND AN INDIRECT ON (50 CYCLES PER SEC.), 200 OERSTED IN INTENSITY POSSESSED A MARKED BIOLOGICAL EFFECT. IN THE MENTIONED PHYSICAL CONDITIONS AND AN EQUAL EXPOSURE (6 1/2 HOURS) THE INDIRECT FIELD PROVED TO BE MORE ACTIVE. DIRECT AND INDIRECT MAGNETIC FIELDS PROVED TO INDUCE DISTURBANCE OF HEMODYNAMICS AND LYMPH CIRCULATION. HISTOLOGICAL INVESTIGATIONS DEMONSTRATED A PARETIC DILATATION OF CAPILLARIES, EDEMA OF THE LUNGS AND OF THE TESTICLES. DYNAMIC INVESTIGATIONS POINTED TO NORMALIZATION OF MORPHOLOGICAL PICTURE 30 DAYS AFTER THE FIELD ACTION. THE MAGNETIC FIELDS (DIRECT AND INDIRECT) FAILED TO DEPRESS THE REGENERATION. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD- 744 594 6/18
ADVISORY GROUP FOR AEROSPACE RESEARCH AND DEVELOPMENT
PARIS (FRANCE)

SPECIAL BIOPHYSICAL PROBLEMS IN AEROSPACE MEDICINE. PART III. (U)

DESCRIPTIVE NOTE: CONFERENCE PROCEEDINGS NO. 95,
MAR 72 126P PFISTER,A. M. ;
REPT. NO. AGARD-CP-95-PT-3

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: PRESENTED AT THE AEROSPACE MEDICAL PANEL SPECIALIST MEETING HELD IN LUCHON (FRANCE) 30 SEP-1 OCT 71. SEE ALSO AD-742 497. NATO FURNISHED. TEXT OF SOME CHAPTERS IN FRENCH.

DESCRIPTORS: (*RADIOBIOLOGY, AEROSPACE MEDICINE), (*AEROSPACE MEDICINE, *HEALTH PHYSICS), (*AVIATION MEDICINE, HEALTH PHYSICS), BIOPHYSICS, RADIATION DOSAGE, RADIATION EFFECTS, ELECTROMAGNETIC RADIATION, LASERS, COSMIC RAYS, SYMPOSIA, FRANCE (U)

THE MORE IMPORTANT ASPECTS OF PHYSIOLOGICAL AND CLINICAL PROBLEMS IN AVIATION MEDICINE ARE GENERALLY WELL KNOWN AT THIS TIME. IT IS NOT THE SAME FOR BIOPHYSICAL PROBLEMS WHICH CONFRONT MAN WITH VERY NEW ENVIRONMENTAL FACTORS SUCH AS SPACE COSMIC RAYS, ELECTROMAGNETIC AND MAGNETIC FIELDS, LASERS ETC. THE BIOLOGICAL EFFECTS OF THESE FACTORS ARE OFTEN INSUFFICIENTLY KNOWN. THIS FIRST MEETING STATES THESE PROBLEMS, REVIEWS THE FINDINGS OF RESEARCH ALREADY CARRIED OUT, AND POINTS OUT THE MAIN TOPICS TO BE CLARIFIED AS SOON AS POSSIBLE. IT IS DIVIDED INTO FOUR PARTS: BIOLOGICAL EFFECTS OF COSMIC RAYS; BIOLOGICAL EFFECTS OF ELECTROMAGNETIC WAVES; BIOLOGICAL EFFECTS OF MAGNETIC FIELDS; BIOLOGICAL EFFECTS OF LASERS. (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD- 745 775 6/18
ARMED FORCES RADIOBIOLOGY RESEARCH INST BETHESDA MD

ANNUAL RESEARCH REPORT 1 JULY 1970-30 JUNE 1971. (U)

JUN 71 67P
REPT. NO. AFRRI-ARR-5

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO AD-704 167.

DESCRIPTORS: (*RADIOBIOLOGY, SCIENTIFIC RESEARCH), REVIEWS, RADIATION DOSAGE, GASTROINTESTINAL SYSTEM, IMMUNOLOGY, HEMOPOIETIC SYSTEM, BIOCHEMISTRY, PHARMACOLOGY, CYTOLOGY, BONE MARROW, PHYSIOLOGY, BEHAVIOR, MAMMALS, MORTALITY RATES, RADIATION INJURIES, RADIATION EFFECTS, RADIATION DOSAGE (U)

THE REPORT CONTAINS A SUMMARY OF THE RESEARCH PROJECTS OF THE ARMED FORCES RADIOBIOLOGY RESEARCH INSTITUTE FOR THE PERIOD 1 JULY 1970 TO 30 JUNE 1971. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD- 747 539 9/2 6/18 6/5
CALIFORNIA UNIV LOS ANGELES CALIF DEPT OF COMPUTER SCIENCE

PATTERN RECOGNITION, SIMULATION, AND DECISION-MAKING, (U)

AUG 72 31P KLINGER,ALLEN ;RYNELL,INGA ;
CONTRACT: AF-AFOSR-1915-70
PROJ: AF-9769
MONITOR: AFOSR TR-72-1568

UNCLASSIFIED REPORT

DESCRIPTORS: (*PATTERN RECOGNITION, RADIOBIOLOGY), STATISTICAL ANALYSIS, DECISION THEORY, RADIOGRAPHY, MATHEMATICAL MODELS, SIMULATION, DIAGNOSIS(MEDICINE), RADIOACTIVE ISOTOPES (U)
IDENTIFIERS: STATISTICAL DECISION THEORY, COMPUTERIZED SIMULATION (U)

SIMULATION TECHNIQUES ARE APPLIED TO A BIOMEDICAL PATTERN RECOGNITION APPLICATION: RADIOISOTOPE SCANNING. RESULTS OF A SIMULATION EXPERIMENT ARE PRESENTED FOR AN IDEALIZED MODEL OF THIS APPLICATION. A DESCRIPTION OF SIMULATION AS A PROCESS IS GIVEN ALONG WITH AN ABSTRACT FRAMEWORK WHICH IDENTIFIES ITS KEY CONSTITUENT ELEMENTS. ONE OF THESE, THE EVALUATION CRITERION, IS DISCUSSED AND ITS IMPORTANT ROLE IN PRACTICAL SIMULATION EXPERIMENTS IS DELINEATED. AN EXAMPLE OF THIS CRITERION IS GIVEN FOR THE RADIOISOTOPE SCANNING APPLICATION, AND ITS RELATIONSHIP TO THE THEORY OF STOPPING RULES IS MENTIONED. A PRELIMINARY EVALUATION OF THE EFFECTIVENESS OF SIMULATION FOR EXPLORING THE PATTERN RECOGNITION/IMAGE ENHANCEMENT CONCEPTS CONCLUDES THE PAPER. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD- 749 763 6/18
FOREIGN TECHNOLOGY DIV WRIGHT-PATTERSON AFB OHIO

THE DISTRIBUTION OF DOSE IN TIME DURING RADIATION THERAPY OF MALIGNANT TUMORS, (U)

MAY 72 27P BALMUKHANOV,S. B. ;
ZHOLKIVER,K. I. ;
REPT. NO. FTD-MT-24-1571-71

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: EDITED MACHINE TRANS. OF MEDITSINSKAYA RADIOLOGIYA (USSR) V13 N2 P3-14 1968, BY CHARLES T. OSTERTAG, JR.

DESCRIPTORS: (*RADIOTHERAPY, *RADIATION DOSAGE), CANCER, NEOPLASMS, X RAYS, RADIATION INJURIES, TISSUES(BIOLOGY), DOSE RATE, DOSIMETERS, USSR (U)
IDENTIFIERS: TRANSLATIONS (U)

IN 1920 SEITZ AND WINTZ PROPOSED THE METHOD OF THE SINGLE MASSIVE IRRADIATION OF MALIGNANT TUMORS, HOWEVER THEY SOON REJECTED IT BECAUSE X-RAY THERAPY COULD NOT ENSURE THE NECESSARY DEGREE OF STERILIZATION OF THE TUMOR. FURTHERMORE SERIOUS DAMAGES TO NORMAL TISSUES APPEARED SIMULTANEOUSLY. THE MAGNITUDE OF CARCINOCIDAL DOSE IS DETERMINED TO A CONSIDERABLE DEGREE BY THE REGULARITIES IN THE RELATIONSHIP OF RADIOSENSITIVITY OF VARIOUS TISSUES WHICH WERE REVEALED ALREADY IN 1905 BY BERGONIE AND TRIBONDEAU. ANCEL AND VINTEMBERGER ESTABLISHED THAT THE MANIFESTATION OF RADIATION INJURY DEPENDS ON THE RATE OF MULTIPLICATION OF CELLS WHICH IS CHARACTERISTIC FOR ONE OR ANOTHER TISSUE. THESE INVESTIGATIONS SERVED AS THE PREMISE FOR VARIOUS SYSTEMS FOR THE DISTRIBUTION OF DOSE IN TIME. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD- 750 271 6/18
NAVAL MEDICAL RESEARCH INST BETHESDA MD

BIBLIOGRAPHY OF REPORTED BIOLOGICAL PHENOMENA ('EFFECTS') AND CLINICAL MANIFESTATIONS ATTRIBUTED TO MICROWAVE AND RADIO-FREQUENCY RADIATION. (U)

DESCRIPTIVE NOTE: MEDICAL RESEARCH INTERIM REPT. NO. 2 (REVISED),
APR 72 106P GLASER,ZORACH R. ;
PROJ: MF12.524.015

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SUPERSEDES REPORT DATED 4 OCT 71, AD-734-391.

DESCRIPTORS: (*ELECTROMAGNETIC RADIATION, RADIATION EFFECTS), (*RADIOBIOLOGY, *BIBLIOGRAPHIES), MICROWAVES, RADIO WAVES, RADIATION HAZARDS (U)
IDENTIFIERS: *MICROWAVE RADIOBIOLOGY, ELECTROMAGNETIC RADIATION HAZARDS (U)

MORE THAN 2300 REFERENCES ON THE BIOLOGICAL RESPONSES TO RADIO FREQUENCY AND MICROWAVE RADIATION, PUBLISHED UP TO APRIL 1972, ARE INCLUDED IN THIS BIBLIOGRAPHY OF THE WORLD LITERATURE. PARTICULAR ATTENTION HAS BEEN PAID TO THE EFFECTS ON MAN ON NON-IONIZING RADIATION AT THESE FREQUENCIES. THE CITATIONS ARE ARRANGED ALPHABETICALLY BY AUTHOR, AND CONTAIN AS MUCH INFORMATION AS POSSIBLE SO AS TO ASSURE EFFECTIVE RETRIEVAL OF THE ORIGINAL DOCUMENTS. SOVIET AND EAST EUROPEAN LITERATURE IS INCLUDED IN DETAIL. AN OUTLINE OF THE EFFECTS WHICH HAVE BEEN ATTRIBUTED TO RADIO FREQUENCY AND MICROWAVE RADIATION IS INCLUDED AS CHAPTER 1. THE REVISED REPORT (WHICH SUPERSEDES DDC REPORT AD-734 391) IS UPDATED WITH THE INCLUSION OF THREE SUPPLEMENTARY LISTINGS, AND HAS INCORPORATED MANY CORRECTIONS AND ADDITIONS TO THE ORIGINAL 2100 CITATIONS. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD- 750 448 6/13
NAVAL MEDICAL RESEARCH INST BETHESDA MD

METABOLISM OF 'RICKETTSIA TYPHI' AND RICKETTSIA AKARI' IN IRRADIATED L CELLS. (U)

DESCRIPTIVE NOTE: MEDICAL RESEARCH PROGRESS REPT. NO. 30, MAR 72 10P WEISS,EMILIO ;NEWMAN, LAWRENCE ;GRAYS,RICHARD ;GRENN,ANN ;
PROJ: MR041.05.01

UNCLASSIFIED REPORT
AVAILABILITY: PUB. IN INFECTION AND IMMUNITY, V6 N1 P50-57 JUL 72.

DESCRIPTORS: (*RICKETTSIA TYPHI, METABOLISM), (*RICKETTSIA AKARI, METABOLISM), GROWTH(PHYSIOLOGY), TISSUE CULTURE CELLS, RADIOBIOLOGY, DEOXYRIBONUCLEIC ACIDS, BIOSYNTHESIS, PROTEINS, NUCLEIC ACIDS, THYMIDINES (U)
IDENTIFIERS: CYCLOHEXIMIDE (U)

L CELLS THAT HAD BEEN EXPOSED TO 3,000 R OF 60CO THE PREVIOUS DAY WERE USED TO STUDY THE GROWTH AND METABOLISM OF RICKETTSIA TYPHI AND R. AKARI. VIABLE (UNIRRADIATED) L CELLS WERE USED TO STUDY THE EFFECT OF RICKETTSIAL INFECTION OF HOST-CELL METABOLISM. AT VARIOUS INTERVALS, CYCLOHEXIMIDE WAS ADDED TO ONE SET OF CULTURES, TO INHIBIT EUKARYOTIC PROTEIN AND DEOXYRIBONUCLEIC ACID (DNA) METABOLISM; PHOSPHATE-BUFFERED SALINE (PBS) WAS ADDED TO ANOTHER SET. INFECTIVITY OF R. TYPHI INCREASED TO A PEAK OF 150 TO 400 HEMOLYTIC UNITS/CULTURE ON DAY 4. CYCLOHEXIMIDE-RESISTANT ACTIVITY WAS HIGHER IN THE INFECTED CULTURES, WITH A PEAK EQUIVALENT TO ONE-HALF THE TOTAL ACTIVITY AT DAY 4 TO 5. TOTAL AS WELL AS CYCLOHEXIMIDE-RESISTANT ADENINE INCORPORATION WAS HIGHER IN THE INFECTED CELLS BETWEEN DAYS 3 AND 5 AFTER INFECTION, WITH A PEAK AT DAY 3 TO 4. SOMEWHAT SIMILAR RESULTS WERE OBTAINED WITH R. AKARI, EXCEPT THAT THE CYCLE OF INFECTION AND OF CYCLOHEXIMIDE-RESISTANT ACTIVITY PROCEEDED AND WAS COMPLETED MORE RAPIDLY. WITH LABELED THYMIDINE, IT WAS SHOWN THAT R. TYPHI AND R. AKARI DIFFER CONSIDERABLY IN THEIR EFFECTS ON THE HOST CELL. R. TYPHI ELICITED MODERATE INHIBITION, WHEREAS R. AKARI INFECTION LED TO A COMPLETE INHIBITION OF THYMIDINE. IT IS CONCLUDED THAT RICKETTSIAE HAVE THE NECESSARY ENZYMES FOR PROTEIN AND NUCLEIC ACID SYNTHESIS, BUT, THUS FAR, THESE ENZYMES HAVE BEEN ACTIVATED OR INDUCED ONLY IN AN INTRACELLULAR ENVIRONMENT. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD- 751 504 6/18
DIKEWOOD CORP ALBUQUERQUE N MEX

BIOMETRICAL ANALYSIS OF BIOMEDICAL RESPONSE DATA. (U)

DESCRIPTIVE NOTE: TECHNICAL REPT. 16 JAN 69-13 APR 70, OCT 72 45P WALL,FRANCIS ;
CONTRACT: F29601-69-C-0043
PROJ: AF-5710
MONITOR: AFWL TR-70-28

UNCLASSIFIED REPORT

DESCRIPTORS: (*RADIATION DOSAGE, LETHAL DOSAGE), (*DOSIMETERS, RADIATION DOSAGE), AGING(PHYSIOLOGY), MAMMALS, DOSE RATE, RADIATION TOLERANCE, BIOMETRY (U)

THE PRINCIPAL RESEARCH CENTERED ON AN EFFORT TO RELATE MEAN LETHAL RADIATION DOSE FOR SHEEP TO THE AGE OF THE SUBJECT AT THE TIME OF RADIATION. ANIMAL OF DIFFERENT AGES WERE IMMEDIATELY AVAILABLE AND IT SEEMED THAT STATISTICAL CONSULTATION WOULD BE BENEFICIAL IN SEVERAL PROBLEM AREAS ASSOCIATED WITH SUCH AN EXPERIMENT. SPECIFICALLY, EFFORTS CONCENTRATED ON THE EXPERIMENTAL DESIGN AND ANALYTICAL PROCEDURES, RATHER THAN THE ANALYSIS AND DATA INTERPRETATION WHICH CHRONOLOGICALLY WOULD COME AFTER THE EXPIRATION DATE OF THIS CONTRACT. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD- 752 699 6/18
NAVAL INTELLIGENCE SUPPORT CENTER WASHINGTON D C
TRANSLATION SERVICES DIV

EFFECT OF LASER BEAMS ON BIOLOGICAL OBJECTS (VOZDEISTVIE LUCHEI KVANTOVOGO GENERATORA (LAZERA) NA BIOLOGICHESKIE OBEKTY), (U)

NOV 72 20P PIRUZYAN,L. A. ;DEMENTEV, V. P. ;BARSEGYAN ,L. KH. ;SAVCHENKO,G. S. ; ROGOVIN,V. V. ;
REPT. NO. NISC-TRANS-3367

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: TRANS. OF PAPER PRESENTED AT ASMA (42ND), HOUSTON, TEX., 27 APR 71.

