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

RESEARCH REPORT

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

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ABSTRACT

More than 2000 references on the biological responses to radio frequency and microwave radiation, published up to June 1971, are included in the bibliography.* Particular attention has been paid to the effects on man of 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. An outline of the effects which have been attributed to radio frequency and microwave radiation is also part of the report.

*Three supplementary listings bring the number of citations to more than 2300.

Key Words

Biological Effects
Non-Ionizing Radiation
Radar Hazards
Radio Frequency Radiation
Microwave Radiation
Health Hazards
Bibliography
Electromagnetic Radiation Injury

The comments upon and criticisms of the literature made in this report, and the recommendations and inferences suggested, are those of the author, and do not necessarily reflect the views of the Navy Department or of the Naval Service.
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Medical research interim report, bibliographic (Current to April 1972)

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Revised 20 April 1972
(4 October 1971, Original)

MF12.524.015-0004B, Report No. 2, Revised

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 of 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#734391) is updated with the inclusion of three supplementary listings, and has incorporated many corrections and additions to the original 2100 citations.
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Foreword

It is the hope of the author that this bibliography will provide guidance to the diffuse and conflicting literature on the biological responses to electromagnetic radiation at radio- and microwave-frequencies, with particular reference to the effects of concern to man. Such guidance is needed in the formulation and appraisal of criteria and limits of human exposure to "non-ionizing" radiation, and in the planning and conduct of future research.

The original plans were to categorize and key the literature citations to the "outline of biological and clinical effects" (Chapter 1). This proved to be a much more difficult and time-consuming task than anticipated, and was actually completed only for about 400 papers. Thus, the letter-number combinations given in square brackets for some of the "A" through "C" citations refer to the outline. [NV] indicates the citation was "not verified".

The standard format used throughout the bibliography is: author, (date), journal, volume, (issue): page, "title". The authors are alphabetized, and in chronological order. Multiple authors are also alphabetically ordered according to the second, third, etc., author. Inclusive pagination is given where possible, as is the original language of the citation. Report accession and translation numbers (some of which are cited in Appendix A), and alternate sources are listed when known. The title of books is underlined. When the title of the report was not available (or not given), a short (one line) description of the paper is listed whenever possible. Reports in which the name of the author was not given are listed chronologically using the format, "title", reference, source, (date). In many cases the citation was obtained from secondary (and tertiary) sources. For this reason it was impossible to put every citation into a consistent format.

In a few cases, papers have been cited which were presented at symposia or meetings devoted to the present topic, even when the report title suggests that it does not pertain directly to the topic. This has been done to show the wide range of items considered relevant (at least at the time of the meeting, and by the organizing chairman) in past years. An example is "electroanesthesia".

A few citations of marginal and/or peripheral relationship have also been included so that the reader may judge the applicability to his individual research needs. Examples are reports dealing with the biological effects of static and alternating magnetic fields, experimental techniques using radio frequency and microwave radiation (e.g., electron spin resonance, and nuclear magnetic resonance spectroscopy), and microwave exposure limits, regulations, and standards.

References for a few limited-distribution government reports are available upon request.
The author welcomes information which will correct errors and omissions (both of which no doubt exist). Copies of new papers would be greatly appreciated, and would encourage updating and revising the bibliography periodically.

ACKNOWLEDGMENTS

The assistance and support received during the preparation of this bibliography have been considerable, and I am happy to acknowledge my indebtedness and gratitude. Drs. John Keesey and Dennis Heffner, former and present Heads of the Biophysics Division, and Dr. Seymour Friess, Director of the Environmental Biosciences Department of the Naval Medical Research Institute, permitted me the opportunity to work on the bibliography, and offered frequent encouragement.

Acknowledgment is also due to many friends and associates for their helpful suggestions, comments, and loans and/or gifts of reports or other material, which have been invaluable in the course of the work. Mr. Glenn Heimer of the Naval Ship Engineering Center contributed an extensive collection of government reports and documents, many of which had not previously been cited in the open literature.

Special help in tracing and in the acquisition of relevant papers has been received from the librarians and staff members of the NMRI library: Mrs. Thelma Robinson, Mrs. Ernestine Gentleman, Mrs. Eleanor Capps, and Miss Deborah Grove. Their diligence and resourcefulness in tracing and obtaining copies of a large number of papers and reports, often in spite of incomplete and/or inaccurate citations given in other sources, enabled me to include many relevant items in the bibliography.

Mr. Christopher Dodge of the Scientific and Technical Center, Department of the Navy, provided much of the Soviet Bloc literature, linguistic and other technical assistance, and in addition offered valuable comments and encouragement throughout the preparation of this report. Especially noteworthy were the corrections and improvements suggested by Chris following his reading of the entire manuscript.

Helpful also in locating some of the Soviet literature was Mr. E. S. Serebrennikov, of the Science and Technology Division, The Library of Congress.

Credit is due Mrs. Anna Woke (of this Institute) for translating many of the German papers; to Dr. Emilio Weiss, who translated from the Italian, and to Mrs. Edith Pugh who typed many "first drafts"; also to Mrs. Rhoda Glaser for her help in many aspects of the work.

Mrs. Fannie Epstein deserves special mention for her outstanding editorial assistance, and especially for the heroic typing, organization, and checking of the entire report.
The outline of reported biological phenomena ('effects') and clinical manifestations attributed to microwave and radio-frequency radiation, is patterned after that given by R. Murray, et al., in an article entitled, "How safe are microwaves", which appeared in Non-Ionizing Radiation 1(1):7-8 (1969). Some of the "effects" were listed in the report by S. F. Cleary and W. T. Ham, Jr., entitled, "Considerations in the evaluation of the biological effects on exposure to microwave radiation". (Background document, Part I, 1969, for the Task Force on Research Planning in Environmental Health, Subtask Force on Physical Factors in the Environment). The discussion and suggestions offered by Byron McLees, Edward Finch, Lewis Gershman, and Christopher Dodge relating to the Outline are also gratefully acknowledged.

Preparation of the bibliography was supported by the Bureau of Medicine and Surgery, Department of the Navy, under work unit MF12.524. 015-00948.
CHAPTER I

Reported Biologic Phenomena (*Effects*) and Some Clinical Manifestations Attributed to Microwave and Radio-Frequency Radiation (See Note)

A. Heating of Organs (Applications: Diathermy, Electrosurgery, Electrocoagulation, Electrodeseication, Electrotomy)

1. Whole Body (temperature regulation defects); Hyperpyrexia
2. Skin
3. Bone and Bone Marrow
4. (a) Lens of Eye (cataractous lesions - due to the avascular nature of the lens which prevents adequate heat dissipation.1
   (b) Corneal damage also possible at extremely high frequencies.
5. Genitalia (tubular degeneration of testicles)
6. Brain
7. Sinuses
8. Metal Implants (burns near hip pins, etc.)
   The effects are generally reversible except for 4a.

B. Changes in Physiologic Function

1. Striated Muscle Contraction
2. Alteration of Diameter of Blood Vessels (increased vascular elasticity), Dilation
3. Changes in the Oxidative Processes in Tissues and Organs
4. Liver Inlargement
5. Altered Sensitivity to Drug Stimuli
6. Decreased Spermatogenesis (decreased fertility, to sterility)
7. Altered Sex Ratio of Births (more girls!)
8. Altered Menstrual Activity
9. Altered Fetal Development
10. Decreased Lactation in Nursing Mothers
11. Reduction in Ureter (Ca²⁺ excretion; via urine output)
12. Altered Renal Function (decreased filtration in tubules)
13. Changes in Conditioned Reflexes
14. Increased Electrical Resistance of Skin
15. Changes in the Structure of Skin Receptors of the (a) afferent, and (b) blood-Carrying Systems
16. Altered Blood Flow Rate

* It is also reported that low levels of irradiation produce a cooling effect - "hypercompensation".

Note: These effects are listed without comment or endorsement since the literature abounds with conflicting reports. In some cases the basis for reporting an "effect" was a single or a non-statistical observation which may have been drawn from a poorly conceived (and poorly executed) experiment.
17. Alterations in the Biocurrents (EEG?) of the Cerebral Cortex (in animals)
18. Changes in the Rate of Clearance of Tagged Ions from Tissue
19. Reversible Structural Changes in the Cerebral Cortex and the Diencephalon
20. Electrocardiographic (EKG) Changes
21. Alterations in Sensitivity to Light, Sound, and Olfactory Stimuli
22. Functional (a) and Pathological (b) Changes in the Eyes: (a) decrease in size of blind spot, altered color recognition, changes in intraocular pressure, lacrimation, trembling of eyelids; (b) lens opacity and coagulation, altered tissue respiration, and altered reduction-oxidation processes
23. Myocardial Necrosis
24. Hemorrhage in Lungs, Liver, Gut, and Brain \} At Fatal Levels
25. Generalized Degeneration of all Body Tissue \} of Radiation
26. Loss of Anatomical Parts
27. Death
28. Dehydration
29. Altered Rate of Calcification of Certain Tissue

C. Central Nervous System Effects

1. Headaches
2. Insomnia
3. Restlessness (Awake and During Sleep)
4. Electroencephalographic (EEG) Changes
5. Cranial Nerve Disorders
6. Pyramidal Tract Lesions
7. Conditioned Reflex Disorders
8. Vagomimetic Action of the Heart; Sympaticomimetic Action
9. Seizures, Convulsions

D. Autonomic Nervous System Effects

1. Neuro-vegetative Disorders (e.g., alteration of heart rhythm)
2. Fatigue
3. Structural Alterations in the Synapses of the Vagus Nerve
4. Stimulation of Parasympathetic Nervous System (Bradycardia), and Inhibition of the Sympathetic Nervous System

E. Peripheral Nervous System Effects

Effects on Locomotor Nerves
F. Psychological Disorders ("Human Behavioral Studies") - the so-called "Psychophysiologic (and Psychosomatic) Responses"

1. Neurasthenia - (general "bad" feeling)
2. Depression
3. Impotence
4. Anxiety
5. Lack of Concentration
6. Hypochondria
7. Dizziness
8. Hallucinations
9. Sleepiness
10. Increased Irritability
11. Decreased Appetite
12. Loss of Memory
13. Scalp Sensations
14. Increased Fatiability
15. Tremor of the Hands

G. Behavioral Changes (Animal Studies)

Reflexive, Operant, Avoidance, and Discrimination Behaviors

H. Blood Disorders

\( (V = \text{in vivo}) \)
\( (V = \text{in vitro}) \)

Changes in:

1. Blood and Bone Marrow
2. Phagocytes (polymorphs) and Bactericidal functions of blood cells
3. Hemolysis rate (increase), (a shortened lifespan of cells)
4. Sedimentation rate (increase), (due to changes in serum levels or amount of fibrinogen)
5. Number of Erythrocytes (Decrease), also number of Lympocytes
6. Blood Glucose Concentration (increase)
7. Blood Histamine Content
8. Cholesterol and Lipids
9. Gamma (also u and f) Globulin, and Total Protein Concentration
10. Number of Eosinophils
11. Albumin/Globulin Ratio (decrease)
12. Hemopoiesis (rate of formation of blood corpuscles)

13. Leukopenia (increase in number of white cells), and Leukocytosis
14. Peticulocytosis

I. Vascular Disorders

1. Thrombosis
2. Hypertension
J. Enzyme and Other Biochemical Changes

Changes in activity of:
1. Cholinesterase (V,v)
2. Phosphatase (v)
3. Transaminase (v)
4. Amylase (v)
5. Carboxydismutase
6. Protein Denaturation
7. Toxin, Fungus, and Virus Inactivation (at high radiation dose levels), Bacteriostatic Effect
8. Tissue Cultures Killed
9. Alteration in Rate of Cell Division
10. Increased Concentration of RNA in Lymphocytes, and Decreased Concentration in Brain, Liver, and Spleen
11. Changes in Pyruvic Acid, Lactic Acid, and Creatinine Excretions
12. Change in Concentration of Glycogen in Liver (Hyperglycemia)
13. Alteration in Concentration of 17-Ketosteroids in Urine

K. Metabolic Disorders

1. Glycosuria (sugar in urine; related with blood sugar?)
2. Increase in Urinary Phenol (derivatives? DOPA?)
3. Alteration of Rate of Metabolic Enzymatic Processes
4. Altered Carbohydrate Metabolism

L. Gastro-Intestinal Disorders

1. Anorexia (loss of appetite)
2. Epigastric Pain
3. Constipation
4. Altered Secretion of Stomach "Digestive Juices"

M. Endocrine Gland Changes

1. Altered Pituitary Function
2. Hyperthyroidism
3. Thyroid Enlargement
4. Increased Uptake of Radioactive Iodine by Thyroid Gland
5. Altered Adrenal Cortex Activity
6. Decreased Corticosteroids in Blood
7. Decreased Glucocorticoidal Activity
8. Hypogonadism (usually decreased testosterone production)