DESCRIPTORS: (*COHERENT RADIATION, *RADIOBIOLOGY), (*RADIATION EFFECTS, LASERS), SKIN(ANATOMY), TISSUES(BIOLOGY), ORGANIC PIGMENTS, BIOPHYSICS, THERMAL RADIATION, USSR (U)
IDENTIFIERS: TRANSLATIONS (U)

THE PRESENT WORK INVESTIGATES THE EFFECT OF FOCUSSED AND UNFOCUSSED NEODYMIUM-GLASS LASER BEAMS OPERATING AT 10,600 A ON PIGMENTED AND NONPIGMENTED TISSUE IN AN ATTEMPT TO EXPLAIN THE DEGREE OF DAMAGE TO A BIOLOGICAL STRUCTURE AS A FUNCTION OF ITS PIGMENTATION. (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD- 756 771 6/18
FOREIGN TECHNOLOGY DIV WRIGHT-PATTERSON AFB OHIO

PHYSICAL AND RADIOBIOLOGICAL INVESTIGATIONS ON ARTIFICIAL EARTH SATELLITES, (U)

DEC 72 217P KOVALYOV,E. E. ;KOLOMENSKII, A. V. ;
REPT. NO. FTD-HC-23-1143-72
PROJ: FTD-T70-02-01B

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: EDITED TRANS. OF MONO. FIZICHESKIE I RADIOBIOLOGICHESKIE ISSLEDOVANIYA NA ISKUSSTVENNYKH SPUTNIKAKH ZEMLI, MOSCOW, 1971 P1-199.

DESCRIPTORS: (*COSMIC RAYS, *RADIOBIOLOGY), (*SPACE BIOLOGY, SCIENTIFIC RESEARCH), BIOPHYSICS, RADIATION DOSAGE, PERMISSIBLE DOSAGE, SPACECRAFT, PROTECTION, RADIATION HAZARDS, RADIATION EFFECTS, ANIMALS, PLANTS(BOTANY), BIOCHEMISTRY, USSR (U)
IDENTIFIERS: TRANSLATIONS, *EXOBIOLOGY (U)

THE MONOGRAPH PRESENTS EXPERIMENTAL MATERIALS OBTAINED ON EARTH ORBITING SPACE SHIPS AND DATA FROM THE LITERATURE, SUMMARIZING PHYSICAL AND BIOMEDICAL RESEARCH IN SPACE. RESULTS OF RESEARCH CONCERNING THE RADIATION ENVIRONMENT IN ORBITS OF EARTH ORBITING SPACE SHIPS ARE PRESENTED. THE PRINCIPLES OF CALCULATION OF PERMISSABLE RADIATION DOSES ARE GIVEN AND PHYSICAL PROTECTION OF SPACE SHIPS IS DISCUSSED. RADIATION DANGERS ARE EVALUATED, USING THE PERMISSABLE LEVELS OF COSMIC RADIATION FOR MAN AND OTHER BIO-OBJECTS. RESULTS ARE PRESENTED OF EXPERIMENTS INVOLVING THE STUDY OF COMBINED EFFECT OF RADIATION AND OTHER FACTORS OF SPACE FLIGHT ON ANIMALS, HIGHER AND LOWER PLANTS, UNICELLULAR ORGANISMS AND SIMULATED BIOCHEMICAL SYSTEMS. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD- 759 049 6/18 6/6
NAVAL ELECTRONIC SYSTEMS COMMAND WASHINGTON D C

SANGUINE SYSTEM BIOLOGICAL/ECOLOGICAL RESEARCH PROGRAM. (U)

DESCRIPTIVE NOTE: SUMMARY STATUS REPT. JUL 69-APR 73.
APR 73 80P

UNCLASSIFIED REPORT

DESCRIPTORS: (*ELECTROMAGNETIC RADIATION, *RADIOBIOLOGY), (*ECOLOGY, ELECTROMAGNETIC RADIATION), RADIATION EFFECTS, GENETICS, PHYSIOLOGY, BIOCHEMISTRY, MICROBIOLOGY (U)
IDENTIFIERS: *RADIATION, ECOSYSTEMS (U)

THE RESEARCH IS DESIGNED TO DETERMINE WHETHER EXPOSURE TO LOW-LEVEL ELF ELECTROMAGNETIC RADIATION HAS ANY EFFECT ON BIOLOGICAL/ECOLOGICAL SYSTEMS. A BRIEF SUMMARY OF EACH STUDY INITIATED BY THE SANGUINE DIVISION IS GIVEN. TEST RESULTS ARE GIVEN FOR THOSE THAT HAVE BEEN COMPLETED. BIOLOGICAL/ECOLOGICAL AREAS CONSIDERED IN THESE STUDIES INCLUDE GENETICS, FERTILITY, PHYSIOLOGY, GROWTH AND DEVELOPMENT, BEHAVIOR, BIOLOGICAL RHYTHMS, SOIL MICROBIOLOGY, BIOCHEMISTRY, PLANT ECOSYSTEMS, SOIL ORGANISM ECOSYSTEMS, ANIMAL AND BIRD POPULATIONS, AND BIRD MIGRATION. (AUTHOR MODIFIED ABSTRACT) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD- 762 038 6/18
ARMED FORCES RADIOBIOLOGY RESEARCH INST BETHESDA MD

BIOLOGICAL EFFECTS IN RODENTS EXPOSED TO PULSED ELECTROMAGNETIC RADIATION. (U)

DESCRIPTIVE NOTE: SCIENTIFIC REPT.,
JUN 73 23P SKIDMORE,W. D. ;BAUM,S. J. ;
REPT. NO. AFRRI-SR73-10
PROJ: DNA-NWED-QAXM
TASK: C903

UNCLASSIFIED REPORT

DESCRIPTORS: (*ELECTROMAGNETIC RADIATION, *RADIOBIOLOGY), RODENTS, BIOASSAY, RADIATION EFFECTS, RADIATION DOSAGE, DOSE RATE, CELLS(BIOLOGY), BLOOD CELLS, BONE MARROW, BLOOD CHEMISTRY, REPRODUCTION(PHYSIOLOGY), HISTOLOGY, NEOPLASMS (U)

RODENTS WERE EXPOSED TO ELECTROMAGNETIC PULSE (EMP) RADIATION TO TEST THE HYPOTHESIS THAT RAPID CHANGES IN ELECTRIC AND MAGNETIC FIELDS WOULD INDUCE INJURIES IN BIOLOGICAL SYSTEMS WITH HIGH CELL TURNOVER RATES. IT WAS OBSERVED THAT THE RETICULOCYTE COUNT IN EXPOSED RATS WAS NEARLY ALWAYS GREATER THAN IN APPROXIMATELY 1 HOUR DAILY FOR BIOLOGICAL SAMPLING AND ANIMAL CARE DURING 20 WEEKS. BIOLOGICAL ASSAYS WERE PERIODICALLY CONDUCTED IN EXPOSED AND NONEXPOSED ANIMALS AT APPROPRIATE INTERVALS. IT WAS OBSERVED THAT THE RETICULOCYTE COUNT IN EXPOSED RATS WAS NEARLY ALWAYS GREATER THAN IN NONEXPOSED. HOWEVER, THERE WERE NO CONCOMITANT DIFFERENCES IN PERIPHERAL ERYTHROCYTE COUNTS BETWEEN THE TWO GROUPS, NOR DID RADIOACTIVE IRON INCORPORATION INDICATE INCREASED CELLULAR PRODUCTION IN THE IRRADIATED GROUP. LEVELS OR RELATIVE COUNTS OF CIRCULATING LEUKOCYTES DID NOT DIFFER BETWEEN THE TWO GROUPS. PLATELET COUNTS IN EXPOSED RATS OCCASIONALLY WERE DECREASED BELOW THOSE IN THE NONEXPOSED. BONE MARROW CELLULARITY WAS NOT DIFFERENT BETWEEN THE TWO GROUPS. PRELIMINARY ANALYSIS OF CHROMOSOMES SHOWED NO DETECTABLE INCREASES OF DEFECTS. ROUTINE CHEMICAL ANALYSIS OF BLOOD DEMONSTRATED SIMILAR VALUES IN THE TWO GROUPS. OBSERVATIONS OF FETUSES FROM PREGNANT RATS SHOWED NO ABNORMALITIES.

(U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD- 762 202 6/1 6/18
CENTRE D'ETUDE DE L'ENERGIE NUCLEAIRE MOL (BELGIUM)

PENETRATION, FATE AND BIOLOGICAL EFFECTS OF EXOGENOUS DNA INTO THE CELLS OF IRRADIATED MAMMALIAN TISSUES. (U)

DESCRIPTIVE NOTE: FINAL TECHNICAL REPT.,
SEP 72 53P CHARLES,P. ;LEDOUX,L. ;
BALLUET,H. ;WATTERS,C. ;DELAUNOIT,G. ;
CONTRACT: DAJA37-72-C-0488
MONITOR: ARDG(E) E-1294

UNCLASSIFIED REPORT

DESCRIPTORS: (*DEOXYRIBONUCLEIC ACIDS, *CELLS(BIOLOGY)), (*RADIOBIOLOGY, DEOXYRIBONUCLEIC ACIDS), TISSUES(BIOLOGY), ABSORPTION(BIOLOGICAL), CHEMICAL BONDS, BELGIUM (U)
IDENTIFIERS: MOLECULAR BIOLOGY (U)

LABELLED BACTERIAL DNA INFUSED IN RAT CARTOID BECOMES INTEGRATED IN THE GENOME OF DIFFERENT TARGET ORGANS AS DOUBLE STRANDED MATERIAL, COVALENTLY BOUND TO THE NON REPLICATING STRANDS OF THE RECIPIENT DNA. PART OF THE FOREIGN DNA REPLICATES IN THE RECIPIENT CELLS. BOTH PROCESSES ARE SUPPRESSED BY LETHAL X-IRRADIATION. POST IRRADIATION DNA TREATMENT GREATLY IMPROVES THE ORGAN RESISTANCE TO X-RAYS, APPARENTLY THROUGH SIDE EFFECTS. DNA APPEARS TO BIND TO SPECIFIC MEMBRANE RECEPTORS AND TO PENETRATE INTO LIVING CELLS BY A PROCESS DIFFERING FROM PINOCYTOSIS. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD- 764 741 6/18
SCHOOL OF AEROSPACE MEDICINE BROOKS AFB TEX

USAFSAM WHOLE BODY COUNTER SYSTEM
RADIOCHEMICAL DETERMINATION OF THORIUM
DIOXIDE. (U)

DESCRIPTIVE NOTE: FINAL REPT. AUG-SEP 72,
JUN 73 14P RUPP,TED D. ;
REPT. NO. SAM-TR-73-18
PROJ: AF-7757
TASK: 775701

UNCLASSIFIED REPORT

DESCRIPTORS: (*THORIUM COMPOUNDS, *RADIATION MEASURING INSTRUMENTS), (*RADIOBIOLOGY, THORIUM COMPOUNDS), (*ANEMIAS, THORIUM COMPOUNDS), RADIATION CHEMISTRY, WHOLE BODY IRRADIATION, TISSUES(BIOLOGY), PATHOLOGY (U)

THORIUM CONTENT OF A 72-YEAR-OLD MALE PATIENT SUFFERING FROM APLASTIC ANEMIA WAS DETERMINED APPROXIMATELY 25 YEARS AFTER A DIAGNOSTIC PROCEDURE UTILIZING THOROTRAST. WHOLE BODY THORIUM IN THE INTACT PATIENT WAS DETERMINED UTILIZING THE USAFSAM WHOLE BODY COUNTER. POSTMORTEM THORIUM DETERMINATIONS WERE MADE ON WHOLE ORGANS FROM THE SAME PATIENT, INCLUDING THE SPLEEN, LIVER, AND VERTEBRAL BONE. THE THORIUM CONTENT OF THE WHOLE BODY WAS 574 NC., OR ABOUT 5.27 GM. THE ORGAN CONTENT WAS: LIVER, 367 NC. OR 3.37 GM.; AND SPLEEN, 76.1 NC. OR 0.70 GM. BONE AND MARROW CONTENT COULD NOT BE ACCURATELY DETERMINED WITH THE METHOD USED UNDER CONSTRAINT OF NONDESTRUCTIVE ANALYSIS. FROM THESE DATA, THE ORIGINAL INJECTION WAS CALCULATED TO BE APPROXIMATELY 43 CC. OF THOROTRAST (5.27 GM. OF THORIUM). (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD- 766 796 6/18
ARMED FORCES RADIOBIOLOGY RESEARCH INST BETHESDA MD

ANNUAL RESEARCH REPORT, 1 JUL 1971-30 JUN 72. (U)

JUN 72 97P
REPT. NO. AFRRI-ARR-6

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO REPORT DATED 30 JUN 71, AD-745 775.

DESCRIPTORS: (*RADIOBIOLOGY, SCIENTIFIC RESEARCH), REVIEWS, RADIATION DOSAGE, GASTROINTESTINAL SYSTEM, IMMUNOLOGY, HEMOPOIETIC SYSTEM, BIOCHEMISTRY, PHARMACOLOGY, CYTOLOGY, MORTALITY RATES, RADIATION INJURIES, RADIATION EFFECTS, RADIATION DOSAGE (U)
IDENTIFIERS: NUCLEAR MEDICINE (U)

PROBLEMS IN RADIATION BIOLOGY REMAINED A MAJOR PART OF THE RESEARCH PROGRAM DURING THIS PERIOD, AND THE RESULTS OF RESEARCH DONE IN THESE AREAS CONSTITUTE THE MAJORITY OF THIS REPORT. THE NEW NUCLEAR MEDICINE AND RADIOPHARMACEUTICAL PROGRAM IS REPORTED, IN PART, AND OTHER ASPECTS OF THE NEW PROGRAM WILL BE COVERED IN FUTURE ANNUAL REPORTS. (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD- 767 387 20/3 6/18
ROCHESTER UNIV N Y SCHOOL OF MEDICINE AND DENTISTRY

EFFECT OF EXTREMELY LOW FREQUENCY ELECTRIC AND MAGNETIC FIELDS ON ROOTS OF 'VICIA FABA'. (U)

DESCRIPTIVE NOTE: FINAL REPT.,
OCT 73 10P MILLER,MORTON W. ;
CONTRACT: N00014-67-A-0398-0011

UNCLASSIFIED REPORT

DESCRIPTORS: (*PLANTS(BOTANY), *ELECTROMAGNETIC FIELDS), (*RADIOBIOLOGY, ELECTROMAGNETIC FIELDS), MITOSIS, GROWTH(PHYSIOLOGY), GENETICS, PHYSIOLOGY (U)
IDENTIFIERS: VICIA FABA (U)

ROOTS OF VICIA FABA WERE EXPOSED TO ELECTRIC AND MAGNETIC FIELDS COMPARABLE TO THOSE OF PROJECT SANGUINE. THERE WERE NO DIFFERENCES AMONG CONTROL AND EXPOSED ROOTS FOR GROWTH OR MITOTIC INDEX. ALSO, THERE WERE NO CHROMOSOMAL ANOMALIES. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD- 770 113 6/18 18/3
ARMED FORCES RADIOBIOLOGY RESEARCH INST BETHESDA MD

AFRRI ELECTROMAGNETIC PULSE (EMP) SIMULATOR. (U)

DESCRIPTIVE NOTE: TECHNICAL NOTE,
SEP 73 15P BRUNHART,G. ;CARTER,ROBERT E. ;VALENCIA,V. I. ;
REPT. NO. AFRRI-TN73-14
PROJ: DNA-NWED-QAXM
TASK: C903

UNCLASSIFIED REPORT

DESCRIPTORS: (*ELECTROMAGNETIC PULSES, *RADIOBIOLOGY), RADIATION EFFECTS, TRANSMISSION LINES, ELECTROMAGNETIC FIELDS, ANIMALS, NUCLEAR EXPLOSIONS (U)

AN ELECTROMAGNETIC PULSE SIMULATOR FOR ANIMAL STUDIES HAS BEEN BUILT AND OPERATED AT ARMED FORCES RADIOBIOLOGY RESEARCH INSTITUTE SINCE SEPTEMBER 1972. THE EXPOSURE VOLUME CONSISTS OF A TERMINATED PARALLEL-PLATE TRANSMISSION LINE FED WITH A PULSE THE TIME DEPENDENT WAVE FORM OF WHICH CAN BE APPROXIMATED BY A DOUBLE EXPONENTIAL. PEAK ELECTRIC FIELD STRENGTHS UP TO 500 KV/M ARE AVAILABLE AT A REPETITION RATE UP TO 7 PPS. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD- 770 131 6/18
STANFORD RESEARCH INST MENLO PARK CALIF LIFE SCIENCES DIV

RADIOBIOLOGY OF LARGE ANIMALS. (U)

DESCRIPTIVE NOTE: ANNUAL REPT. 1 AUG 72-31 JUL 73,
AUG 73 43P JONES,DAVID C. L. ;KREBS,
JOHN S. ;
CONTRACT: DAHC20-70-C-0219
PROJ: DCPA-2341D

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO AD-752 049.

DESCRIPTORS: *RADIOBIOLOGY, *HEMATOLOGY,
*RADIATION INJURIES, SHEEP, GAMMA RAYS,
RADIATION DOSE, DOSE RATE, BONE MARROW,
ERYTHROCYTES, LEUCOCYTES, KINETICS, LETHALITY (U)

HEMATOLOGIC CHANGES OCCURRING DURING AND AFTER COMPLEX SEQUENCES OF LOW-DOSE-RATE EXPOSURE OF SHEEP TO GAMMA RADIATION (COBALT 60) HAVE BEEN EVALUATED. ERYTHROCYTIC VALUES WERE DEPRESSED EARLY IN THE IRRADIATION SEQUENCE, WITH FURTHER GRADUAL DEPRESSION AFTER CESSATION OF EXPOSURE. LEUKOCYTIC VALUES DECREASED IN A STEPWISE FASHION DURING THE IRRADIATION SEQUENCE, WITH THE PATTERNS OF DECREASE AND POST-IRRADIATION RECOVERY DEPENDENT ON THE PARTICULAR PARAMETERS OF RADIATION EXPOSURE. STUDIES OF BONE-MARROW CELL KINETICS IN MICE RECEIVING SINGLE EXPOSURES HAVE SHOWN THAT POST-IRRADIATION CHANGES IN TOTAL CELLULARITY DEPEND ON DOSE RATE. FURTHER STUDIES OF LETHALITY IN SHEEP IRRADIATED AT LOW DOSE RATES HAVE INDICATED THAT A PREVIOUSLY DEVELOPED MATHEMATICAL MODEL RELATING EXPOSURE PARAMETERS TO LETHALITY MAY REQUIRE MODIFICATION WHEN THE EXPOSURE DOSE RATE IS OF THE ORDER OF 10 R/HR OR HIGHER. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD- 770 621 6/18
NAVAL MEDICAL RESEARCH INST BETHESDA MD

BIBLIOGRAPHY OF REPORTED BIOLOGICAL PHENOMENA ('EFFECTS') AND CLINICAL MANIFESTATIONS ATTRIBUTED TO MICROWAVE AND RADIO-FREQUENCY RADIATION. SUPPLEMENT NUMBER 4. (U)

DESCRIPTIVE NOTE: MEDICAL RESEARCH INTERIM REPT., JUN 73 24P GLASER,ZORACH R. ;
PROJ: MF12.524
TASK: MF12.524.015

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SUPPLEMENT TO AD-750 271.

DESCRIPTORS: *ELECTROMAGNETIC RADIATION, *RADIOBIOLOGY, *BIBLIOGRAPHIES, *RADIATION EFFECTS, MICROWAVES, RADIO WAVES, RADIATION HAZARDS (U)
IDENTIFIERS: *MICROWAVE RADIOBIOLOGY, ELECTROMAGNETIC RADIATION HAZARDS (U)

MORE THAN 325 ADDITIONAL REFERENCES ON THE BIOLOGICAL RESPONSES TO RADIO FREQUENCY AND MICROWAVE RADIATION, PUBLISHED UP TO MAY 1973, ARE INCLUDED IN THIS BIBLIOGRAPHY OF THE WORLD LITERATURE. PARTICULAR ATTENTION HAS BEEN PAID TO THE EFFECTS OF NON-IONIZING RADIATION ON MAN AT THESE FREQUENCIES. THE CITATIONS ARE ARRANGED ALPHABETICALLY BY AUTHOR, AND CONTAIN AS MUCH INFORMATION AS POSSIBLE SO AS TO ASSURE EFFECTIVE RETRIEVAL OF THE ORIGINAL DOCUMENTS. SOVIET AND EAST EUROPEAN LITERATURE IS INCLUDED IN DETAIL. (MODIFIED AUTHOR ABSTRACT) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD- 770 926 8/1 6/18 18/8
SCRIPPS INSTITUTION OF OCEANOGRAPHY LA JOLLA CALIF

CONTRIBUTIONS FROM THE ALPHA EMITTER, POLONIUM-210, TO THE NATURAL RADIATION ENVIRONMENT OF THE MARINE ORGANISMS, (U)

73 11P FOLSOM,T. R. ;BEASLEY,T. M. ;

CONTRACT: N00014-69-A-0200-6011
MONITOR: IAEA SM-158/41

UNCLASSIFIED REPORT
AVAILABILITY: PUB. IN RADIOACTIVE CONTAMINATION OF THE MARINE ENVIRONMENT, P625-632 1973.
SUPPLEMENTARY NOTE: PREPARED IN COOPERATION WITH WASHINGTON UNIV., SEATTLE.

DESCRIPTORS: *RADIOACTIVE ISOTOPES, *MARINE BIOLOGY, *ACCUMULATION, RADIOBIOLOGY, ALPHA PARTICLES, AQUATIC ANIMALS, AQUATIC PLANTS, CONCENTRATION(CHEMISTRY) (U)
IDENTIFIERS: POLONIUM 210, BASELINE MEASUREMENTS (U)

THERE IS EVIDENCE THAT MANY MARINE ORGANISMS ACCUMULATE NATURAL ALPHA EMITTERS TO LEVELS THAT MIGHT BE CONTRIBUTING SUBSTANTIALLY TO THEIR BURDEN FROM IONIZING RADIATION. THERE ARE INCREASING OPPORTUNITIES FOR ALPHA EMITTERS TO ENTER THE OCEAN BECAUSE IT HAS BEEN FOUND THAT THIS NATURAL NUCLIDE ACCUMULATES TO RELATIVELY HIGH LEVELS IN SOME OF THE SAME MARINE ECOSYSTEMS THAT ACCUMULATE PLUTONIUM EFFECTIVELY. CONCENTRATIONS OF POLONIUM-210 IN A VARIETY OF MARINE ORGANISMS ARE COMPARED AND ALSO THE RADIOACTIVE BURDENS THAT MAY BE INFERRED FROM BULK TISSUE SAMPLES. SOME DIFFICULTIES OF INTERPRETATIONS ARE DISCUSSED AND THE NEED FOR MORE DETAILED MEASUREMENTS IN SPECIFIC ORGANS AND TISSUES. SOME INFERENCES ABOUT POLONIUM-210 FROM LEAD-210 MEASUREMENTS ALSO ARE PRESENTED. (MODIFIED AUTHOR ABSTRACT) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD- 775 614 22/1 6/18 3/2
NAVAL AEROSPACE MEDICAL RESEARCH LAB PENSACOLA FLA

UNIFIED RANGE SPECTRUM AND LET DISTRIBUTION FOR HZE PARTICLES OF GALACTIC RADIATION IN SPACE, (U)

DEC 73 26P SCHAEFER,HERMANN J. ;
REPT. NO. NAMRL-1198
CONTRACT: NASA ORDER-W-13-280

UNCLASSIFIED REPORT

DESCRIPTORS: *SPACE ENVIRONMENTS, *EXTRATERRESTRIAL RADIATION, *RADIOBIOLOGY, RADIATION HAZARDS, RADIATION EFFECTS, RADIATION DOSAGE, TISSUES(BIOLOGY), SPACE BIOLOGY (U)
IDENTIFIERS: *GALACTIC RADIATION, LINEAR ENERGY TRANSFER, GALACTIC COSMIC RAYS (U)

A UNIFIED RANGE SPECTRUM FOR THE FLUX DENSITIES OF HZE PARTICLES OF GALACTIC RADIATION IN SPACE IS PRESENTED FOR ESTABLISHING THE INDIVIDUAL SPECTRUM FOR ANY Z NUMBER WITH A SIMPLE SCALING PROCEDURE. DATA ON Z ABUNDANCES ARE PRESENTED AND THE Z SPECTRUM FROM Z = 2 TO 28 IS DIVIDED INTO FOUR CLASSES. RANGE SPECTRA FOR THE CLASS REPRESENTATIVES ARE DERIVED. THE INFLUENCE OF THE GEOMAGNETIC CUTOFF ON THE RANGE SPECTRA FOR DIFFERENT LATITUDES IS DISCUSSED. THE DATA ARE SUMMARIZED IN TWO GRAPHS FROM WHICH EVENT SIZES IN TERMS OF LET AND RELATED TRACK LENGTHS AND THEIR FREQUENCIES FOR GIVEN TARGET VOLUMES CAN BE READ DIRECTLY. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD- 777 718 6/18
ARMED FORCES RADIOBIOLOGY RESEARCH INST BETHESDA MD

ANNUAL RESEARCH REPORT 1 JULY 1972 - 30 JUNE 1973. (U)

JUN 73 127P
REPT. NO. AFRRI-ARR-7

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO REPORT DATED 30 JUN 72, AD-760 796.

DESCRIPTORS: *RADIOBIOLOGY, SCIENTIFIC RESEARCH, RADIATION DOSAGE, GASTROINTESTINAL SYSTEM, IMMUNOLOGY, HEMOPOIETIC SYSTEM, CYTOLOGY, BIOCHEMISTRY, PHARMACOLOGY, RADIATION EFFECTS, RADIATION INJURIES (U)

THE REPORT DESCRIBES, IN BRIEF SUMMARY, THE SCIENTIFIC ACCOMPLISHMENTS OF THE ARMED FORCES RADIOBIOLOGY RESEARCH INSTITUTE (AFRRI) FOR THE PERIOD 1 JULY 1972 TO 30 JUNE 1973. DURING THIS REPORT PERIOD, THE AFRRI HAS BROADENED ITS RESEARCH PROGRAM FROM ONE PRIMARILY LIMITED TO OPERATIONAL PROBLEMS IN RADIATION BIOLOGY TO ONE WHICH INCLUDES A NUMBER OF CRITICAL BIOMEDICAL PROBLEMS OF DIRECT INTEREST TO THE SURGEONS GENERAL OF THE MILITARY DEPARTMENTS. THE ESTABLISHMENT OF A NEUROBIOLOGY DEPARTMENT AND THE EXPANSION OF NUCLEAR MEDICINE ACTIVITIES ARE REFLECTED IN A SIGNIFICANT NUMBER OF TECHNICAL SUMMARIES IN THIS REPORT. (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD- 780 222 6/18
NAVAL WEAPONS LAB DAHLGREN VA

BIOMEDICAL ASPECTS OF NONIONIZING RADIATION. (U)

DESCRIPTIVE NOTE: TECHNICAL REPT.,
MAR 74 98P MILROY,WILLIAM C. ;
REPT. NO. NWL-TR-3110

UNCLASSIFIED REPORT

DESCRIPTORS: *MEETINGS, *RADIOBIOLOGY, RADIATION EFFECTS, BIOENGINEERING, ELECTROMAGNETIC RADIATION, MICROWAVES, RADIATION DOSAGE (U)
IDENTIFIERS: *NONIONIZING RADIATION (U)

THE REPORT CONSISTS OF THE PROCEEDINGS OF A ONE-DAY SYMPOSIUM ON BIOMEDICAL ASPECTS OF NONIONIZING RADIATION HELD ON 10 JULY 1973 AT THE NAVAL WEAPONS LABORATORY, DAHLGREN, VIRGINIA IN CONJUNCTION WITH THE OPENING AND DEDICATION OF THE NEW BIOMEDICAL RESEARCH LABORATORY. IT INCLUDES A COMPILATION OF SIX INVITED PAPERS PRESENTED AT THE SYMPOSIUM BY LEADING AUTHORITIES IN THE FIELDS OF BIO-ENGINEERING, COMPARATIVE BIOLOGY, HUMAN EXPOSURE FACTORS, HIGH POWER PULSES, AND EMP BIOEFFECTS. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD- 781 333 6/18
ROCHESTER UNIV N Y DEPT OF RADIATION BIOLOGY AND BIOPHYSICS

EFFECTS OF EXTREMELY LOW FREQUENCY ELECTRIC AND MAGNETIC FIELDS ON ROOTS OF 'VICIA FABA'. (U)

DESCRIPTIVE NOTE: FINAL REPT. SEP 71-JAN 74, JUN 74 18P MILLER,MORTON W. ;
CONTRACT: N00014-67-A-0398-0011
PROJ: NR-101-881

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO REPORT DATED 2 OCT 73, AD-767 387.

DESCRIPTORS: *ELECTROMAGNETIC FIELDS, *PLANTS(BOTANY), *RADIOBIOLOGY, *RADIATION EFFECTS, PHYSIOLOGY, GLOBAL COMMUNICATION SYSTEMS, MITOSIS, GROWTH, GENETICS (U)
IDENTIFIERS: SANGUINE PROJECT, VICIA FABA (U)

ROOTS OF VICIA FABA WERE EXPOSED TO ELECTRIC AND MAGNETIC FIELDS COMPARABLE TO BUT AT LEVELS HIGHER THAN THOSE ASSOCIATED WITH PROJECT SANGUINE. THERE WERE NO DIFFERENCES AMONG CONTROL AND EXPOSED ROOTS FOR GROWTH OR MITOTIC INDEX. ALSO, THERE WERE NO CHROMOSOMAL ANOMALIES. THREE INDICES ARE EXAMINED TO DETECT ANY EFFECTS OF EXPOSURE OF GROWING PRIMARY ROOTS OF VICIA FABA (HORSE BEAN, MUNG BEAN) TO ELF ELECTRIC AND MAGNETIC FIELDS SIMULATING THOSE NEAR THE SANGUINE TRANSMITTER: GROWTH RATE, MITOTIC INDEX, CHROMOSOMAL ABNORMALITIES IN DIVIDING MERISTEMATIC CELLS. THE CHOICE OF VICIA FABA AND OF THE ABOVE INDICES WAS DUE TO THE FACT THAT THEY HAVE BEEN HIGHLY SENSITIVE INDICATORS OF OTHER FORMS OF BIOLOGICAL STRESS. (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD- 782 595 6/18
SHERBROOKE UNIV (QUEBEC) DEPT OF PATHOLOGY

PROTECTIVE EFFECT OF AN ELEMENTAL DIET ON RADIATION ENTEROPATHY IN THE MOUSE, (U)

73 14P HUGON,J. S. ;BOUNOUS,G. ;
MONITOR: DRB REPRINT-3988

UNCLASSIFIED REPORT
AVAILABILITY: PUB. IN STRAHLENTHERAPIE, V146 N6 P701-712 1973.
SUPPLEMENTARY NOTE: TEXT IN ENGLISH; ATTACHED SUMMARIES IN GERMAN AND FRENCH.

DESCRIPTORS: *DIET, *RADIATION EFFECTS, *RADIOBIOLOGY, GAMMA RAYS, MICE, CANADA, INTESTINES, WEIGHT, SURVIVAL(GENERAL), PROTEINS, PROTECTION, IRRADIATION, CANADA (U)

AN ELEMENTAL DIET CONTAINING 9.5% PROTEIN HYDROLYSATE INSTEAD OF WHOLE PROTEINS HAS BEEN SHOWN TO IMPROVE THE 30 DAYS SURVIVAL IN MICE FOLLOWING 900 RD OF GAMMA RAYS. SURVIVAL RATE AND BODY-WEIGHT OF DIFFERENT GROUPS OF ANIMALS RECEIVING DIETS WITH 9.5% OR 15% PROTEIN HYDROLSATE OR WHOLE PROTEINS, GIVEN BEFORE AND AFTER IRRADIATION ONLY AFTER IRRADIATION, HAVE BEEN COMPARED. INTESTINAL MITOTIC INDICES IN MICE EATING THE SAME DIETS HAVE ALSO BEEN MEASURED FOLLOWING 1000 R OF GAMMA RAYS. THE RESULTS SHOW THAT AN ELEMENTAL DIET CONTAINING 9.5% PROTEIN HYDROLYSATE APPEARS TO PROVIDE THE BEST SURVIVAL RATE, WEIGHT RECOVERY AND INTESTINAL MITOTIC INDEX ON CONDITION THAT THE DIET IS GIVEN BEFORE IRRADIATION. SOME OF THE REASONS EXPLAINING THIS POSITIVE EFFECT OF THE ELEMENTAL DIET ARE DISCUSSED. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD- 783 772 6/18
SCHOOL OF AEROSPACE MEDICINE BROOKS AFB TEX

AIRCREW VULNERABILITY IN NUCLEAR ENCOUNTERS. (U)

DESCRIPTIVE NOTE: AEROMEDICAL REVIEW,
JUL 74 23P ALBANESE,RICHARD A. ;
PICKERING,JOHN E. ;
REPT. NO. SAM-TR-74-18, SAM-REVIEW-5-74
PROJ: AF-7757
TASK: 775705

UNCLASSIFIED REPORT

DESCRIPTORS: *NUCLEAR RADIATION, *RADIOBIOLOGY, *RADIATION EFFECTS, *HEALTH PHYSICS, FLIGHT CREWS, DOSAGE, LETHALITY, NUCLEAR WARFARE, DOSE RATE, NUCLEAR WEAPONS, AEROSPACE MEDICINE (U)

A COMPUTATIONAL METHOD (ALGORITHM) IS DESCRIBED WHICH ESTIMATES PROBABLE MISSION OUTCOME RESULTING FROM CREW EXPOSURE TO PROMPT NEUTRON GAMMA RADIATION AND/OR RESIDUAL FALLOUT RADIATION. THE THREAT SCENARIO PRESUPPOSES THAT:THE CREW HAS ENCOUNTERED ONE OR MORE NUCLEAR WEAPONS; BOTH AIRCRAFT AND CREW HAVE SURVIVED THE BLAST AND THERMAL INSULTS; AND THE AIRCRAFT IS UNDEGRADED BY THE RADIATION (AIRCRAFT IS SURVIVABLE). THUS ONE IS EXAMINING DECREASES IN MISSION PERFORMANCE BASED UPON CREW IRRADIATION ONLY. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD- 783 992 6/18
FOREIGN TECHNOLOGY DIV WRIGHT-PATTERSON AFB OHIO

REPORT ON THE INTERNATIONAL SEMINAR ON RADIATION PROTECTION, ENVIRONMENT AND POPULATION (1ST) HELD IN POTSDAM ON 16-21 OCT 72. (U)

JUL 74 12P ETTENHUBER,E. ;CLAJUS,P. ;
REPT. NO. FTD-HC-23-2303-74

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: EDITED TRANS. OF ISOTOPENPRAXIS (EAST GERMANY) V9 N5 P189-191 MAY 73.