N. Histological Changes

1. Changes in Tubular Epithelium of Testicles
2. Gross Changes
O. Genetic and Chromosomal Changes

1. Chromosome Aberrations (e.g., linear shortening, pseudochiasm, diploid structures, amitotic division, bridging, "sticky" chromosomes, irregularities in chromosomal envelope)
2. Mutations
3. Mongolism
4. Somatic Alterations (changes in cell not involving nucleus or chromosomes, cellular transformation)
5. Neoplastic Diseases (e.g., tumors)

P. Pearl Chain Effect (Intracellular orientation of subcellular particles, and orientation of cellular and other (non-biologic) particles)

Also, orientation of animals, birds, and fish in electromagnetic fields

Q. Miscellaneous Effects

1. Sparking between dental fillings
2. Peculiar metallic taste in mouth
3. Changes in Optical Activity of Colloidal Solutions
4. Treatment for Syphilis, Poliomyelitis, Skin Diseases
5. Loss of Hair
6. Brittneness of Hair
7. Sensations of Buzzing Vibrations, Pulsations, and Tickling About the Head and Ears
8. Copious Perspiration, Salivation, and Protrusion of Tongue
9. Changes in the Operation of Implanted Cardiac Pacemakers
10. Changes in Circadian Rhythms


17. ALBRECHT, W. (1954) Dissertation, Moscow, "The Influence of Microwave Energy upon the Eyes of Selected Animals" (B16)


21. ANDRIASHEVA, V. P., & IL'YASHEVICH, M. I. (1936) Bulletin Gongdaravetsnego Tsentral'noago Instituta Sechenova (Bull. of the State Central Institute of Sechenova) 4(4-5), "The effects of the action of short waves on the morphology and the physical and chemical behavior of the blood of the rabbit"

22. ANDRIASHEVA, V. P., & IL'YASHEVICH, M. I. (1936) Bulletin Gongdaravetsnego Tsentral'noago Instituta Sechenova (Bull. of the State Central Institute of Sechenova) 4(4-5), "The effects of the action of short waves on the morphology and the physical and chemical behavior of the blood of the rabbit"

23. ANDRIASHEVA, V. P., & IL'YASHEVICH, M. I. (1936) Bulletin Gongdaravetsnego Tsentral'noago Instituta Sechenova (Bull. of the State Central Institute of Sechenova) 4(4-5), "The effects of the action of short waves on the morphology and the physical and chemical behavior of the blood of the rabbit"

24. ANDRIASHEVA, V. P., & IL'YASHEVICH, M. I. (1936) Bulletin Gongdaravetsnego Tsentral'noago Instituta Sechenova (Bull. of the State Central Institute of Sechenova) 4(4-5), "The effects of the action of short waves on the morphology and the physical and chemical behavior of the blood of the rabbit"

25. ANDRIASHEVA, V. P., & IL'YASHEVICH, M. I. (1936) Bulletin Gongdaravetsnego Tsentral'noago Instituta Sechenova (Bull. of the State Central Institute of Sechenova) 4(4-5), "The effects of the action of short waves on the morphology and the physical and chemical behavior of the blood of the rabbit"

27. ANTIPOV, G. S. (1964) Voprosy Kurortologii, Fizioterapii, i Lechebnogo Fizicheskoy Kol'tury (Problems in Health Resort Science, Physiotherapy and Medical Physical Culture) Moscow, pgs (5):153-158. (VII 29.3046), "Combined treatment of purulent skin diseases with ultra-high frequency electric field and staphylococcal anti-phagocytic electrophoresis" [82, B10, 392, 313, 314, J6, 314].


34. AUDIN, C. N., & HORVATH, S. M. (1954) Amer. J. of Physical Med. 33:143-149, "Production of convulsions at rates by high frequency electrical currents" [60, 9, 6].

35. BAKH, V. V., & RAKOV, A. N. (1964) Shorokh Voprosy Experimental'nye Fizioterapii (Taskhent) 10(9):55, "Influence of various dosages of electrical fields of UHF on the isolated rabbit's heart" [B20, 31] (NY).


45. BACH, A. (1935) Arch. of Physiological War 14:645-650, "A selective heart production by ultrashort (Grazzian) waves" [41, A2, A3].

46. BADENHORN, A. W. (1945) British Medical J. 2:460-463, "Decrease of the tension in relation to temperature" [A].


61. BASKETT, H. L. (1962) Institute of Radio Engineers Trans. on Biomedical Engineering 3(4):517-532 (623-636 Eng. Trans.), "Electroencephalographic and morphological investigation on the influence of microwaves on the central nervous system"

62. BASKETT, H. L. (1962) Institute of Radio Engineers Trans. on Instrumentation 1-2:257-, "Microwave power measurements"


66. BAXWRRYT, J. C., JR. (1964) Nava. Med. 26:442-452, "The regulation of body temperature during the interference of body temperature during the influence of a UHF-UHF field" [AD 063851, AD 140106]


70. BEHRSCH, I. T., & BARAFF, A. A. (1959) Proc. 3rd Tri-service Conf. on Biological Effects of Microwave Radiating Equipment (Sosakin, C., ed.) 2:257-333, "Biological effect of microwave radiation with limited body heating"

71. BEHRSCH, I. T., & BARAFF, A. A. (1959) Proc. 2nd Tri-service Conf. on Biological Effects of Microwave Radiating Equipment (Sosakin, C., ed.) 2:119-131, "Biological effect of microwave radiation with limited body heating"

72. BEHRSCH, I. T., & BARAFF, A. A. (1959) Proc. 3rd Tri-service Conf. on Biological Effects of Microwave Radiating Equipment (Sosakin, C., ed.) 2:257-333, "Biological effect of microwave radiation with limited body heating"

73. BEHRSCH, I. T., & BARAFF, A. A. (1959) Proc. 2nd Tri-service Conf. on Biological Effects of Microwave Radiating Equipment (Sosakin, C., ed.) 2:119-131, "Biological effect of microwave radiation with limited body heating"


81. BEISCHER, D. E., & KEMPSON, J. C., Jr. (1966) Naval Aerospace Medical Institute (and NASA) Rpt NAI-972, "The electroencephalogram of the squirrel monkey (Galago senegalensis) in a very high magnetic field"


83. BEISCHER, D. E., MILLER, E. F., II, & KEMPSON, J. C., Jr. (1967) Naval Aerospace Medical Institute (and NASA) Rpt No. 1018, AD 662672, "Exposure of man to low intensity magnetic fields in a coil system"

84. BEJNURI, M. V. (1941) Fiziologouschsky Zh. SSSR 30(2):173+, "The effect of ultrashort waves on the reflex excitability of frogs"

85. BERNER, D. B., & MACHADOVIK, H. R. (1948) In: Biological and Therapeutic Effect of a Magnetic Field and Strictly Periodic Vibrations, pp. 93, "The effect of a magnetic field on some processes in mice"