DESCRIPTORS: *MEETINGS, *RADIOBIOLOGY, *HEALTH PHYSICS, ENVIRONMENTS, RADIATION, POPULATION, RADIATION DOSAGE, EAST GERMANY, TRANSLATIONS (U)
IDENTIFIERS: RADIOECOLOGY (U)

THE BASIC PRINCIPLES OF RADIATION PROTECTION AND RADIOHYGIENIC TESTING OF THE ENVIRONMENT WERE THE CENTRAL THEME OF THE FIRST DAY OF THE SEMINAR. ON THE SECOND DAY OF THE SEMINAR, A TOTAL OF 11 LECTURES AND MANY DISCUSSIONS ENLARGED ON THE BIOLOGICAL FUNDAMENTALS OF RADIATION PROTECTION. THE THIRD DAY OF THE SEMINAR WAS RESERVED FOR THE RADIATION PROTECTION PROBLEMS DUE TO GLOBAL FALLOUT. (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD- 784 007 6/18
NAVAL MEDICAL RESEARCH AND DEVELOPMENT COMMAND BETHESDA MD

BIBLIOGRAPHY OF REPORTED BIOLOGICAL PHENOMENA (EFFECTS) AND CLINICAL MANIFESTATIONS ATTRIBUTED TO MICROWAVE AND RADIO-FREQUENCY RADIATION. SUPPLEMENT NUMBER 5. (U)

DESCRIPTIVE NOTE: MEDICAL RESEARCH INTERIM REPT., JUL 74 40P GLASER,ZORACH R. ;
PROJ: MF12.524
TASK: MF12.524.015

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SUPPLEMENT TO AD-770 621.

DESCRIPTORS: *ELECTROMAGNETIC RADIATION, *RADIOBIOLOGY, *BIBLIOGRAPHIES, *RADIATION EFFECTS, MEDICAL RESEARCH, MICROWAVES, RADIO WAVES, RADIATION HAZARDS (U)
IDENTIFIERS: *MICROWAVE RADIOBIOLOGY, ELECTROMAGNETIC RADIATION HAZARDS (U)

ALMOST 500 ADDITIONAL REFERENCES ON THE BIOLOGICAL RESPONSES TO RADIO FREQUENCY AND MICROWAVE RADIATION, PUBLISHED UP TO JULY 1974, ARE INCLUDED IN THIS BIBLIOGRAPHY OF THE WORLD LITERATURE. PARTICULAR ATTENTION HAS BEEN PAID TO THE EFFECTS OF NON-IONIZING RADIATION ON MAN AT THESE FREQUENCIES. THE CITATIONS ARE ARRANGED ALPHABETICALLY BY AUTHOR (WHERE POSSIBLE), AND CONTAIN AS MUCH INFORMATION AS POSSIBLE SO AS TO ASSURE EFFECTIVE RETRIEVAL OF THE ORIGINAL DOCUMENTS. SOVIET AND EAST EUROPEAN LITERATURE IS INCLUDED IN DETAIL. (MODIFIED AUTHOR ABSTRACT) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD- 785 609 6/18 20/5
JOINT AMRDC-AMC LASER SAFETY TEAM PHILADELPHIA PA

OCULAR AND SKIN HAZARDS FROM CO2 LASER RADIATION, (U)

72 16P BROWNELL,ARNOLD S. ;STUCK, BRUCE E. ;

UNCLASSIFIED REPORT

DESCRIPTORS: *CARBON DIOXIDE LASERS, *RADIATION EFFECTS, *LASER HAZARDS, *HEALTH PHYSICS, RADIOBIOLOGY, GAS LASERS, MATHEMATICAL MODELS, CORNEA, SKIN(ANATOMY), EYE, RADIATION DOSAGE, THRESHOLD EFFECTS, RESPONSE(BIOLOGY), LABORATORY ANIMALS, DAMAGE, EXPERIMENTAL DATA (U)

THE PURPOSE OF THE PAPER IS THREEFOLD: FIRST, TO PROVIDE DATA NECESSARY FOR MILITARY AND CIVILIAN SAFETY COMMUNITIES BY PRESENTING EXPERIMENTALLY DETERMINED THRESHOLD DOSES, FROM TWO INDEPENDENT STUDIES, FOR THE MINIMAL DETECTABLE CHANGES IN CORNEA AND SKIN FOLLOWING EXPOSURE TO CO2 LASER RADIATION. SECOND, TO TEST THE VALIDITY OF A MATHEMATICAL MODEL IN PREDICTING DAMAGE THRESHOLDS. THIRD, TO DETERMINE THE EXTENT THIS MODEL ACCOUNTS FOR DIFFERENCES IN THE EXPERIMENTALLY DETERMINED DOSE-RESPONSE RELATIONSHIPS FOR THE TWO TISSUES STUDIED. (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD- 786 753 6/18
BATTELLE PACIFIC NORTHWEST LABS RICHLAND WASH BIOLOGY DEPT

EFFECTS OF EXPOSURE TO PULSED MICROWAVES (RADAR) ON CENTRAL NERVOUS SYSTEM EXCITABILITY IN LABORATORY ANIMALS. (U)

DESCRIPTIVE NOTE: FINAL REPT.,
OCT 74 69P HUNT,EDWARD L. ;PHILLIPS, RICHARD D. ;KING,NANCY W. ;
CONTRACT: N00014-70-C-0197
PROJ: NR-101-809

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: *CENTRAL NERVOUS SYSTEM, *RADIOBIOLOGY, *RADIATION EFFECTS, *MICROWAVES, LABORATORY ANIMALS, RADAR PULSES, RADIATION DOSAGE, EXPERIMENTAL DATA, EXPOSURE(PHYSIOLOGY), DOSIMETRY, RATS, MICE, FACILITIES (U)
IDENTIFIERS: RECOMMENDATIONS, *MICROWAVE RADIOBIOLOGY (U)

A MICROWAVE BIOEFFECTS PROJECT WAS DESIGNED TO DEVELOP RELIABLE EXPOSURE METHODS AND DOSE ESTIMATION PROCEDURES FOR USE WITH LABORATORY ANIMALS TO INVESTIGATE POTENTIAL EFFECTS ON CENTRAL NERVOUS SYSTEM (CNS) EXCITABILITY. A RESONATING CAVITY EXPOSURE SYSTEM, POWERED BY A COMMERCIAL 2.45 GHZ PULSED MAGNETRON, WAS DEVELOPED AND PROVIDED ACCURATE CONTROL OF THE INTEGRAL ENERGY DELIVERED MULTILATERALLY TO THE ANIMAL. A HIGH PERFORMANCE ANECHOIC CHAMBER FACILITY, POWERED BY A 2.88 GHZ RADAR TRANSMITTER, PULSED WITH HIGH PEAK POWER, PROVIDED PLANE WAVE IRRADIATION. A BIODOSIMETRY METHOD, BASED ON LATENCY FOR MICROWAVE-INDUCED SEIZURE, WAS DEVELOPED FOR USE IN BOTH SYSTEMS FOR INDEXING EXPOSURE LEVELS, FOR VALIDATING BIOPHYSICAL DOSIMETRY MEASUREMENTS AND FOR INVESTIGATING EFFECTS OF FIELD GEOMETRY. (MODIFIED AUTHOR ABSTRACT) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD- 786 807 6/8 6/18
ARMY FOREIGN SCIENCE AND TECHNOLOGY CENTER CHARLOTTESVILLE VA

PROCEEDINGS OF THE SCIENTIFIC-TECHNICAL CONFERENCE ON THE USE OF IONIZING RADIATION IN THE NATIONAL ECONOMY. ISSUE 3. (U)

JAN 74 412P
REPT. NO. FSTC-HT-23-1512-73

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: TRANS. OF DOKLADY NAUCHNO-TEKHNICHESKOI KONFERENTSII PO ISPOLZOVANIYU IONIZIRUYUSHCHIKH IZLUCHENII V NARODNOM KHOZYAISTVE. ISSUE 3, TULA, 1970 P2-313.

DESCRIPTORS: *MEETINGS, *IRRADIATED FOOD, *RADIATION EFFECTS, *RADIOBIOLOGY, FRUITS, BEEF, ECONOMICS, UNITED STATES, GAMMA RAYS, TREATMENT, TRANSLATIONS, USSR, NOISE REDUCTION, HEAT, RESISTANCE, IONIZING RADIATION, PORK, FISHES (U)

RADIATION CHEMISTRY AND TECHNOLOGY OF FOOD PRODUCTS, THE HYGIENIC EVALUATION OF IRRADIATED FOOD PRODUCTS, AND THE GAMMA FACILITIES OF THE FOOD INDUSTRY ARE THE THREE MAIN DIVISIONS OF THIS BOOK. THE EFFECT OF IONIZING RADIATION ON FRUIT TISSUE DISORDERS, FRUIT MATURATION RATE, MICROFLORA COUNT IN FRUITS AND VEGETABLES, CRYOCONCENTRATION OF FRUIT JUICES, AND BEEF AND PORK STORAGE LIFE IS REPORTED IN THE FIRST PART OF THE BOOK, ALONG WITH RELATED APPLICATIONS. PART II DEALS WITH THE HYGIENIC MONITORING OF IRRADIATED FRUITS, FISH, AND THE DAILY DIETS OF POPULATION GROUPS. PART III REPORTS ON GAMMA FACILITY OPERATION AND ECONOMICS AND THE USE OF IONIZING RADIATION IN REDUCING NOISE LEVELS IN SEMICONDUCTOR DEVICES AND ENHANCING THE HEAT RESISTANCE OF BALL-BEARINGS AND PACKING GREASES, AS WELL AS INCREASING FRUIT TISSUE PERMEABILITY. (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD- 806 313 6/18
ARMY MEDICAL RESEARCH LAB FORT KNOX KY

PRELIMINARY STUDIES ON THE LUMINESCENCE EFFICIENCY OF BIOLOGICAL COMPOUNDS, (U)

DEC 54 13P KEREIAKES,J. G. ;PARR,W. H. ;KREBS,A. T. ;
REPT. NO. USAMRL-155
PROJ: AMRL-6-59-08-014

UNCLASSIFIED REPORT

DESCRIPTORS: (*RADIOBIOLOGY, LUMINESCENCE), RADIATION EFFECTS, BIOCHEMISTRY, SOLUTIONS(MIXTURES), AMINO ACIDS, PEPTIDES, GAMMA RAYS, FLUORESCENCE, VITAMINS, EMISSIVITY (U)

THE EFFECTS OF SUCH FACTORS AS CONCENTRATION, PH, ETC. ON THE LUMINESCENCE EFFICIENCY OF BIOLOGICAL COMPOUNDS IN AQUEOUS SOLUTIONS UNDER HIGH-ENERGY RADIATION BOMBARDMENT WERE STUDIED. THE RESULTS INDICATE THAT BIOLOGICAL COMPOUNDS QUENCH THE DISTILLED-WATER SOLVENT LUMINESCENCE; THAT THERE IS INCREASED LUMINESCENCE QUENCHING WITH INCREASING CONCENTRATION; AND THAT TWO OF THE COMPOUNDS STUDIED, TRYPTOPHANE AND GLUTATHIONE, SHOW A DEPENDENCE OF LUMINESCENCE ON THE PH OF SOLUTIONS. THESE RESULTS ARE DISCUSSED BRIEFLY IN TERMS OF THEORETICAL CONSIDERATIONS OF ENERGY TRANSPORT MECHANISMS IN IRRADIATED SOLUTIONS. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD- 824 242 6/18
ROCHESTER UNIV N Y DEPT OF RADIATION BIOLOGY AND BIOPHYSICS

BIOLOGIC EFFECTS OF MICROWAVE EXPOSURE. (U)

DESCRIPTIVE NOTE: FINAL REPT. 1958-1965,
SEP 67 133P MICHAELSON,SOL M. ;THOMSON,
R. A. E. ;HOWLAND,JOE W. ;
REPT. NO. UR-49-810
CONTRACT: AF 30(602)-2921
PROJ: AF-5545
MONITOR: RADC TR-67-461

UNCLASSIFIED REPORT

DESCRIPTORS: (*RADIATION HAZARDS, MICROWAVES), (*RADIOBIOLOGY, MICROWAVES), THERMAL STRESSES, BONE MARROW, RESPONSE(BIOLOGY), ANIMALS, SAFETY, CARDIOVASCULAR SYSTEM, THYROID GLAND, SENSITIVITY, EXPOSURE(PHYSIOLOGY), RADIATION EFFECTS, CENTRAL NERVOUS SYSTEM, HEMOPOIETIC SYSTEM, DRUGS (U)

THE EXACT NATURE OF THE BIOLOGICAL EFFECTS OF MICROWAVES IS NOT COMPLETELY UNDERSTOOD. EVIDENCE INDICATES THAT MICROWAVE ENERGY CAN ACT AS A 'STRESSOR' AGENT, AND HAS AN EFFECT ON REGULATORY AND INTEGRATIVE MECHANISMS OF THE BODY WITH RESULTANT ALTERATION IN HOMEOKINESIS. ANIMALS EXPOSED TO MICROWAVES AT SPECIFIC FREQUENCIES AND FLUX DENSITIES EXPERIENCE THERMAL STRESS. DURATION OF EXPOSURE, ENVIRONMENTAL TEMPERATURE, AND DRUGS THAT AFFECT THE CENTRAL NERVOUS SYSTEM (CNS) AND TEMPERATURE REGULATION INFLUENCE THE RESPONSE OF ANIMALS. HIGH AMBIENT TEMPERATURE EXAGGERATES THE THERMAL RESPONSE, WHILE EXPOSURE IN A COLD ENVIRONMENT PROLONGS THE TIME INTERVAL FOR AN INCREASE IN BODY TEMPERATURE. MICROWAVE EFFECTS ON HEMATOPOIESIS, THYROID FUNCTION AND INTERACTION WITH IONIZING RADIATION ARE DISCUSSED. SUFFICIENT DATA ARE NOT AVAILABLE TO ESTABLISH A COMPREHENSIVE SAFE LEVEL FOR MICROWAVE EXPOSURE BECAUSE OF MICROWAVE FREQUENCY RELATED FACTORS WHICH AFFECT BIOLOGIC RESPONSE. IT IS RECOMMENDED THAT ALL MICROWAVE WORKERS SHOULD UNDERGO A THOROUGH PRE-EMPLOYMENT AND PERIODIC MEDICAL EXAMINATION. PERSONS WITH CARDIOVASCULAR PROBLEMS OR LENTICULAR DEFECTS SHOULD BE CONSIDERED AS RISKS. BECAUSE OF INDICATION OF BONE MARROW AND THYROID SENSITIVITY TO MICROWAVES, HEMATOLOGIC AND THYROID FUNCTION STUDIES SHOULD BE INCORPORATED IN THE MEDICAL EXAMINATION. (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD- 887 119 6/18
WALTER REED ARMY INST OF RESEARCH WASHINGTON D C

BIOLOGICAL EFFECTS OF ELECTROMAGNETIC RADIATION - A BIBLIOGRAPHY. (U)

DESCRIPTIVE NOTE: PRELIMINARY BIBLIOGRAPHIC REPT.,
JUL 71 259P GROVE,H. MARK ;
CONTRACT: ARPA ORDER-1508

UNCLASSIFIED REPORT

DESCRIPTORS: (*ELECTROMAGNETIC RADIATION, *RADIOBIOLOGY), (*BIBLIOGRAPHIES, RADIOBIOLOGY), RADIATION EFFECTS, MICROWAVES, RADIATION HAZARDS, RADIATION INJURIES (U)
IDENTIFIERS: BEER(BIOLOGICAL EFFECTS OF ELECTROMAGNETIC RADIATION, BIOLOGICAL EFFECTS OF ELECTROMAGNETIC RADIATION (U)

THE REPORT DESCRIBES THE LITERATURE PROGRAM ON THE BIOLOGICAL EFFECTS OF ELECTROMAGNETIC RADIATION AND GIVES BIBLIOGRAPHIC INFORMATION ON APPROXIMATELY 1160 REFERENCES IDENTIFIED TO DATE. IT IS A PRELIMINARY REPORT CIRCULATED TO ELICIT ADDITIONS TO THE DATA BANK AND TO ACQUAINT POTENTIAL USERS WITH THE CURRENT CONTENTS. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD-A000 204 6/18 6/8
ARMY FOREIGN SCIENCE AND TECHNOLOGY CENTER CHARLOTTESVILLE VA

HYGIENIC EVALUATION OF FOOD RATIONS WITH PREDOMINANCE OF VEGETABLE PRODUCTS SUBJECTED TO GAMMA-IRRADIATION, (U)

FEB 73 11P BRONNIKOVA,I. A. ;OKUNEVA, L. A. ;
REPT. NO. FSTC-HT-23-1206-73

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: TRANS. OF VOPROSY PITANIYA (USSR) V31 N4 P74-80 1972.