87. BELITSKII, B. M., & KORKE, K. G. (1959) In: Reports on Medical Electro-Magnetics, Moscow, (Title not given)


92. BELOVA, S. F. (1959) In: Physical Factors of the External Environment, Moscow, pp. 18-, "The state of the visual organ in persons exposed to superhigh frequency fields"


95. BELOVA, S. F. (1964) Trudy Vili Gigny Trudi i Pravzaboloshini USSR, (2):119-121, "Results of sight organ examination in workers associated with RF-IF generators (150-500KC)"

96. BELOVA, S. F. (1964) Trudy Vili Gigny Trudi i Pravzaboloshini USSR, (2):140-143, "Functional state of the visual analyzer under the action of microwaves"


104. BERNHARD, H. L. (1951) AMA Arch. of Ophthalmology, Annual Reviews, 45(2):194-213, "Cornea and sclera"

105. BERNHARD, H. L. (1951) AMA Arch. of Ophthalmology, Annual Reviews, 45(2):194-213, "Cornea and sclera"


144. Brandt, A. A. (1963) Goosnderasvemos Isdalt'istro Fiziko-Matematische Literatury, Moscow, Research on Dielectrics at Superhigh Frequencies


156. Bryant, R. M. (1964) Science 143(3638):897-899, "Antegrade amnesia: effects of handling and microwave radiation"


S167. wve 229-234; (Part III) ibid. 27:72-76 (1970). "Effect of micitowve at I-band on 
mental influence scattered electromagnetic fields"

CARLETON, 185. skin


CAPPEULI, 178. CAFFARATTO, T.

learning task"

BYCOW, 172. magnetic waves, in the SFr range on

chemical blood indices under the action of centimeter 


SNF-F Electromagnetic Field Research Center. Moscow, "Sanitary hygienic 


BUDKOV, M. S. (1959) In: Summaries of reports, Labor Hygiene and the Biological Effect of Radio Frequency Electromagnetic Waves; pages: only, "Electrophysiological characteristic of the biological effect of microwave electromagnetic fields of various parameters"


BUDKOV, M. S. (1967) In: Abstracts of reports of the All Union Conference on Neurophysiodynamics, Rostov-on-Don, pp. 17-18, "Neurophysiological characteristics of the specific effects of radiowaves in the SHF-UHF range"


CAFFARATTO, T. M. (1946) La Cinecolgia 12(9):237-249, "Leukocytosis vagat irices following shortwave therapy"

CALDERON, A. P. (1953) Ohio State Univ. Research Foundation, Pt 478-18, (AD 19536), "The computation of radiation and scattered electromagnetic fields"


CARD, R. R. (1957) Trans. of the National Safety Congress 8:6-12, "The hazard of radio transmitters and their correction"


188. CARPENTER, R. L. (1958) Proc. 2nd Tri-service Conf. on Biological Effects of Microwave Energy (Pattishall, E. G., & Langhans, J. U., eds.) 2:164-168, "Review of the work conducted at Tufts Univ. (USAF sponsored); experimental radiation cataracts induced by microwave radiation"


190. CARPENTER, R. L. (1959) Proc. 3rd Tri-service Conf. on the Biological Effects of Microwave Radiating Equipments (Suskind, G., ed.) 2:279-290 (RADC-Tr-59140, AD 234788), "Studies on the effects of 2450 megacycle radiation on the eye of the rabbit"


192. CARPENTER, R. L. (1965) Digest of 5th Internat. Conf. on Medical Electronics and Biological Engineering, pp. 573-574, "Suppression of differentiation in living tissues exposed to microwave radiation"


194. CARPENTER, R. L. (Cam.) (1971) "Microwave" session of the Internat. Conf. on Non-Ionizing Radiation Safety, 29-31 Mar., Cincinnati, Ohio, sponsored by Medical Center of U. of Cincinnati


269. CUTTEN, R. S. (1958) (compiler) National Library of Medicine, Washington, D. C., (unpublished report), "Biological effects of non-ionizing radiation on humans and higher animals; selected references in English 1916-1957"


272. DAILY, L. E., JR., A. B. (1943) U. S. Army Medical Bulletin 41:1052-1056, "A clinical study of the results of exposure of laboratory personnel to radar and high frequency radio"


278. DAVIS, T. P. (1958) Proc. 3rd Tri-service Conf. on Biological Effects of Microwave Energy (Fattahall, E. G., & Banghart, F. W., eds.), 2:19-32, "Discussion of long range research and development plans in the Air Force"


280. DAVIS. H. (1958) Proc. 3rd Tri-service Conf. on Biological Effects of Microwave Energy (Fattahall, E. G., & Banghart, F. W., eds.) 2:105-111, "Human engineering applications as related to personnel protection"


282. DEBROUS, A. (1958) Proc. 2nd Tri-service Conf. on Biological Effects of Microwave Energy (Fattahall, E. G., & Banghart, F. W., eds.) 2:105-111, "Human engineering applications as related to personnel protection"


284. DEICHMANN, W. B. (1959) Proc. 3rd Tri-service Conf. on Biological Effects of Microwave Radiating Equipments (Suskind, C., ed.) 3:72-74, "Results of (pathological) studies of microwave radiation"

285. DEICHMANN, W. B. (1961) Biochemical Pharmacology 2(12):1, "Introducing the irradiation cycle rate in microwave radiation exposures"

286. DEICHMANN, W. B. (1966) Arch. of Toxicology 23:24-35, "Biological effects of microwave radiation of 24,000 megacycles"

287. DEICHMANN, W. B., & BERNAL, E. (1963) Univ. of Miami, (AD 400345), "Chronic exposure of dogs to microwave radiation of 24,000 megacycles and a power density of 20 mw/sq cm"


299. DEICHMAN, W. B., & STEPHENS, P. H., JR. (1961) Industrial Med. & Surgery 30:221 only, "Microwave radiation of 10 mw/cm² and factors that influence biological effects at various power densities"


(PAPP, G. H., BRAUER, B., & FINNERTY, D. E.)