DESCRIPTORS: *RADIATION EFFECTS, *GAMMA RAYS, *IRRADIATED FOOD, *RADIOBIOLOGY, RATS, EXPERIMENTAL DATA, FOOD, USSR, TRANSLATIONS, HYGIENE, STORAGE, VEGETABLES (U)
IDENTIFIERS: EVALUATION (U)

THE RESULT PRESENTS THE RESULTS OF THREE-YEAR INVESTIGATION OF RATIONS INCLUDING ALL ACCEPTABLE GAMMA-IRRADIATED VEGETABLE PRODUCTS. DETAILED BIOLOGICAL TESTS WERE CONDUCTED OF THE FEEDING OF AN EXPERIMENTAL RATION TO FIVE GENERATIONS OF RATS. ANALYSIS OF THE RESULTS INDICATED THAT FEEDING OF RATIONS, OF WHICH 82.2% - 83.6% BY CALORIE VALUE WERE GAMMA-IRRADICT FOR THE PURPOSE OF INCREASING STORAGE LIFE, HAD NO ADVERSE EFFECTS ON THE ORGANISM OF THE ANIMALS. BASED ON ACCEPTED INDEXES (DOMINATE LETHALS) THERE WAS ALSO NO MUTAGENIC EFFECT OF THE IRRADIATED VEGETABLE PRODUCTS. BASED ON THE INVESTIGATIONS CONDUCTED, HYGIENIC RECOMMENDATIONS WERE GIVEN CONCERNING THE POSSIBILITY OF EMPLOYING A SERIES OF IRRADIATED PRODUCTS IN THE DIET. (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD-A000 960 6/18
ARMED FORCES RADIOBIOLOGY RESEARCH INST BETHESDA MD

THE EFFECTS OF LOCAL SUPRALETHAL IRRADIATION ON RENAL FUNCTION. (U)

DESCRIPTIVE NOTE: SCIENTIFIC REPT., MAY 74 39P BUERKERT,J. E. ;DOYLE,J. E. ;EWALD,W. G. ;
REPT. NO. AFRRI-SR74-8
PROJ: DNA-NWED-QAXM
TASK: C903

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: *RADIATION EFFECTS, *KIDNEYS, KIDNEY FUNCTION TESTS, RADIATION INJURIES, SODIUM, EXCRETION, RADIOBIOLOGY (U)

CLEARANCE STUDIES WERE PERFORMED IN 16 DOGS WITH SURGICALLY FORMED HEMIBLADDERS TO EVALUATE THE INTRINSIC RENAL EFFECTS OF 2000 RADS OF X RAYS ADMINISTERED AS A SINGLE DOSE TO THE LEFT KIDNEY. THESE STUDIES WERE CONDUCTED UNDER CONDITIONS OF WATER DIURESIS IN 10 DOGS ON DAYS 1, 7 AND 14 POSTEXPOSURE. RESULTS OF THE STUDIES INDICATE THAT THE EARLIEST EFFECTS OF RADIATION ARE RELATED TO THE ABILITY OF THE PROXIMAL TUBULE TO REABSORB SODIUM AND ARE MANIFESTED BY BOTH AN INCREASE IN THE FRACTIONAL AND ABSOLUTE EXCRETION OF SODIUM WITHIN 24 HOURS OF EXPOSURE, WHICH CONTINUES THROUGHOUT THE INTERVAL OF THE STUDY, AND BY A MARKED INCREASE IN THE EXCRETION OF CH2O WITHIN A DAY OF EXPOSURE, WHICH BECOMES GREATER WITH TIME. APPROXIMATELY THREE WEEKS POSTEXPOSURE, BUT BEFORE GLOMERULAR FILTRATION RATE DECLINES, THE CONCENTRATING SEGMENT OF THE NEPHRON IS IMPAIRED. THESE STUDIES SUGGEST THAT RENAL TUBULAR INJURY IS THE MAJOR EARLY EFFECT OF RADIATION. (MODIFIED AUTHOR ABSTRACT) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD-A001 558 6/18
PENNSYLVANIA UNIV PHILADELPHIA

EFFECTS OF MICROWAVES: LOCAL 'HOT SPOT' HEATING BY MICROWAVES. (U)

DESCRIPTIVE NOTE: FINAL REPT. 1 JAN 70-31 DEC 73, OCT 74 10P SCHWAN,HERMAN P. ;
CONTRACT: N00014-67-A-0216-0015

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: CONTINUATION OF CONTRACTS NONR-551(05) AND NONR-551(52).

DESCRIPTORS: *RADIOBIOLOGY, RADIATION EFFECTS, MICROWAVES, HEAT, TISSUES(BIOLOGY), CELLS(BIOLOGY), RADIATION INJURIES (U)
IDENTIFIERS: *MICROWAVE RADIOBIOLOGY (U)

THE REPORT SUMMARIZES ACTIVITIES SINCE JANUARY 1970. ACTIVITIES IN THE LABORATORY INCLUDE THE FOLLOWING TOPICS: HOT SPOT STUDIES; FIELD FORCE EFFECTS; AND BIOPHYSICAL AND OTHER PRINCIPLES. (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD-A004 024 6/18
INSTITUTE FOR BEHAVIORAL RESEARCH INC SILVER SPRING MD

EFFECTS OF MICROWAVE IRRADIATION ON EMBRYONIC BRAIN TISSUE. (U)

DESCRIPTIVE NOTE: FINAL REPT. 15 OCT 73-14 OCT 74,
NOV 74 11P RIOCH,DAVID MCK. ;
REPT. NO. 151
CONTRACT: DAHC04-74-C-0004
MONITOR: ARO 11739.1-L

UNCLASSIFIED REPORT

DESCRIPTORS: *MICROWAVES, *RADIATION EFFECTS, *RADIOBIOLOGY, *BRAIN, IRRADIATION, EMBRYOS, TISSUES(BIOLOGY), RATS, LABORATORY ANIMALS, EXPERIMENTAL DATA, GROWTH(PHYSIOLOGY), CIRCADIAN RHYTHMS, RADIATION DOSAGE, DOSE RATE (U)
IDENTIFIERS: MICROWAVE RADIOBIOLOGY (U)

SEVERAL GROUPS OF DATED PREGNANT RATS WERE EXPOSED STARTING ON THE 13TH DAY OF GESTATION IN THE ANECHOIC CHAMBERS OR IN A CALIBRATED OVEN. ALL THE EXPOSURES TO MICROWAVE IRRADIATION WERE CONDUCTED AFTER 0700 AND BEFORE 1500 HOURS. THE RATS WERE SACRIFICED ON THE 19TH DAY OF GESTATION, THE FETUSES WEIGHED AND THEIR BRAINED FIXED AND SERIALLY SECTIONED. NO DIFFERENCES WERE FOUND BETWEEN THE IRRADIATED FETUSES AND THE CONTROLS WHICH HAD BEEN SIMILARLY HANDLED BUT NOT IRRADIATED. IN A FINAL EXPERIMENT RATS WERE EXPOSED TO IRRADIATION FROM 1700 TO 1900 HOURS OR OVERNIGHT (FROM 1800 TO 0800 OR 1000 HOURS) AT 1700 MHZ AND 5 OR 10 MW/SQ CM, ON THE 6TH TO THE 9TH AND THE 12TH TO THE 16TH DAYS OF GESTATION. THE EXPOSED FETUSES WERE HEAVIER THAN THE CONTROLS AND THE BRAINS LARGER. THE DIFFERENCE WAS APPROXIMATELY 10 PERCENT. THIS FINDING SUGGESTS THAT THE EFFECT MAY BE DUE TO SOME FACTOR WHICH VARIES WITH THE CIRCADIAN RHYTHM. IT MAY ALSO HAVE RESULTED FROM THE EARLIER OR THE REPEATED IRRADIATION. (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD-A004 854 6/18
ARMED FORCES RADIOBIOLOGY RESEARCH INST BETHESDA MD

CEREBRAL TEMPERATURE CHANGES IN THE MONKEY (MACACA MULATTA) AFTER 2500 RADS IONIZING RADIATION, (U)

APR 74 15P MCFARLAND, W. L. ; WILLIS, J. A. ;

REPT. NO. AFRRI-SR74-7
PROJ: DNA-MWED-QAXM
TASK: A905

UNCLASSIFIED REPORT

DESCRIPTORS: *RADIOBIOLOGY, *RADIATION EFFECTS, *CEREBRUM, MONKEYS, TEMPERATURE, RESPONSE(BIOLOGY), IMPLANTATION, IONIZING RADIATION, PHYSIOLOGICAL EFFECTS, BRAIN (U)

TO DETERMINE THE TEMPERATURE RESPONSE OF THE BRAIN TO RADIATION, THERMISTOR TEMPERATURE SENSING PROBES WERE IMPLANTED INTO THALAMIC AND CORTICAL AREAS OF EIGHT MONKEYS AND THE ARCH OF THE AORTA. AFTER SECURING BASE-LINE TEMPERATURE RECORDINGS, THE MONKEYS WERE EXPOSED TO 2500 RADS WHOLE-BODY PULSED MIXED GAMMA-NEUTRON RADIATION IN THE AFRRI-TRIGA REACTOR. TEMPERATURE AT ALL MEASURED SITES GENERALLY DROPPED BRIEFLY IMMEDIATELY AFTER THE PULSE, THEN ROSE AND STAYED ELEVATED 1-2C FOR THE REMAINDER OF THE 3-1/2-HOUR OBSERVATION PERIOD. THERE DID NOT APPEAR TO BE ANY REGIONAL DIFFERENCES IN BRAIN TEMPERATURE RESPONSE, AND BRAIN TEMPERATURE FOLLOWED CORE (AORTIC) TEMPERATURE CHANGES. (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD-A004 943 6/18
NAVAL SURFACE WEAPONS CENTER DAHLGREN LAB VA

THE EFFECTS OF HIGH POWER PULSED AND LOW LEVEL CW MICROWAVE RADIATION ON AN OPERANT BEHAVIOR IN RATS. (U)

DESCRIPTIVE NOTE: TECHNICAL REPT.,
JAN 75 24P DIACHENKO,JOSEPH A. ;MILROY, WILLIAM C. ;
REPT. NO. NSWC/DL-TR-3230

UNCLASSIFIED REPORT

DESCRIPTORS: *RADIOBIOLOGY, *MICROWAVES, *RADIATION EFFECTS, *BEHAVIOR, RATS, EXPERIMENTAL DATA, LABORATORY ANIMALS, RESPONSE(BIOLOGY), EXPOSURE(PHYSIOLOGY), HEAT STRESS(PHYSIOLOGY), PERFORMANCE(HUMAN), ELECTROMAGNETIC RADIATION (U)
IDENTIFIERS: RECOMMENDATIONS, MICROWAVE RADIOBIOLOGY (U)

THE TWO EXPERIMENTS REPORTED WERE AIMED AT STUDYING THE EFFECTS OF PULSED AND LOW-LEVEL CW MICROWAVE RADIATION ON AN OPERANT BEHAVIOR IN RATS. THE SUBJECTS WERE TRAINED TO PERFORM A LEVER PRESSING RESPONSE ON A DRL SCHEDULE (DIFFERENTIAL REINFORCEMENT OF LOW RATE) AND TESTED IMMEDIATELY AFTER ONE HOUR DAILY EXPOSURE TO 1, 5, 10, 15 (MILLIWATTS PER SQUARE CM) POWER LEVELS AT 2,450 MHZ WHILE OTHER SUBJECTS WERE EXPOSED TO A PULSED FIELD OF 125 KILOVOLT PER METER. NO EFFECTS WERE FOUND AT THE 1, 5, AND 10 (MILLIWATTS PER SQUARE CM) LEVELS NOR DID THE PULSED FIELD AFFECT PERFORMANCE. HOWEVER, THE SUBJECTS EXPOSED TO THE 15 (MILLIWATTS PER SQUARE CM), WHILE SHOWING NO SIGNIFICANT DECRIMENT IN PERFORMANCE, DID SHOW OBVIOUS SIGNS OF HEAT STRESS. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD-A005 898 6/18
NAVAL AEROSPACE MEDICAL RESEARCH LAB PENSACOLA FLA

THE EFFECT OF EXTREMELY LOW FREQUENCY RADIATION ON HUMAN PERFORMANCE: A PRELIMINARY STUDY. (U)

DESCRIPTIVE NOTE: MEDICAL RESEARCH PROGRESS REPT., AUG 74 24P GIBSON,RICHARD S. ;MORONEY, WILLIAM F. ;
REPT. NO. NAMRL-1195
PROJ: MF51.524
TASK: MF51.524.015

UNCLASSIFIED REPORT

DESCRIPTORS: *HEALTH PHYSICS, *RADIOBIOLOGY, *RADIATION EFFECTS, MEMORY(PSYCHOLOGY), PERFORMANCE(HUMAN), EXTREMELY LOW FREQUENCY, PSYCHOMOTOR FUNCTION, RESPONSE(BIOLOGY), MAGNETIC FIELDS, TEST METHODS (U)
IDENTIFIERS: RECOMMENDATIONS (U)

INTEREST IN THE DEVELOPMENT OF AN EXTREMELY LOW FREQUENCY (ELF) COMMUNICATIONS SYSTEM FOR NAVAL USE HAS RESULTED IN A PROGRAM TO DETERMINE THE EFFECTS OF SUCH FIELDS ON MAN. THIS REPORT REPRESENTS PART OF PILOT LEVEL EFFORT TO DEVELOP A SET OF TESTS AND PROCEDURES FOR DETERMINING WHETHER ELF FIELDS HAVE ANY MEASUREABLE EFFECTS ON HUMAN MEMORY AND PSYCHOMOTOR FUNCTIONS. NONE OF THE TESTS EXHIBITED SIGNIFICANT PERFORMANCE DECREMENTS UNDER THE GROSS ANALYTICAL CONDITIONS. THE WILKINSON ADDING TASK EXHIBITED SIGNIFICANT PERFORMANCE DECREMENTS DURING THE SECOND OF TWO TESTING SESSIONS WHILE BEING EXPOSED TO THE ELF RADIATION. ONE OF THE RESPONSE ANALYSIS TESTER (RATER) CONDITIONS EXHIBITED A SIGNIFICANT IMPROVEMENT IN PERFORMANCE. ONE SUBJECT HAD A SIGNIFICANTLY BAD SESSION IN WHICH HIS PERFORMANCE DECLINED ON 6 OUT 7 MEASURES; HOWEVER, THIS PERFORMANCE APPEARED TO BE UNRELATED TO OTHER PSYCHOLOGICAL OR PHYSIOLOGICAL DATA. IN VIEW OF THE LARGE NUMBER OF STATISTICAL ANALYSES PERFORMED ON A LIMITED AMOUNT OF DATA, THE FEW SIGNIFICANT PERFORMANCE DECREMENTS MUST BE INTERPRETED WITH EXTREME CAUTION. THEY IDENTIFY TECHNIQUES TO BE REPLICATED IN FUTURE RESEARCH AND NOTHING MORE. INDIVIDUAL DIFFERENCES IN TEST PERFORMANCE WERE LARGE, ANY EFFECTS DUE TO THE EXPOSURE TO ELF MAGNETIC FIELDS WERE SMALL; (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD-A008 267 18/6 6/18
ARMY FOREIGN SCIENCE AND TECHNOLOGY CENTER CHARLOTTESVILLE VA

MEANS OF INDIVIDUAL PROTECTION AND CONTROL OF THE ACTION OF IONIZING RADIATION. (U)

JUN 74 20P REFORMATSKII, I. A. ;
REPT. NO. FSTC-HT-23-0524-74

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: TRANS. OF MONO. GORYACHIE I IZOTOPNYE LABORATORII, MOSCOW, 1971 P227-240.

DESCRIPTORS: *HEALTH PHYSICS, *IONIZING RADIATION, *RADIATION PROTECTION, *RADIOBIOLOGY, PROTECTIVE CLOTHING, USSR, TRANSLATIONS, LABORATORIES, MONITORING, SAFETY, PROTECTIVE MASKS, RADIATION MONITORS, RADIATION EFFECTS (U)

THE REPORT DESCRIBES METHODS FOR USING INDIVIDUAL PROTECTION MEANS, AND MONITORING THE EFFECTS OF IONIZING RADIATION IN HOT LABORATORIES. DANGEROUS RADIOACTIVE SUBSTANCES CAN AFFECT THE SKIN SURFACE OR CAN BE ABOSRBED INTO THE BODY. SPECIAL PROTECTIVE CLOTHING, GLOVES, SUITS, FOOTWEAR, HAS BEEN DESIGNED TO COMBAT THE FIRST AND SPECIAL MASKS HELP TO PREVENT THE SECOND. MONITORING EQUIPMENT, BOTH PORTABLE AND FIXED, CAN BE USED TO TEST THE ATMOSPHERE AND PROVIDE SAFETY FOR PERSONNEL WORKING IN CONDITIONS WHERE RADIATION COULD OCCUR. (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD-A008 276 6/18
IIT RESEARCH INST CHICAGO ILL

ELF COUPLING TO BIOSPHERES. (U)

DESCRIPTIVE NOTE: TECHNICAL MEMO.,
MAR 75 27P SPIEGEL,R. J. ;
REPT. NO. IITRI-E6249-3
CONTRACT: N00039-73-C-0030

UNCLASSIFIED REPORT

DESCRIPTORS: *ELECTROMAGNETIC FIELDS, *RADIATION EFFECTS, *HEALTH PHYSICS, *RADIOBIOLOGY, ANIMALS, MATHEMATICAL MODELS, HUMANS, EXPOSURE(PHYSIOLOGY), TRANSMISSION LINES, ELECTRIC POWER, EXTREMELY LOW FREQUENCY (U)
IDENTIFIERS: SANGUINE PROJECT (U)

THE INDUCED FIELDS, CURRENTS AND POWER ABSORBED BY SPHERICAL MODELS OF HUMANS OR ANIMALS WHEN EXPOSED TO ELF ELECTROMAGNETIC FIELDS ARE CALCULATED IN THIS REPORT. IT IS SHOWN BY A QUASI-STATIC APPROXIMATION THAT THE INDUCED FIELD IS COMPRISED OF TWO COMPONENTS: AN ELECTRIC TERM AND A MAGNETIC TERM. THE RELATIVE IMPORTANCE OF EACH TERM IS DISCUSSED. IT IS CONCLUDED THAT CHRONIC BIOLOGICAL EFFECTS OF AN ACUTE NATURE (SUCH AS BODY HEATING OR NEURAL ACTIVITY) ARE UNLIKELY TO OCCUR FROM ELF ELECTROMAGNETIC FIELDS OF LOW INTENSITY. (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD-A008 404 6/18
CALIFORNIA UNIV LOS ANGELES LAB OF ENVIRONMENTAL NEUROBIOLOGY

AN EVALUATION OF POSSIBLE EFFECTS OF 45 HZ, 60 HZ AND 75 HZ ELECTRIC FIELDS ON NEUROPHYSIOLOGY AND BEHAVIOR OF MONKEYS. PHASE 1: CONTINUOUS WAVE. (U)

DESCRIPTIVE NOTE: TECHNICAL REPT., APR 75 301P GAVALAS-MEDICI,R. ; MAGDALENO,S. R. ;
CONTRACT: N00014-69-A-0200-4037

UNCLASSIFIED REPORT

DESCRIPTORS: *ELECTRIC FIELDS, *RADIATION EFFECTS, *RADIOBIOLOGY, *BEHAVIOR, MONKEY, ELECTROENCEPHALOGRAPHY, PHYSIOLOGY, NERVOUS SYSTEM, EXTREMELY LOW FREQUENCY, RESPONSE(BIOLOGY), THRESHOLDS(PHYSIOLOGY), EXPERIMENTAL DATA, LABORATORY ANIMALS, IMPLANTATION, PSYCHOPHYSIOLOGY, ELECTRODES (U)
IDENTIFIERS: ANIMAL BEHAVIOR, SANGUINE PROJECT, EVALUATION, *NEUROPHYSIOLOGY (U)

FIVE MONKEYS WERE WELL TRAINED ON A SKINNERIAN SCHEDULE IN WHICH A FIVE SEC INTERVAL BETWEEN RESPONSES WAS REINFORCED. AFTER A STABLE LEVEL OF RESPONDING HAD BEEN ACHIEVED, MONKEYS WERE EXPOSED TO A RANDOM SERIES OF SEVERAL ELECTRIC FIELD CONFIGURATIONS WITH FREQUENCIES OF 7 HZ, 45 HZ, 60 HZ OR 75 HZ AND WITH VOLTAGE LEVELS OF 1, 10, 56 OR 100 V/M P-P. AT 1 V/M P-P THERE WAS NO DISCERNIBLE EFFECT ON EITHER BEHAVIOR OR ELECTRICAL BRAIN WAVES. (THIS IS APPROXIMATELY 5 TIMES THE VOLTAGE ASSOCIATED WITH PROJECT SANGUINE.) AT 10 V/M THERE WAS EVIDENCE FOR A FREQUENCY-SPECIFIC THRESHOLD AT 7 HZ. TIME BETWEEN RESPONSES (INTERRESPONSE TIMES) WAS SIGNIFICANTLY SHORTER AND VARIABILITY OF RESPONDING WAS REDUCED. WHEN VOLTAGE WAS INCREASED TO 56 V/M DIRECTION OF THE EFFECT WAS THE SAME AS AT 10 V/M AND THE MAGNITUDE OF THE CHANGE WAS MARKEDLY INCREASED FOR BOTH 7 HZ AND 75 HZ FIELDS. AT 100 V/M THERE WAS SOME EVIDENCE FOR A CARRY-OVER EFFECT FROM ONE DAY TO THE NEXT. (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD-A009 327 6/18
ARMED FORCES RADIOBIOLOGY RESEARCH INST BETHESDA MD

ANNUAL RESEARCH REPORT 1 JULY 1973 -- 30 JUNE 1974. (U)

JUN 74 154P
REPT. NO. AFRRI-ARR-8

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO REPORT DATED 30 JUN 73, AD-777 718.

DESCRIPTORS: *RADIOBIOLOGY, *MEDICAL RESEARCH, SCIENTIFIC RESEARCH, RADIATION DOSAGE, RADIATION EFFECTS, IMMUNOLOGY, BIOCHEMISTRY, PHARMACOLOGY, TOXICOLOGY, PATHOLOGY, PHYSIOLOGY, NEOPLASMS (U)
IDENTIFIERS: RADIOPHARMACEUTICAL AGENTS (U)

;CONTENTS: PATHOPHYSIOLOGICAL STUDIES OF POTENTIALLY TOXIC SUBSTANCES; BIOLOGICAL EFFECTS OF ELECTROMAGNETIC PULSES; SUPPRESSION OF SECONDARY DISEASE BY IN VITRO EXPOSURE OF MIXTURES OF LYMPHOID AND STEM CELLS TO PURIFIED ANTILYMPHOCYTE ANTIBODY; ENDOTOXIN EFFECTS OF MOUSE LIVER ADENYL CYCLASE; DEVELOPMENT OF CLINICAL APPROACHES FOR THE TREATMENT OF RADIATION SICKNESS AND GRAFT VERSUS HOST DISEASE THROUGH MANAGEMENT OF THE INTESTINAL FLORA; CONTROL OF WHITE CELL POPULATION IN THE POSTIRRADIATED ANIMAL; GLYCOPROTEINS IN DIABETES; TECHNETIUM-99M PYROPHOSPHATE--COMPARISON OF ED50 FOR TETANY AND ACIDOSIS WITH ACUTE LD50. (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD-A010 187 6/18
WISCONSIN UNIV-PARKSIDE KENOSHA DIV OF SCIENCE

EFFECTS OF EXTREMELY LOW FREQUENCY ELECTROMAGNETIC FIELDS ON GROWTH AND DIFFERENTIATION OF 'PHYSARUM POLYCEPHALUM'. (U)

DESCRIPTIVE NOTE: TECHNICAL REPT. 15 SEP 71-30 JUN 74 ON PHASE 1,
APR 75 56P GOODMAN,E. M. ;GREENEBAUM, BEN ;MARRON,MICHAEL T. ;
CONTRACT: N00014-67-A-0128-0021
PROJ: NR-201-126

UNCLASSIFIED REPORT

DESCRIPTORS: *ELECTROMAGNETIC RADIATION, *RADIATION EFFECTS, *RADIOBIOLOGY, *MOLDS(ORGANISMS), GROWTH(PHYSIOLOGY), EXTREMELY LOW FREQUENCY, EXPOSURE(PHYSIOLOGY), FUNGI, MICROORGANISMS, LIFE CYCLES, MITOSIS, CELL DIVISION (U)
IDENTIFIERS: *PHYSARUM POLYCEPHALUM (U)

MICROPLASMODIA FROM THE SLIME MOLD PHYSARUM POLYCEPHALUM HAVE BEEN CONTINUOUSLY EXPOSED TO WEAK ELECTROMAGNETIC FIELDS AT 60 AND 75 HZ. TO DATE, MICROPLASMODIA HAVE BEEN EXPOSED TO FIELD OF 75 HZ, 2.0 G, 0.7 V/M FOR MORE THAN 700 DAYS. ANOTHER SET OF CULTURES HAS BEEN EXPOSED TO 60 HZ, 2.0 G, 0.7 V/M FOR MORE THAN 400 DAYS. THE TIME BETWEEN SUCCESSIVE MITOTIC DIVISIONS IN CULTURES EXPOSED TO THESE FIELDS VARIED FROM 0.5 TO 2 HOURS LONGER THAN THEIR RESPECTIVE CONTROLS. THIS DELAY WAS DISCERNABLE AFTER APPROXIMATELY 90 TO 120 DAYS OF EXPOSURE TO ELECTROMAGNETIC RADIATION. THE ABILITY TO COMPLETE BOTH THE SEXUAL (SPORULATION) OR ASEXUAL (SPHERULATION) LIFE CYCLES WAS NOT AFFECTED BUT A RETARDATION IN REVERSIBLE PHOTOPLASMIC STREAMING WAS OBSERVED. (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD-A011 044 6/18
ARMED FORCES RADIOBIOLOGY RESEARCH INST BETHESDA MD

PRIMATE PHYSICAL ACITIVITY FOLLOWING EXPOSURE TO A SINGLE 2000-RAD PULSED DOSE OF MIXED GAMMA-NEUTRON RADIATION. (U)

DESCRIPTIVE NOTE: SCIENTIFIC REPT., DEC 74 43P CURRAN,C. R. ;FRANZ,C. G. ;
REPT. NO. AFRRI-SR74-29
PROJ: DNA-NWED-QAXM
TASK: A904

UNCLASSIFIED REPORT

DESCRIPTORS: *RADIATION EFFECTS, *RADIOBIOLOGY, *IONIZING RADIATION, MONKEYS, LABORATORY ANIMALS, EXPERIMENTAL DATA, BEHAVIOR, PERFORMANCE(HUMAN), PHYSIOLOGICAL EFFECTS, RADIATION DOSAGE (U)
IDENTIFIERS: MACACA MULATTA (U)

TWELVE MALE RHESUS MONKEYS (MACACA MULATTA) WERE TRAINED TO PERFORM ONE OF THE FOLLOWING TASKS: DISCRETE TRIAL, CUED AVOIDANCE; SHOCK MOTIVATED PHYSICAL ACTIVITY; OR A COMBINED CUED AVOIDANCE-PHYSICAL ACTIVITY TASK. ALL TESTS WERE CONDUCTED IN A PRIMATE PHYSICAL ACTIVITY WHEEL DEVELOPED AT THE AFRRI. THE ANIMALS WERE EXPOSED TO A SINGLE 2000-RAD PULSED DOSE OF MIXED NEUTRON-GAMMA RADIATION. ALL ANIMALS PERFORMING THE PHYSICAL ACTIVITY TASK EXPERIENCED PERIODS OF EARLY TRANSIENT INCAPACITATION WITHIN THE FIRST SEVEN MINUTES OF POSTIRRADIATION TESTING. ONLY ONE OF THE ANIMALS PERFORMING THE CUED AVOIDANCE TASK EXPERIENCED AN EARLY TRANSIENT INCAPACITATION. THE ANIMALS PERFORMING THE COMBINED TASK EXPERIENCED PERIODS OF EARLY TRANSIENT INCAPACITATION ON THE PHYSICAL ACTIVITY TASK BUT NOT ON THE CUED AVOIDANCE TASK. THE RECOVERY PERIOD PERFORMANCE LEVEL OF EACH OF THE ANIMALS PERFORMING THE PHYSICAL ACITVITY TASK WAS ALSO SIGNIFICANTLY LOWER THAN THE PERFORMANCE OF ANY ANIMAL PERFORMING THE CUED AVOIDANCE TASK. (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD-A011 045 6/18
ARMED FORCES RADIOBIOLOGY RESEARCH INST BETHESDA MD

POSTIRRADIATION VOMITING. (U)

DESCRIPTIVE NOTE: SCIENTIFIC REPT.,
OCT 74 23P MIDDLETON,G. R. ;YOUNG,R.
W. ;
REPT. NO. AFRRI-SR74-23
PROJ: DNA-NWED-QAXM
TASK: A904

UNCLASSIFIED REPORT

DESCRIPTORS: *RADIATION EFFECTS, *RADIOBIOLOGY,
*EMESIS, IONIZING RADIATION, MONKEYS,
EXPERIMENTAL DATA, LABORATORY ANIMALS,
EXPOSURE(PHYSIOLOGY), PHYSIOLOGICAL EFFECTS,
RADIATION DOSAGE, VISUAL PERCEPTION (U)

ONE HUNDRED AND TWENTY-NINE MALE RHESUS MONKEYS (MACACA MULATTA) EXPOSED TO PROMPT RADIATIONS (NEUTRON/GAMMA = 0.4 AND PULSE WIDTH = 50 MSEC) RANGING FROM 700 TO 5600 RADS (MIDHEAD DOSE) WERE ANALYZED FOR INCIDENCE OF VOMITING. THE ANIMALS WERE FASTED 18 HOURS PREEXPOSURE AND OBSERVED FOR INCIDENCE OF VOMITING FOR TWO HOURS POSTEXPOSURE. FOR DOSES LESS THAN 1000 RADS, THE NUMBER OF ANIMALS THAT VOMITED INCREASED DIRECTLY WITH DOSE. ABOVE 1000 RADS, THE NUMBER OF ANIMALS THAT VOMITED DECREASED WITH INCREASING DOSE. THE TOTAL NUMBER OF VOMITIONS PER DOSE GROUP FOLLOWED A NEARLY IDENTICAL PATTERN TO THE INCIDENCE OF EMESIS. IN ALL DOSE GROUPS MOST OF THE EMETIC EPISODES OCCURRED BETWEEN 20 AND 50 MINUTES POSTIRRADIATION. (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD-A012 084 6/18
ARMY NUCLEAR AGENCY FORT BLISS TEX

THE CALCULATION OF ABSORBED DOSE AND TISSUE TRANSMISSION FACTORS. (U)

DESCRIPTIVE NOTE: TECHNICAL MEMO.,
NOV 74 19P WARSHAWSKY,A. S. ;
REPT. NO. NUA-TM-1-74

UNCLASSIFIED REPORT

DESCRIPTORS: *RADIATION EFFECTS, *RADIOBIOLOGY, TISSUES(BIOLOGY), MONKEYS, LABORATORY ANIMALS, EXPERIMENTAL DATA, RADIATION DOSAGE, EXPOSURE(PHYSIOLOGY) (U)

;CONTENTS: INTERACTION BETWEEN RADIATION AND TISSUE; RADIATION QUANTITIES AND UNITS; RADIATION QUALITY AND DOSE EQUIVALENT; HISTORY OF DOSE CALCULATIONS; TISSUE TRANSMISSION FACTORS; RESULTS AND LIMITATIONS. (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD-A013 053 6/16 6/18
COLORADO STATE UNIV FORT COLLINS DEPT OF RADIOLOGY AND RADIATION BIOLOGY

TUMOR MICROVASCULATURE FOLLOWING FRACTIONATED X IRRADIATION, (U)

MAR 75 5P HILMAS,DUANE E. ;GILLETTE, EDWARD L. ;

UNCLASSIFIED REPORT
AVAILABILITY: PUB. IN RADIOLOGY, V116 N1 P165-169 JUL 75.
SUPPLEMENTARY NOTE: PRESENTED AT THE INTERNATIONAL CONGRESS OF RADIATION RESEARCH (5TH), 14-20 JUL 74, SEATTLE, WASH.