307. DE LOZ, A. (1951) Le Scalpel 10(21):591-598, (In French) "Influence of high frequency radiowaves on hypercholesterinemia"


310. DENIER, C. (1933) Arch. of Electron. in Medicine 43:273-276, (In French) "Biological action of high frequency ultrashort radio waves of 80 cm"


313. DINKLON, H. (1966) "Health damage caused by microwaves, especially radar waves"


[See Also citation numbers 1931 and 1932, this Bibliography]


328. DROGICINA, E. A., & SADCHIKOVA, M. A. (1965) Gigiena Truda i Professional'nye Zabolevaniya (Labor Hygiene and Occupational Diseases) 2(1):17-21, (JPRS #29609, TT-41-30791), "Clinical syndromes arising under the effect of various radio frequency bands"


331. DROGICINA, E. A., SADCHIKOVA, M. A., SIMEONOV, G. V., KONCHALOVSAYA, T. M., & GLOTTOVA, V. V. (1965) Gigiena Truda i Professional'nye Zabolevaniya 10(7):13-17, (JPRS 38663, LT-144-12, AD 644630), "The problem of autonomic (vegetative) and cardiovascular disorders during the action of SHF electromagnetic fields"

332. DROGICINA, E. A., & GINZBURG, V. V. (1965) Biophysics 11:724-731, (In English), "Clinical syndromes arising under the effect of various radio frequency bands"


349. EISENBAUER, M. (1954) Annual Progress Report to the Commission on Environmental Hygiene of the Armed Forces Epidemiological Board, (AD 310471), "Exposure of radar workers to microwaves"
373. FAITEL'BERG-BLANK, V. R. (1965) Patologicheskii Fiziolohia i Ekperimental'nya Terapiia (Novkv) 9(4):90 only, (In Russian): “Changes in absorptive and secretory functions of the stomach affected by experimental ulcers from exposure of the organism to high frequency physical agents”


381. FEUCHT, H. L. RICHARDSON, A. W., & HINES, H. M. (1949) Arch. of Physical Med. 30:164-169, “Effects of implanted metals on tissue hypertermias produced by microwaves”


389. FLEET, R. S., & ROSE, -. (1956) Bpt, School of Aviation Medicine, U. S. Air Force (March), “Ocular findings on electronics personnel”


401. FRANK, V. A. (1958) In: Proc. of Jubilee Scientific Session of Institute of Labor Hygiene and Occupational Diseases of Academy of Medical Sciences of the USSR, Moscow, pp. 271, "Measurement of electric and magnetic components of a high-frequency field in the immediate vicinity of radiation sources (in the induction zone) in the range 100 kHz - 300 MHz".

402. FRANK, V. A. (1959) In: Summary of reports, Labor Hygiene and the Biological Effect of Radio Frequency Electromagnetic Waves, Moscow, "Influence of the frequency on the frequency of the absorption of energy by a human in an electromagnetic field".


410. FREYEL, G. L. (1937) In: All Union Institute for Experimental Medicine, Moscow, pp. 115-137, also p. 410, "Some characteristics of the biological effect of VHF-HP".


422. FREY, A. H., & SELKERT, E. (1968) Life Sciences 7 (part 11):505-512, (AD 679842), "Pulse modulated XRF energy illumination of the heart associated with change in heart rate".

423. FRICKER, S. J. (1957) Proc. Int. Tri-service Conf. on Biological Hazards of Microwave Radiation (Pattishall, E. G., ed.) 1:77-78, "Biologically meaningful units of RF measurement and dosimetry development".


426. FRIEND, A. W., JR. (1970) Report, Moore School of Electrical Engineering, Univ. of Pennsylvania, "Some research results concerning the effects of AC electric fields and noises on the Giant Amoeba, Chaos chaos"


430. FUCHS, G. (1951) Wiener Medizinsche Hochenschrit 102:583-588, (In German) "The combined shortwave and x-ray therapy of malignant tumors"


434. FUKALOVA, P. P. (1966) Gigiena i Sanitariya, USSR, 31(2):306-308, (TT 66-51600/4-6, In English), "Effectiveness of protection against shortwave and ultrashortwave electromagnetic fields at radio and TV stations"


446. GALE, C. K. (1943) Arch. of Physical Therapy 24:271-277, "Factors involved in the orientation of living cells and related electrical, mechanical, and optical phenomena, using giant amoebae and the techniques of microcircuitry"


454. GIESE, A. C. (1947) Quarterly Review of Biology 22(4):253-283, "Radiations and cell division"

455. GILL, S. J. (1959) Univ. of Colorado, Progress Rpt. to Office of Naval Research (Nov.), (AD 229625), "Hemato susceptiblity of single biological cells"

456. GILES, E. (1944) Comptes Rendus 123:546-547, (In French) "Lethal effects of ultrashort waves on microorganisms"

457. GILES, E. (1944) Comptes Rendus 123:565-567, (In French) "Fungicidal and bactericidal effects of ultrashort waves are a consequene of selective thermal action under certain conditions"


462. GLEIZER, D. YA. (1937) In: Materials of the Leningrad Conference on UHF-HF Waves, Leningrad, pp. 5-10, [Title not given]

463. GLEIZER, D. YA. (1940) Referaty rabot uchrezhdeny otdeleniya biologicheskikh nauk za (Abstracts of Studies by the Department of Biological Sciences for 1940), Moscow - Leningrad, pp. 318-, (Abstr. in: The Biological Effects of Electromagnetic Fields - Annotated Bibliography, ATD Rpt P-65-17, Apr. 1965) [Irradiation of the heads of dogs with 7.7 m electromagnetic waves]


465. GLEIZER, D. YA. (1940) Referaty nauchno-issledovatel'skoy uchrezhdy, ORNAN SSSR, Leningrad, "The effect of ultra short waves on the higher nervous activity"

466. GLEIZER, D. YA. (1940) Referaty nauchno-issledovatel'skoy uchrezhdy, ORNAN SSSR, Leningrad, "The effect of ultra short waves on the higher nervous activity"

467. GLEIZER, D. YA. (1940) "E~xperimental study of the thermal effect of the ultrashort frequency field in Escherichia coli and Bacillus subtilis" "

468. GOFF, L. G. (1957) Proc. Tri-service Conf. on Biological Hazards of Microwave Radiation (Parthshah, E. G., ed.), pp. 76 only, "Rerarks at microwave conference" (Fertinent to Navy's program of microwave research)


473. GOLDBLITH, S. L. (1960) Nuki Lecture & Review Series, No. 60-6, 1959-1964, (Sept.) pp. 247-255, (Also AD 252582) "Short wave electromagnetic radiation as a hazard to personnel"

474. GOLDSHEVA, K. P. (1937) in: Problems of Metrics and Dosimetry of Ultrahigh Frequency in Biology and Medicine, Moscow, pp. 63-74
475. GOLISCHEVA, K. P. (1939) Arkhiv patologicheskoy anatomii I patologicheskoy fiziologii 5:5--; (Abstr. in: The Biological Effects of Electromagnetic Fields - Annotated Bibliography, ATD Rpt P-65-17, Apr.) [Title not given] [Irradiation of rabbits at UHF fields]

476. GOLISCHEVA, K. P. (1941) Arkhiv Patologicheskoi Anatomii, Moscow, 7(2):119-122, (In Russian) [Abstr. in: The Biological Effects of Electromagnetic Fields - Annotated Bibliography, ATD Rpt P-65-17, Apr.). "The effect of the electric field of ultrahigh frequency upon the temperature reaction and glycogen contents in denervated liver in cats"


503. GORDON, Z. V., LOBANOWA, T. T., KITSOVSKAIA, I. A., NIKODIMOV, S. V., & TOLMAKAYA, H. S. (1962) In: Summaries of Reports, Second All Union Conference on the Application of Electronics in Biology and Medicine, Moscow, "Data on the biological effects of microwaves of various frequencies"


509. GORDON, Z. V., et al. (1957) In: Summaries of Reports, Part 2: Jubilee Scientific Session of the Institute of Labor Hygiene and Occupational Diseases, Moscow, "Hormonal changes in animals under the action of ultrahigh frequencies"


514. GORODETSKAYA, S. P. (1962) Fizioligicheski Zh. Akad. nauk URSR, 8(3):390-396. (Also, FTD-TT-62-1361/342, AD #292305), "Hormonal changes in internal organs when the organism is exposed to the effect of centimeter waves"


518. GORODETSKAYA, S. P. (1964) In: Problems of the Biophysics and Mode of Action of Radiation, (Also, JPRS 34763), pp. 70-74, "Characteristics of the biological effect of 200 cm radio waves on animals"


605. HELLER, J. H. (1969) Presented at the Hazards and Utility of Microwaves and Radiowaves Seminar, (Heller, J., Chm.), 11-12 Dec., Boston, "Chairman's remarks"; "Areas of national and industrial concern - ominous and beneficial"; "Future research requirements"


607. HELLER, J. H., & MANN, G. H. (1961) Digest of the 4th Internat. Conf. on Medical Electronics (July), p. 152 only, "Non-thermal effects of radio frequency in biological systems"

608. HELLER, J. H., & TEIXEIRA-PINTO, A. A. (1958) Recirculo-Endothelial System Bulletin 4:10-11, "Further investigations into radio frequency effects which appear to be active on the reticulo-endothelial system in whole-body irradiations"


610. HENDLER, E. (1959) Proc. of the 12th Annual Conf. on Electrical Techniques in Med. and Biology, Digest of Tech. Papers, (Lewis Winner, pub., New York, 10-12 Nov.), p. 37 only, "Some observations regarding temperature sensations due to microwave irradiation"


612. HENDLER, E., & HARDY, J. D. (1960) Institute of Radio Engineers 2(3):143-152, (Presented at 12th Annual Conf. on Electrical Techniques in Med. and Biology, Nov. 1957, Philadelphia, Pa.), "Infrared and microwave effects on skin heating and temperature sensation"

613. HENDLER, E., & HARDY, J. D. (1961) See citation Nos. 570 & 571; Incorrectly listed under HENDLER


616. HERRIQUES, F. C., JR. (1947) Arch. of Pathology 43:489-502, "Studies of thermal injury: V. The predictability and the significance of thermally-induced rate processes leading to irreversible epidermal injury"

617. HERRICK, J. F. (1952) Presented at Institute of Radio Engineers National Convention, New York, "Application of microwaves in physical medicine"


621. HERRICK, J. F., & KRUSEN, F. H. (1956) Institute of Radio Engineers Trans. on Medical Electronics, JMEME-4:10-12 (and Symposium on Physiologic and Pathologic Effects of Microwaves (Kruse, F. H., Chm.), Mayo Clinic, Sept. 1955) "Problems which are challenging investigators in medicine"


623. HETHERINGTON, A. (1957) Proc. of 1st Tri-service Conf. on Biological Hazards of Microwave Radiation (Pattishall, E. G., Chm.), 1:1-4, "Introduction to biological effects of microwave radiation conference"

624. HIGASAT, K. (1950) Monograph Series of the Research Institute of Applied Electricity, Hokkaido Univ., Sapporo, Japan, 1:7-29, "Physical principles of ultra-short wave therapy and other high frequency applications"

625. HIJIKES, J., & KAMIEK, V. (1967) Wissenschaftliche Berichte 20:1435-1450, "Examinations of the genital organs and studies of the menstrual cycle in women working in the field of microwave radiation"

626. HILL, T. J. (1958) J. of the Amer. Chemical Society _8 (6):2142-, "Some possible biological effects of an electric field acting on nuclic acid or proteins"

627. HILLES, H. M. (1958) State Univ. of Iowa, College of Medicine (AF Rept. 41(657)-113), "Effects of 3, 10, and 12 cm radiation upon the avascular bollom visceras of dog"


764. KNORR, K. G. (1959) in: Summaries of reports, Labor Hygiene and the Biological Effect of Radio Frequency Electromagnetic Waves, Moscow, p. 22 only, Title?


766. KNORR, K. G. (1964) Referatvezmy Zh., Elektronika i Vyepr primene, (3):11-21, (Also in: The Biological Action of Ultrahigh Frequencies, Letset, A. A., & Gordon, Z. V. (eds.), Moscow, JPRS 12471, pp. 5-17, "Parameters of UHF fields determining the biological evaluation of working conditions and the problems of their measurement"

767. KNORR, K. G., & BELYTSKII, B. M. (1959) in: Summaries of reports, Labor Hygiene and the Biological Effect of Radio Frequency Electromagnetic Waves, Moscow, p. 36 only, Title?


769. KNOXON, A., & SCHADIE, P. J. (1929) Abstr. of Communications to the XIth Internat. Physiological Congress, held in Boston, Aug., pp. 147-149, "Chemical changes in the body resulting from exposure to UHF field. I. Blood chemical findings in the dog. II. Acid base balance in the plasma of dogs"


833. KRUSTANOV, L., & GOSHEV, Z. (1966) Vremo Meditsinsko Delo _((4):41-46, "The peripheral blood characteristics of personnel exposed to a superhigh frequency electromagnetic field"


835. KUROKOA, V. V. (1964) Trudy MI Gigiena Truda i Profzaboletanniy SSSR, (Biological Effects of Radio Frequency Electromagnetic Fields, Inst. of Industrial Hygiene and Occupational Diseases, Academy of Medical Sci., USSR), Moscow, _((2):70-74, "The effect of microwaves in the centimeter and decimeter wave range on the general and specialized patterns of appetite in animals"