DESCRIPTORS: *RADIOBIOLOGY, *NEOPLASMS, MICE, MAMMARY GLANDS, X RAYS, IRRADIATION, EXPOSURE(PHYSIOLOGY), BLOOD CIRCULATION, DOSAGE, CHEMOTHERAPEUTIC AGENTS, PHOTOMICROGRAPHY, REPRINTS (U)

THE MICROVASCULATURE OF C3H/BI MOUSE MAMMARY CARCINOMAS 8 MM IN AVERAGE DIAMETER WAS EVALUATED USING MORPHOMETRIC METHODS FOLLOWING SIX CONSECUTIVE DAILY EXPOSURES OF 500 R OF X RADIATION. TUMOR VOLUME DID NOT CHANGE SIGNIFICANTLY DURING THE INTERVALS BETWEEN TREATMENTS. TUMORS BEGAN TO GROW AGAIN 72 HOURS AFTER THE SIXTH 500-R FRACTION, WITH MEAN VESSEL LENGTH AND SURFACE AREA REACHING MAXIMUM VALUES AND VESSEL DIAMETERS AND VOLUMES BECOMING MINIMAL AT THIS TIME. THESE CHANGES WERE ATTRIBUTED TO IMPROVED COLLOIDAL-CARBON FILLING OF PREVIOUSLY EXISTING NONFUNCTIONAL VESSELS. WHEN ANATOMICALLY DERIVED ESTIMATES OF VASCULAR DIMENSIONS WERE RELATED TO A METABOLICALLY USEFUL BLOOD SUPPLY, IMPROVED CAPABILITY FOR EXCHANGE OF ESSENTIAL NUTRIENTS OCCURRED 72 HOURS AFTER THE SIXTH 500-R FRACTION. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD-A013 250 6/18
ARMED FORCES RADIOBIOLOGY RESEARCH INST BETHESDA MD

BIOLOGICAL MEASUREMENTS IN RODENTS EXPOSED CONTINUOUSLY THROUGHOUT THEIR ADULT LIFE TO PULSED ELECTROMAGNETIC RADIATION. (U)

DESCRIPTIVE NOTE: SCIENTIFIC REPT.,
APR 75 22P BAUM,S. J. ;EKSTROM,M. E. ;SKIDMORE,W. D. ;WYANT,D. E. ;ATKINSON, J. L. ;
REPT. NO. AFRRI-SR75-11
PROJ: DNA-NWED-QAXM
TASK: C903

UNCLASSIFIED REPORT

DESCRIPTORS: *ELECTROMAGNETIC RADIATION, *RADIATION EFFECTS, *RADIOBIOLOGY, EXPOSURE(PHYSIOLOGY), PHYSIOLOGICAL EFFECTS, BLOOD CHEMISTRY, CHROMOSOMES, NEOPLASMS, FERTILITY, LIFE SPAN (U)

RODENTS WERE EXPOSED CONTINUOUSLY FOR 94 WEEKS OF THEIR ADULT LIFE TO A TOTAL OF 2.5 X 10 TO THE 8TH POWER PULSES FROM THE AFRRI ELECTROMAGNETIC PULSE (EMP) SIMULATOR WHICH PROVIDES FIVE PULSES PER SECOND WITH A PEAK ELECTRIC FIELD INTENSITY OF 447 KV/M, A 5-NSEC RISE TIME AND 550-NSEC 1/E FALL TIME. THE FOLLOWING BIOLOGICAL PARAMETERS WERE MEASURED: BLOOD CHEMISTRY, BLOOD AND BONE MARROW CELLULAR CONCENTRATION, CHROMOSOMAL ABERRATIONS, ERYTHROCYTE PRODUCTION, EFFECTS ON FERTILITY AND REPRODUCTIVE CAPABILITY AND APPEARANCE OF TUMORS AND OTHER LATE EFFECTS. AT NO TIME BEFORE AND PARTICULARLY AS THE RODENTS APPROACHED THE END OF THEIR LIFE-SPAN DID ANY OF THE BIOLOGICAL MEASUREMENTS INDICATE AN EFFECT OF THE EMP RADIATION. WHILE IT IS EXTREMELY DIFFICULT TO PROVE THE ABSENCE OF ANY INJURY, IT CAN BE UNEQUIVOCALLY STATED THAT EMP EXPOSURE PRESENTED NO BIOLOGICAL HAZARD TO THE RODENTS OF THE PRESENT STUDY. (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD-A013 315 6/18
HOWARD UNIV WASHINGTON D C BIO-ENVIRONMENTAL ENGINEERING AND SCIENCES RESEARCH LAB

BIOLOGICAL EFFECTS OF NON-IONIZING RADIATION. (U)

DESCRIPTIVE NOTE: TECHNICAL REPT.,
JUL 75 56P VARMA,MAN M. ;TRABOULAY, ERIC A. , JR;
CONTRACT: N00014-73-A-0346-0002
PROJ: NR-200-999

UNCLASSIFIED REPORT

DESCRIPTORS: *RADIATION EFFECTS, *RADIOBIOLOGY, *ELECTROMAGNETIC RADIATION, MUTATIONS, EXPOSURE(PHYSIOLOGY), LITERATURE SURVEYS, DEOXYRIBONUCLEIC ACIDS, TABLES(DATA), TESTES, MICROWAVES (U)
IDENTIFIERS: *MICROWAVE RADIOBIOLOGY, ELECTROMAGNETIC RADIATION HAZARDS, RECOMMENDATIONS, SPERMATOGENESIS (U)

THE GOALS OF THE RESEARCH PROJECT WERE TO COMPLETE A COMPREHENSIVE AND INTENSIFIED RESEARCH TO CATEGORIZE AND EVALUATE THE MUTAGENIC INJURY CAUSED BY NONIONIZING RADIATION (MICROWAVES). THE VARIABLES IN THIS STUDY WERE MICROWAVE FREQUENCY, POWER DENSITY AND TIME OF EXPOSURE. TESTICULAR TISSUE WAS EXAMINED HISTOLOGICALLY FOR EVIDENCE OF DAMAGE, AND MUTAGENICITY AND INFERTILITY WAS DETERMINED BY THE DOMINANT LETHAL ASSAY. DEOXYRIBONUCLEIC ACID ISOLATION AND CHARACTERIZATION WAS UNDERTAKEN. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD-A013 329 6/18 9/1
NAVAL AEROSPACE MEDICAL RESEARCH LAB PENSACOLA FLA

SOME CONSIDERATIONS CONCERNING THE USE OF MAGNETRON GENERATORS IN MICROWAVE BIOLOGICAL RESEARCH. (U)

DESCRIPTIVE NOTE: INTERIM REPT.,
MAY 75 15P RENO,VERNON R. ;
REPT. NO. NAMRL-1216
PROJ: MF51.524
TASK: MF51.524.015

UNCLASSIFIED REPORT

DESCRIPTORS: *MICROWAVE TUBES, *RADIOBIOLOGY, RADIATION EFFECTS, MICROWAVES, MAGNETRONS, TRAVELING WAVE TUBES, SPECTRAL ENERGY DISTRIBUTION, POWER SPECTRA, RADIO FIELDS (U)

A SERIES OF MEASUREMENTS WAS TAKEN TO CHARACTERIZE THE MICROWAVE FIELDS PRODUCED FOR BIOLOGICAL STUDIES BY TRAVELING-WAVE-TUBE AND MAGNETRON GENERATORS UNDER DIFFERENT OPERATING CONDITIONS. RESULTS INDICATE THAT THE FIELD INCIDENT ON THE ANIMAL CAN DIFFER DEPENDING UPON BOTH THE GENERATOR AND THE CONDITIONS OF ITS OPERATION. THESE DIFFERENCES MAY NOT BE APPARENT IF THE FIELD IS DESCRIBED ONLY IN TERMS OF AVERAGE POWER. (U)

AD-A047 300 DEFENSE DOCUMENTATION CENTER ALEXANDRIA VA F/G 6/18
RADIOBIOLOGY.(U)
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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD-A014 065 6/15
LOUISVILLE UNIV KY SCHOOL OF MEDICINE

CORRELATION OF ANIMAL, CRYPT, AND STEM CELL SURVIVAL IN FISSION NEUTRON IRRADIATED MICE: A CHEMICAL PROTECTION STUDY. (U)

DESCRIPTIVE NOTE: FINAL REPT. OCT 71-DEC 74, FEB 75 101P SIGDESTAD,CURTIS P. ;
CONTRACT: DADA17-72-C-2038

UNCLASSIFIED REPORT

DESCRIPTORS: *RADIOPROTECTIVE AGENTS, *DRUGS, RADIOBIOLOGY, X RAYS, NEUTRON IRRADIATION, GASTROINTESTINAL SYSTEM, HEMOPOIETIC SYSTEM, PATHOLOGY, PHARMACOLOGY, DOSAGE (U)

THE REPORT SURVEYS THE EFFECTIVENESS OF NEWLY SYNTHESIZED ANTIRADIATION COMPOUNDS (WR-2721, WR-77913, WR-638, WR-1607, WR-2347, WR-3689, WR-109342, WR-2822, AND WR-2823) IN COMPARISON WITH THE OTHER PROTECTORS (MEA AND AET). THE EFFECTS OF HIGH ENERGY X-RAYS (4 MEV) AND FISSION NEUTRONS WAS TESTED ON (1) INTESTINAL CRYPT SURVIVAL, (2) LETHALITY, LD50 AND (3) TOTAL AND PER CRYPT CELLULARITY. (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD-A015 068 6/18 6/6
NAVAL MEDICAL RESEARCH AND DEVELOPMENT COMMAND BETHESDA MD
ELECTROMAGNETIC RADIATION PROJECT OFFICE

COMPILATION OF NAVY SPONSORED ELF BIOMEDICAL AND ECOLOGICAL RESEARCH REPORTS. VOLUME I. (U)

FEB 75 744P
REPT. NO. EMPRO-2-VOL-1

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO VOLUME 2, AD-A015 069.

DESCRIPTORS: *EXTREMELY LOW FREQUENCY, *ELECTROMAGNETIC RADIATION, *RADIOBIOLOGY, RADIATION EFFECTS, IONIZING RADIATION, ECOLOGY, MEDICAL RESEARCH (U)
IDENTIFIERS: *RADIOECOLOGY (U)

THIS VOLUME IS ONE OF SEVERAL WHICH COMBINED IS A COMPILATION OF ALL RESEARCH REPORTS AND PAPERS TO DATE WHICH DESCRIBE THE EXTREMELY LOW FREQUENCY (ELF) RESEARCH PERFORMED UNDER THE SANGUINE BIOLOGICAL-ECOLOGICAL RESEARCH PROGRAM. IT INCLUDES ALL FINAL REPORTS, TECHNICAL REPORTS, AND PAPERS WRITTEN BY THE INVESTIGATORS WHO PERFORMED THE RESEARCH. EACH DOCUMENT APPEARING IN THESE VOLUMES WAS PRINTED FROM AN UNEDITED COPY OF THE INVESTIGATOR'S REPORT OR FROM AN UNEDITED COPY OF A PAPER WRITTEN BY THE INVESTIGATOR. NO ATTEMPT WAS MADE TO SUMMARIZE THE INVESTIGATOR'S RESULTS. (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD-A015 069 6/18 6/6
NAVAL MEDICAL RESEARCH AND DEVELOPMENT COMMAND BETHESDA MD
ELECTROMAGNETIC RADIATION PROJECT OFFICE

COMPILATION OF NAVY SPONSORED ELF BIOMEDICAL AND ECOLOGICAL RESEARCH REPORTS. VOLUME II. (U)

FEB 75 734P
REPT. NO. EMRPO-2-VOL-2

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO VOLUME 1, AD-A015 068.

DESCRIPTORS: *EXTREMELY LOW FREQUENCY, *ELECTROMAGNETIC RADIATION, *RADIOBIOLOGY, RADIATION EFFECTS, IONIZING RADIATION, ECOLOGY, MEDICAL RESEARCH (U)
IDENTIFIERS: *RADIOECOLOGY (U)

THIS VOLUME IS ONE OF SEVERAL WHICH COMBINED IS A COMPILATION OF ALL RESEARCH REPORTS AND PAPERS TO DATE WHICH DESCRIBE THE EXTREMELY LOW FREQUENCY (ELF) RESEARCH PERFOP NDER THE SANGUINE BIOLOGICAL-ECOLOGICA. LARCH PROGRAM. IT INCLUDES ALL FINAL REPO. S, TECHNICAL REPORTS, AND PAPERS WRITTEN BY THE INVESTIGATORS WHO PERFORMED THE RESEARCH. EACH DOCUMENT APPEARING IN THESE VOLUMES WAS PRINTED FROM AN UNEDITED COPY OF THE INVESTIGATOR'S REPORT OR FROM AN UNEDITED COPY OF A PAPER WRITTEN BY THE INVESTIGATOR. NO ATTEMPT WAS MADE TO SUMMARIZE THE INVESTIGATOR'S RESULTS. (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD-A015 187 6/18
STANFORD RESEARCH INST MENLO PARK CALIF

RADIOBIOLOGY OF LARGE ANIMALS. (U)

DESCRIPTIVE NOTE: FINAL REPT. AUG 69-JUN 75,
JUN 75 161P KREBS,JOHN S. ;JONES,DAVID C. L. ;
CONTRACT: DAHC20-70-C-0219
PROJ: SRI-PYU-8150

UNCLASSIFIED REPORT

DESCRIPTORS: *RADIOBIOLOGY, *RADIATION EFFECTS, *IONIZING RADIATION, MAMMALS, SHEEP, EXPERIMENTAL DATA, RADIATION DOSAGE, RESPONSE(BIOLOGY), LABORATORY ANIMALS, DOSE RATE, LETHALITY, HEMATOLOGY, PHYSIOLOGICAL EFFECTS, GAMMA RAYS, BONE MARROW (U)

;CONTENTS: LETHALITY IN SHEEP EXPOSED TO 60CO GAMMA RADIATION USING VARIOUS EXPOSURE PARAMETERS; HEMATOLOGICAL FINDINGS IN SHEEP EXPOSED TO LETHAL LEVELS OF 60CO GAMMA RAYS AT VARIOUS DOSE RATES AND UNDER VARIOUS CONDITIONS OF EXPOSURE; CELLULAR CHANGES IN BONE MARROW OF MICE AND SHEEP DURING AND AFTER EXPOSURE TO 60CO GAMMA RAYS; BIOLOGICAL AND MATHEMATICAL ANALYSIS OF LETHALITY IN LARGE ANIMALS EXPOSED TO IONIZING RADIATION. (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD-A015 200 6/18
ADVISORY GROUP FOR AEROSPACE RESEARCH AND DEVELOPMENT
PARIS (FRANCE)

RADIATION HAZARDS. (U)

AUG 75 155P
REPT. NO. AGARD-LS-78

UNCLASSIFIED REPORT

DESCRIPTORS: *RADIATION HAZARDS, *RADIOBIOLOGY, RADIATION EFFECTS, ELECTROMAGNETIC RADIATION, MICROWAVES, ULTRASONIC RADIATION, BIOPHYSICS, CARDIAC PACEMAKERS, HEALTH PHYSICS, PHYSICAL PROPERTIES, NATO (U)
IDENTIFIERS: MICROWAVE RADIOBIOLOGY (U)

;CONTENTS: BIOLOGIC AND PATHOPHYSIOLOGIC EFFECTS OF EXPOSURE TO MICROWAVE OR ULTRASONIC ENERGY; PATHOPHYSIOLOGICAL ASPECTS OF EXPOSURE TO MICROWAVES; PHYISCAL ASPECTS - ULTRASOUND; BIOPHYSICS - ENERGY ABSORPTION AND DISTRIBUTION; ELECTROMAGNETIC RADIATION: EFFECTS ON THE EYE; ENDOCRINE AND CENTRAL NERVOUS SYSTEM EFFECTS OF MICROWAVE EXPOSURE; MICROWAVE INDUCED ACOUSTIC EFFECTS IN MAMMALIAN AUDITORY SYSTEMS; BIOLOGICAL EFFECTS OF ULTRASOUND; ENGINEERING CONSIDERATIONS AND MEASUREMENTS; ELECTROMAGNETIC INTERFERENCE OF CARDIAC PACEMAKERS; ON EMP SAFETY HAZARDS; PROTECTION GUIDES AND STANDARDS FOR MICROWAVE EXPOSURE. (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD-A016 459 6/18
SCHOOL OF AEROSPACE MEDICINE BROOKS AFB TEX

EFFECT OF 19 MHZ RF RADIATION ON NEUROTRANSMITTERS IN MOUSE BRAIN. (U)

DESCRIPTIVE NOTE: INTERIM REPT. NOV 74-FEB 75, AUG 75 8P MERRITT,JAMES H. ;FRAZER, JAMES W. ;
REPT. NO. SAM-TR-75-28
PROJ: AF-7757
TASK: 775701

UNCLASSIFIED REPORT

DESCRIPTORS: *NEUROCHEMISTRY, *ELECTROMAGNETIC RADIATION, *RADIATION EFFECTS, *NEUROMUSCULAR TRANSMISSION, *BRAIN, RADIOBIOLOGY, HIGH FREQUENCY, CENTRAL NERVOUS SYSTEM, DOPAMINE, SEROTONIN, AMINES, MICE, EXPERIMENTAL DATA, VANILLIC ACIDS (U)
IDENTIFIERS: NOREPINEPHRINE, INDOLE ACETIC ACID/5-HYDROXY (U)

MICE WERE EXPOSED TO 19 MHZ RADIOFREQUENCY RADIATION AND THEN EUTHANIZED BY MICROWAVE-HEATING BRAIN INACTIVATION. BRAIN LEVELS OF 5-HYDROXYINDOLE ACETIC ACID (5HIAA), HOMOVANILLIC ACID (HVA), SEROTONIN (5HT), NOREPINEPHRINE (NE), AND DOPAMINE (DA) WERE NOT ALTERED BY THIS RADIATION. BRAIN CONCENTRATION OF 5HIAA, 5 HT, NE, AND DA WAS HIGHER WHEN CONTROL ANIMALS WERE EUTHANIZED BY MICROWAVE INACTIVATION THAN BY CERVICAL DISLOCATION. (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD-A015 622 6/18
NAVAL MEDICAL RESEARCH AND DEVELOPMENT COMMAND BETHESDA MD

BIBLIOGRAPHY OF REPORTED BIOLOGICAL PHENOMENA (EFFECTS) AND CLINICAL MANIFESTATIONS ATTRIBUTED TO MICROWAVE AND RADIO-FREQUENCY RADIATION. SUPPLEMENT NUMBER 6. (U)

DESCRIPTIVE NOTE: MEDICAL RESEARCH INTERIM REPT., JUN 75 21P GLASER,ZORACH R. ;
PROJ: MF12.524
TASK: MF12.524.015

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SUPPLEMENT TO AD-784 007.

DESCRIPTORS: *RADIOBIOLOGY, *RADIOFREQUENCY, *BIBLIOGRAPHIES, ELECTROMAGNETIC RADIATION, RADIATION EFFECTS, MEDICAL RESEARCH, RADIO WAVES, RADIATION HAZARDS, HUMANS (U)
IDENTIFIERS: *MICROWAVE RADIOBIOLOGY, *ELECTROMAGNETIC RADIATION HAZARDS (U)

ALMOST 250 ADDITIONAL REFERENCES ON THE BIOLOGICAL RESPONSES TO RADIO FREQUENCY AND MICROWAVE RADIATION, PUBLISHED UP TO JUNE 1975, ARE INCLUDED IN THIS BIBLIOGRAPHY OF THE WORLD LITERATURE. PARTICULAR ATTENTION HAS BEEN PAID TO THE EFFECTS OF NON-IONIZING RADIATION ON MAN AT THESE FREQUENCIES. THE CITATIONS ARE ARRANGED ALPHABETICALLY BY AUTHOR (WHERE POSSIBLE), AND CONTAIN AS MUCH INFORMATION AS POSSIBLE SO AS TO ASSURE EFFECTIVE RETRIEVAL OF THE ORIGINAL DOCUMENTS. SOVIET AND EAST EUROPEAN LITERATURE IS INCLUDED IN DETAIL. (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD-A016 801 6/18 6/15
ARMED FORCES RADIOBIOLOGY RESEARCH INST BETHESDA MD

RADIATION-RELEASED HISTAMINE IN THE RHESUS MONKEY AS MODIFIED BY MAST CELL DEPLETION AND ANTIHISTAMINE. (U)

DESCRIPTIVE NOTE: SCIENTIFIC REPT., JUN 75 14P DOYLE,T. F. ;STRIKE,T. A. ;
REPT. NO. AFRRI-SR75-18
PROJ: DNA-NWED-QAXM
TASK: C906

UNCLASSIFIED REPORT

DESCRIPTORS: *RADIOBIOLOGY, *HISTAMINE, MAST CELLS, DEPLETION, ANTIHISTAMINICS, RHESUS MONKEYS, CATABOLISM, RADIATION DOSAGE, HYPOTENSION, RESPONSE(BIOLOGY), CONCENTRATION(CHEMISTRY), BLOOD CHEMISTRY, BLOOD PRESSURE, GAMMA RAYS, NEUTRON IRRADIATION (U)
IDENTIFIERS: CHLORPHENIRAMINE (U)

CHANGES IN BLOOD HISTAMINE CONCENTRATIONS OF RHESUS MONKEYS WERE MEASURED AFTER A 4000-RAD DOSE OF MIXED GAMMA-NEUTRON RADIATION. ALL ANIMALS WERE PRETREATED WITH AMINO-GUANIDINE TO RETARD HISTAMINE CATABOLISM. HISTAMINE CONCENTRATIONS INCREASED FROM 26 + OR - 13.5 TO 235 + OR - 16 NG/ML AFTER IRRADIATION. WHEN THE ANIMALS WERE PRETREATED WITH AN ANTIHISTAMINE, CHLORPHENIRAMINE (3 MG/KG), HISTAMINE CONCENTRATIONS CHANGED FROM 25.7 + OR - 13.5 TO 462 + OR - 226 NG/ML AFTER IRRADIATION. WHEN THE MONKEYS WERE PRETREATED WITH A SPECIFIC MAST CELL HISTAMINE DEPLETER, COMPOUND 48/80 (1MG/KG PER DAY) FOR FOUR CONSECUTIVE DAYS AND THEN IRRADIATED (4000 RADS), HISTAMINE CONCENTRATIONS DID NOT CHANGE SIGNIFICANTLY. WHEN 48/80 WAS GIVEN 20 MIN AFTER IRRADIATION, HISTAMINE CONCENTRATIONS CHANGED FROM 18 + OR - 2 NG/ML TO A MAXIMUM OF 35 + OR - 9 NG/ML AFTER 48/80 INJECTION. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD-A022 462 6/18 6/16
WASHINGTON UNIV SEATTLE BIOELECTROMAGNETICS RESEARCH LAB

THE EFFECTS OF ELECTROMAGNETIC FIELDS ON THE NERVOUS SYSTEM, (U)

AUG 75 122P CHOU,CHUNG-KWANG ;GUY, ARTHUR W. ;
REPT. NO. SCIENTIFIC-6
CONTRACT: N00014-75-C-0464, NSF-GK-34730
PROJ: NR-201-054

UNCLASSIFIED REPORT

DESCRIPTORS: *NERVOUS SYSTEM, *ELECTROMAGNETIC FIELDS, *MICROWAVES, *RADIOBIOLOGY, RADIATION EFFECTS, MUSCLES, COCHLEA, EAR, GUINEA PIGS, NEUROMUSCULAR TRANSMISSION, GANGLIA, ELECTROPHYSIOLOGY, DIELECTRIC PROPERTIES, NERVE CELLS, SCIATIC NERVE, DIAPHRAGMS(ANATOMY), AUDITORY SIGNALS, TRANSIENTS, CATS, FROGS, AUDITORY NERVE, THERMAL STRESSES, RADIATION HAZARDS (U)
IDENTIFIERS: EVOKED POTENTIALS, MICROPHONICS (U)

CONTENTS: ELECTROMAGNETIC FIELD-BIOMATERIAL INTERACTION AND METHODS OF MEASUREMENT; EFFECTS OF ELECTROMAGNETIC FIELDS ON ISOLATED NERVES AND SUPERIOR CERVICAL GANGLIA: DESIGN OF WAVEGUIDE APPARATUS, AND CALCULATION OF SPECIFIC ABSORPTION RATE; EFFECTS OF ELECTROMAGNETIC FIELDS ON MUSCLE CONTRACTION; EFFECTS OF ELECTROMAGNETIC FIELDS ON AUDITORY SYSTEM: EFFECT OF NOISE MASKING ON THRESHOLD OF EVOKED AUDITORY RESPONSES, MICROWAVE-INDUCED COCHLEAR MICROPHONICS IN GUINEA PIGS. (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD-A023 094 6/18
IIT RESEARCH INST CHICAGO ILL

ELF ELECTROMAGNETIC FIELD EFFECTS ON LIFE FORMS - BIBLIOGRAPHY. (U)

DESCRIPTIVE NOTE: TECHNICAL REPT.,
APR 76 183P FORMANEK,VINCENT C. ;
REPT. NO. IITRI-E6249-TR-2
CONTRACT: N00039-73-C-0030
PROJ: IITRI-E6249

UNCLASSIFIED REPORT

DESCRIPTORS: *RADIATION EFFECTS, *ELECTROMAGNETIC FIELDS, *RADIOBIOLOGY, *EXTREMELY LOW FREQUENCY, BIBLIOGRAPHIES, ALTERNATING CURRENT, CARDIAC PACEMAKERS, BEHAVIOR, ORIENTATION(DIRECTION), MIGRATION, BIOLOGICAL RHYTHMS, METABOLISM, BIOINSTRUMENTATION, SAFETY, SENSES(PHYSIOLOGY), SLEEP, REPRODUCTION, HEALTH, GENETICS, ENZYMES (U)

DURING THE COURSE OF A STUDY, SUPPORTED BY AN IITRI PROJECT WITH THE ELECTRIC POWER RESEARCH INSTITUTE, SOME 2300 REFERENCES WERE IDENTIFIED WHICH WERE THEN REDUCED TO SOME 800 CITATIONS. WITH THAT AS A STARTING POINT, THIS BIBLIOGRAPHY HAS BEEN PREPARED TO AID IN THE ASSESSMENT OF EXTREMELY LOW FREQUENCY BIOLOGICAL RESEARCH. THIS BIBLIOGRAPHY EMPHASIZES THE FOLLOWING AREAS: (1) AC ELECTRIC AND MAGNETIC FIELDS, BIOLOGICAL EFFECTS BETWEEN 45-75 HERTZ; (2) AC ELECTRIC AND MAGNETIC FIELDS, ALPHA-RHYTHM INTERACTIONS BETWEEN 1-15 HERTZ; (3) AC ELECTRIC AND MAGNETIC FIELD INFLUENCES ON PATIENTS WITH CARDIAC PACEMAKERS; (4) BEHAVIORAL INFLUENCES: (A) MIGRATION (B) ORIENTATION (C) SENSING-DETECTION. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD-A023 119 6/18
ARMED FORCES RADIOBIOLOGY RESEARCH INST BETHESDA MD

ANNUAL RESEARCH REPORT 1 JULY 1974-30 JUNE 1975. (U)

JUN 75 104P
REPT. NO. AFRRI-ARR-9

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO REPORT DATED 30 JUN 74, AD-A009 327.

DESCRIPTORS: *RADIOBIOLOGY, *MEDICAL RESEARCH, SCIENTIFIC RESEARCH, RADIATION DOSAGE, RADIATION EFFECTS, IMMUNOLOGY, BEHAVIOR, BIOCHEMISTRY, PHARMACOLOGY, TOXICOLOGY, PATHOLOGY, PHYSIOLOGY, NEOPLASMS, NEUROLOGY (U)
IDENTIFIERS: RADIOPHARMACEUTICAL AGENTS (U)

;CONTENTS: MITIGATION OF GRAFT VERSUS HOST DISEASE IN LETHALLY IRRADIATED MICE GRAFTED WITH SPLEEN CELLS ADHERENT TO GLASS BEADS; STUDIES ON THE DISTRIBUTION AND METABOLISM OF CYCLOTRIMETHYLENE-TRINITRAMINE IN THE RAT AND IN THE MINIATURE SWINE; SERUM PROTEIN-BOUND CARBOHYDRATES AND NEUROGENIC TUMORS; A METHOD OF LOCALIZATION FOR RADIONUCLIDE BONE IMAGING IN THE MANDIBLE; ACUTE RADIATION SICKNESS--THE PRODROMAL SYNDROME. AN ANNOTATED BIBLIOGRAPHY; THE EFFECT OF A SIMULATED SUBARACHNOID HEMORRHAGE ON CEREBRAL BLOOD FLOW IN THE MONKEY; KINEMATICS OF KNEE MOTION DURING A SIMULATED CAR CRASH; IMMUNOENHANCEMENT AND NEURAL ONCOGENESIS; DEPRESSION OF DOPAMINE RELEASE DURING THE ETHANOL WITHDRAWAL SYNDROME; NONEXCHANGEABLE WATER IN RAT SKELETAL MUSCLE; MONKEY BRAIN DAMAGE FROM RADIATION IN THE THERAPEUTIC RANGE. (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD-A027 061 6/6
NAVAL ELECTRONIC SYSTEMS COMMAND WASHINGTON D C

NAVY SPONSORED ELF BIOLOGICAL AND ECOLOGICAL RESEARCH SUMMARY (UPDATE). (U)

MAY 76 73P

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SUPERSEDES AD-A015 299.

DESCRIPTORS: *ELECTROMAGNETIC RADIATION, *RADIOBIOLOGY, *ECOLOGY, RADIATION EFFECTS, EXTREMELY LOW FREQUENCY, RADIATION DOSAGE, HUMANS, ANIMALS, PLANTS(BOTANY), MICROORGANISMS, BOOKS, GENETICS, PERFORMANCE(HUMAN), DIURNAL VARIATIONS, PHYSIOLOGY (U)
IDENTIFIERS: *RADIOECOLOGY (U)

ELF IS THE NAVY'S EXTREMELY LOW FREQUENCY SUBMARINE COMMUNICATIONS SYSTEM. THE PROJECT IS CURRENTLY IN THE RESEARCH AND DEVELOPMENT STAGE. THIS BOOKLET (A) SUMMARIZES THE PROGRESS OF NAVY SPONSORED BIOLOGICAL/ECOLOGICAL RESEARCH STUDIES INITIATED TO DETERMINE THE EFFECTS OF ELECTROMAGNETIC FIELDS IN THE ELF RANGE, AND (B) LISTS THE PUBLICATIONS OF EACH PRINCIPAL INVESTIGATOR. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD-A035 844 6/18 6/5
ADVISORY GROUP FOR AEROSPACE RESEARCH AND DEVELOPMENT
PARIS (FRANCE)

BIOPHYSICAL PROBLEMS IN AEROSPACE MEDICINE
(PROBLEMS BIOPHYSIQUES PARTICULIERS DE LA
MEDECINE AEROSPATIALE). (U)

DESCRIPTIVE NOTE: ADVISORY REPT.
DEC 76 164P
REPT. NO. AGARD-AR-84

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: TEXT IN ENGLISH AND FRENCH. NATO
FURNISHED.

DESCRIPTORS: *AEROSPACE MEDICINE, *RADIOBIOLOGY,
ELECTROMAGNETIC RADIATION, LASER HAZARDS,
RADIATION EFFECTS, MILITARY PERSONNEL, COSMIC
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AGARD (U)

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THE FIVE PAPERS ARE AS FOLLOWS: COSMIC
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BIOLOGICAL STUDIES OF COSMIC RAYS;
RADIOBIOLOGICAL PROBLEMS OF HIGH ALTITUDE
FLIGHTS; NON-IONISING ELECTROMAGNETIC
FIELDS, ENVIRONMENTAL FACTORS IN RELATION TO
MILITARY PERSONNEL; AND MEDICAL ASPECTS OF
LASERS AND LASER SAFETY PROBLEMS.
(AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

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ARMED FORCES RADIOBIOLOGY RESEARCH INST BETHESDA MD

ANNUAL RESEARCH REPORT 1 JULY 1975 -- 30 SEPTEMBER 1976. (U)

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THIS REPORT CONTAINS A SUMMARY OF THE RESEARCH PROJECTS OF THE ARMED FORCES RADIOBIOLOGY RESEARCH INSTITUTE FOR THE PERIOD 1 JULY 1975 TO 30 SEPTEMBER 1976. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD-A043 706 6/18
NAVAL AEROSPACE MEDICAL RESEARCH LAB PENSACOLA FLA

OPERANT BEHAVIOR AND COLONIC TEMPERATURE OF SQUIRREL MONKEYS (SAIMIRI SCIUREUS) DURING MICROWAVE IRRADIATION. (U)

DESCRIPTIVE NOTE: INTERIM REPT.,
JUN 77 33P DE LORGE,JOHN ;
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UNCLASSIFIED REPORT

DESCRIPTORS: *MICROWAVES, *RADIOBIOLOGY, *SQUIRREL MONKEYS, *RADIATION EFFECTS, BODY TEMPERATURE, BEHAVIOR (U)
IDENTIFIERS: RADIATION EFFECTS(BIOLOGY), PE62758N, WU0037 (U)

CONTEMPORARY REPORTS IN THE SCIENTIFIC AND POPULAR PRESS OF POTENTIALLY HAZARDOUS EFFECTS OF EXPOSURE TO MICROWAVES REQUIRE SUBSTANTIATION BECAUSE SOME NAVY PERSONNEL CONTACT A VARIETY OF MICROWAVE DEVICES IN COMMUNICATION, WARNING AND WEAPONS SYSTEMS. SUCH PUTATIVE EFFECTS PRECLUDE THE USE OF MAN AS A SUBJECT; HENCE, A SERIES OF EXPERIMENTS WITH OTHER PRIMATES, MONKEYS, HAS BEEN INITIATED. RESEARCH IN OUR LABORATORY HAS ESTABLISHED THAT MICROWAVE IRRADIATION GREATER THAN 62 MW/SQ CM DISRUPTS BEHAVIOR IN RHESUS MONKEYS. IN AN EFFORT TO EXTEND THE GENERALITY OF THIS FINDING, SQUIRREL MONKEYS ARE EXPOSED TO MICROWAVES. THE BEHAVIOR OF SQUIRREL MONKEYS ON A VIGILANCE TASK WAS DISRUPTED BY 30- OR 60-MINUTE EXPOSURES TO 50 MW/SQ CM AND HIGHER POWER DENSITIES. THIS DISRUPTION INCREASED WITH THE INCREASE IN POWER DENSITY. UNDER BOTH DURATIONS OF EXPOSURE, BEHAVIOR WAS NOT CONSISTENTLY PERTURBED UNTIL COLONIC TEMPERATURE CHANGES EXCEEDED 1 C. COLONIC TEMPERATURES REGULARLY INCREASED BEGINNING AT 10 MW/SQ CM AND WERE RELATED IN A NONLINEAR FASHION TO THE POWER DENSITY WITH A MARKED ACCELERATION BETWEEN 40 AND 50 MW/SQ CM. (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M07

AD-B000 673 6/18 13/12
ARMY ENVIRONMENTAL HYGIENE AGENCY ABERDEEN PROVING GROUND MD

INFRARED HEAT LAMPS USED IN DRYING CHEMICAL SAMPLES, SEPTEMBER-OCTOBER 1974. (U)

DESCRIPTIVE NOTE: RADIATION PROTECTION SPECIAL STUDY, OCT 74 10P SLINEY,DAVID H. ;FRANKS, JAMES K. ;CREWS,DARIUS ;
REPT. NO. USAEHA-42-043-75

UNCLASSIFIED REPORT

DESCRIPTORS: (*EYE, RADIATION PROTECTION), (*RADIOBIOLOGY, INFRARED RADIATION), (*RADIATION HAZARDS, *INFRARED LAMPS), (*SAFETY EQUIPMENT, EYEGLASSES), DRYING APPARATUS, RADIATION INJURIES, SAFETY, REFLECTIVITY, DOSIMETERS, HEATING, DOSE RATE, HEAT TOLERANCE, RADIATION TOLERANCE, HEAT FLUX, RADIATION DOSAGE, PROTECTIVE EQUIPMENT (U)
IDENTIFIERS: *EYE SAFETY (U)

A SPECIAL STUDY OF THE INFRARED HEAT LAMPS USED IN THE RADIOLOGICAL AND BIOLOGICAL CHEMISTRY DIVISION OF THE US ARMY ENVIRONMENTAL HYGIENE AGENCY TO DRY SAMPLES WAS CONDUCTED DURING THE PERIOD SEPTEMBER-OCTOBER 1974. IT WAS CONCLUDED THAT A PERSONNEL HAZARD FROM INFRARED RADIATION DID NOT EXIST; HOWEVER, CONTINUOUS VIEWING OF THE LIGHT REFLECTED FROM THE PLANCHETTE EXCEEDS CURRENT RECOMMENDED LIMITS. (AUTHOR) (U)

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SOME EFFECTS OF NEODYMIUM LASER RADIATION UPON THE HEADS OF DOGS.
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