836. KULAKOVA, V. V. (1966) In: Konferentziya molodykh nauuchnykh rabotnikov (Report summaries, Conf. of Young Scientific Workers), Tashkent, Dokladov, pp. 73-74, (Abstr. in: ATD 69-105-108-9 Soviet Radiobiology, June 1968, p. 80 only, AD 671436), "Methods for investigating electrolyte requirements and their content in blood and urine in studying the biological effects of microwaves"

837. KULIK, J. J. (1963) Final Report Federal Aviation Agency (No. KD-64-1), (AD 455491), "Microwave radiation hazard to aircraft transiting radio and radar beams"

838. KULIKOVSKAYA, YE. L. (1961) In: Materials of the Scientific Session Concerned with the Results of Work Conducted by the Leningrad Institute of Industrial Hygiene and Occupational Diseases for 1959-1960, Leningrad, "The problem of microwave radiation of ship crews of the civil ocean fleet"


843. KULINA, YE. T. (1965) In: Papers on the Physicochemical Basis of Autoregulation in Cells, Moscow, pp. 26-, "Concentration and radio-frequency dependence of autoregulation of functions of unicellular organisms (paramecia"


848. KUPALOV, P. S., & FRENKEL, G. L., (Eds.), (1937) (In Russian), All Union Inst. of Experimental Medicine, Moscow, 417 pages, The Biological Action of SHF-UF-Ultrashort Waves


853. LAFORD, C. (1959) Missiles and Rockets _((7):20-, (14 Dec.) "Microwave 'hazards' are exaggerated"

854. LADJO, E. (1952) Canadian J. of Physiology 30:663-, "Dielectric properties of some solid proteins at wavelengths of 1.7 m and 3.2 cm"


856. LANG, O., & KOLLE, H. (1956) Zeitl. Arbeitsmed. Arbeitschutz 6:12-, (In German) "Protective measures for working spaces in high frequency installations"


858. LARKE, C. R. (1957) Proc. 1st Tri-service Conf. on Biological Hazards of Microwave Radiation (Pattishall, E. G., ed.) 1:47-51, "Hazards of electromagnetic radiation to ordnance"


925. LOGANOVA, Ye. A. (1966) Gigiena Truda i Profzabolaimny (Moskva) USSR, (10):7-12, ("TR 39820), "Effect of chronic exposure to pulsed and unmodulated 10 cm waves on the conditioned reflex activity of white rats"


930. LOGY, A. YA. (1963) In: Aviation and Space Medicine, Paria, V. V., (ed.), Academia of Med. Sciences, USSR, Moscow, pp. 292-295. (Transl. in: NASA TR-2215, 665-13272), "Labor hygiene and occupational pathology involved in the work with centimeter wave generators in the Civil Air Fleet"


932. LOGOVA, A. YA. (1966) In: Problems of Space Medicine, Moscow, pp. 262-263, (AID Rep't 66-116), "The problem of the combined biological effect of X-ray and UHF irradiation"

933. LOGOVA, A. YA. (1968) Gigiena I Sanitariya, USSR, (5):15-18, "Radio frequency irradiation from aircraft communication systems as a health hazard"

Reaghan, F. W., "Ad.) 2:79-476, (AD 131477), "On the resonance and selective absorption of microwaves by the flagellate Opalina ramarenus"


Marek, K. (1963) Pracovni Lekarstvi, Prague, 15:387-393, (In Czech.) "Biological effects of rf electromagnetic waves"


Marek, K. (1963) U. S. Govt. Res. & Dev. Reports, 25 pages (AD 642029) (Summary of Unclassified Report), "Biological effects of high-frequency electromagnetic waves" (Transl. of item #978 (above))


Marriott, I. A. (1964) Medical Service J. of Canada 20:546-552, "Three cases of apparent chemical burns of the hands following contact with a magnetron tube"


1021. MICHAELSON, S. M., HOWLAND, J. W., THOMSON, R. A. E., & HEMAGEN, H. (1959) Proc. 3rd Tri-service Conf. on Biological Effects of Microwave Radiating Equipments (Sances, A., Jr., ed.) 3:161-190, "Comparison of responses to 2800 MHz and 200 MHz microwaves or increased environmental temperature"


1033. MICHAELSON, S., et al. (1961) Industrial Med. and Surgery 30:298-, "Tolerance of dogs to microwave exposure under various conditions"


1039. MILLER, J. B., & MAZURKIEWICZ, J. (1967) Poland Tygodnik Lekarski, Poland, 22:1924-1927, "Changes in the nervous system in individuals working within the range of microwave radiation"


1041. MILLISIN, V. A. (1938) Fizioterapija, Moskva, (2):1, "The first international congress on SHF-UHF radiation"


MINECKI, L. (1962) Rept. of the 6th Polish Conf. of Occupational Medicine, "The thermal effect of microwave radiation" and "Changes in activity of cholinesterase in mice subjected to single and repeated action of microwaves"

MINECKI, L. (1964) Arkiv za fysiologi og distribusjon (15):47-55, (In Polish), (Delivered before the 1st Yugoslav Congress of Occupational Medicine, Rome, 4-5 Nov, 1963), "Critical evaluation of maximum permissible levels of microwave radiation"


MINECKI, L. (1966) Medycyna Pracy 15:300-304, "Clinical symptoms in workers exposed to the effect of high frequency electromagnetic fields"

MINECKI, L. (1966) Medycyna Pracy 17(2):135-136, "Critical evaluation of the health protection of personnel occupationally exposed to high frequency electromagnetic radiations"


MIROUTENKO, V. I. (1962) Revue de Medicine Aeronatique, Paris, 5:9-13, "Morphological and metabolic changes observed experimentally under the influence of high frequency electromagnetic fields"


MISLHLIIO, L. I. (1969) Biulelni Eksperimental'noi Biologii i Meditsiny (Moskva) 68(7):54-58, (In Russian with English Summary), "The influence of an ultra high frequency electromagnetic field on the carbohydrate metabolism in the brain of rats"

MISHIN, V. V. (1973) Vsesoyurnoye Fizikologicheskoe Obshchestvo, Vsesoyurnoye Akademiya Nauk SSSR Fizikologii i Biologii, Trudy Otdeleniya Fizikologii i Biologii, Izd-vo Vsesoyun. Univ., pp. 40-46, "Change of activity of the neuromuscular system under the influence of electromagnetic oscillations in the audio frequency range"


1094. Moskva, W., et al. (1965) Kosmoe-Seria A Biologia 5,277-284, (JPRS 33,500), "Biophysical effects of a constant magnetic field."


1097. Much, V. (1951) Ophthalmologica (Basel) 126:41-43, "Ultra short-wave therapy following extra capsular cataract extraction."


1136. NKIGOSTAN, S. V. (1964) Trudy NII Gigiena Truda i Profsoobshcheniy AN SSSR, (2):63-88, "A study of cholinesterase activity in the blood serum and organs of animals subjected to the chronic effects of microwaves"; Ibid., pp. 66-67, "Effects of 10 cm waves on the content of nucleic acids in animal organs"; Ibid., Issue 9, pp. 59-60, "Effect of 10 cm waves on amount of protein fractions in animal blood serum"; (Also: In: The Biological Action of Radio-Frequency Electromagnetic Fields, Institute of Industrial Hygiene and Occupational Diseases, Academy of Medical Sciences, USSR, Moscow)


1140. NIKOLOVA-TROVA, L. (1964) Voprosy Kurortologii, Fizioterapii i Lechebnoy Fizicheskoy Kultury (Problems in Health Resort Sci., Physiotherapy and Physical Culture, Moscow), 29(3):239-242, (JPRS 56083, 064-27670),"Results of microwave treatment of some diseases"

1141. NIKONova, K. V. (1960) Gigiena Truda i Profsoobshcheniy AN SSSR, (1):9-12, "The hygienic characteristic of labor conditions during work with high frequency heating in the electrovacuum industry"


1144. NIKONova, K. V. (1964) Trudy NII Gigiena Truda i Profsoobshcheniy AN SSSR, (2):49-56, "Effects of high frequency electromagnetic fields on the functions of the nervous system"; Ibid., pp. 61-65, "Effects of high frequency electromagnetic fields on blood pressure and body temperature of experimental animals"; (Also: In: The Biological Action of Radio-Frequency Fields, Institute of Industrial Hygiene and Occupational Diseases, Academy of Medical Sciences, USSR, Moscow)


1146. NIZHNIK, V. V. (1956) Zh. Obshchei Biologii, Moscow, 17(4):316-316, "Viability changes in sexual cells of male rabbits and mice under the action of SHF-UHF"


1148. NITHO, N., & TORRISI, S. (1930) Amer. J. of Physical Therapy (9):130-, "A specific effect of high frequency electric currents on biological objects"; and Ibid., (11):102-, "Ultra-high frequency electromagnetic vibrations: their effects upon living organism"

1149. NYBORG, J. E. (1946) Nature 157(1976):51 only, (12 Jan.), "A specific effect of high-frequency electric currents on biological objects"


1152. OROSOV, A. N. (1963) Proc. of 1st republican Conf. of Physiotherapists and Health-Resort Specialists of the Ukrainian SSR, Kiev, pp. 238-, "A pulsed UHF field - a new therapeutic factor"


1261. PRATT, C. B., & SHEARD, C. (1935) Protoplasma 23:26-33, "The effects of intravenous injection into rabbits of strains of streptococci which have been exposed to the high-frequency field"


1265. PRESMAN, A. S. (1954) Gosenergoizdat, Moscow, Centimeter Waves

1266. PRESMAN, A. S. (1954) In: Annotations of Scientific Works of the Academy of Medical Sciences of the USSR, Moscow, pp. 479-, "An instrument for measuring the intensity of irradiation of 10-centimeter waves in industrial conditions"


1269. PRESMAN, A. S. (1956) Biuleteny Experimental'nyi Biologii i Meditsiny (Moskva) 43(2):51-54, "Temperature changes of the human skin irradiated with low intensity waves several centimeters in length"

1270. PRESMAN, A. S. (1957) Biuleteny Experimental'nyi Biologii i Meditsiny, Moskva, 43(2):51-54, "Change in the human body and skin temperature due to irradiation with low-intensity electromagnetic waves several centimeters in length"


1272. PRESMAN, A. S. (1957) Proc. of the Jubilee Scientific Session of the Institute of Labor Hygiene and Occupational Diseases, Moscow, pp. 72-", "The hygienic evaluation of high-frequency electromagnetic fields"


1280. PRESMAN, A. S. (1962) In: Summaries of reports, 2nd All Union Conf. on the Application of Radioelectronics in Biology and Medicine, Mitlei, (Publisher?), pp. 21-", "Problems concerning the mechanism of the nonthermal action of microwaves"; and ibid. (6):76-", "A method of comparative irradiation of protein solutions with microwaves and infrared rays"


1367. ROSENTHAL, S. W., DIELERNANN, L., CRISPIN, G. H., & ZARET, M. H. (1967) Digest of the 7th Internat. Conf. on Medical and Biological Engineering. (Jacobson, B., ed.), p. 399 only, "A study of the cataractogenic effect of microwave radiation"


1369. ROTKOSU, A. & CHRISTIANSON, C. (1965) Progress Rept. BRH/IDEP 70-16, 69 pages (limited distribution), "Near-field instrumentation"


1371. ROYER, R., WAKIM, K., LEVESTEOR, S., & KUHSEN, F. (1950) Arch. of Physical Medicine 31:553-566, "Influence of microwave diathermy on swelling and trismus resulting from odontectomy"

1372. ROZANOVA, O. S. (1939) Fiziologiya (2):pp. 1-12, "Significance of the frequency factor for the bioeffects of a RF-VHF electric field"


1375. RUBIN, L., & VOROG'TEV, I. (1936) Kurortologii i Fizioterapiya (2):pp. 5-17, "Significance of the frequency factor for the bioeffects of a HF-VHF electromagnetic field"


1378. SACCHITELLI, F., & SACCHITELLI, G. (1958) Folia Medica, Naples 41:345-, (In Italian), "On the behavior of blood glutathione following irradiation with radar microwaves"


colon bacillus"
of Sipr fields on microorganisms"
small particles In the ultrashort wave condenser field"
high frequency electromagnetic (radar) waves on organ',c, not-living tissues"
Work in
1412. 1411. 1410. 1409. 1408. 1407. 1406. 1405. 1404. 1403. 1402. 1401. SAREL, 11., et al. (1961) Zeitschrift fur die Sesaute ;ly.iiniene und lhre Ctenzewhicte (Berlin) 7:897-, (In German) "CIn-
the root of Vicia Fabea"
of ionizing radiation and electromagnetism;
1400. 1399. SXCLCES, 60-70
1398. SALOTTI,
1397. SALISBURY,
1396. SALATI,
1395.
1394.
1393. SALATI,
1392. SALATI,
1391. SAITO, H., SHER,
1390. SAITO, H.,
1389. SAITO,
1388.
29-29, (Abstr. in: The Biological Action of USF, (Letavet, A. A., & Gordon, Z. V., eds., Moscow, JPRS 12471); (Also, Abstr. In:
The Biological Effects of Microwaves; Compilation of Abstracts, ATD P-65-66, (1965), p. 9 only, "Effect of USF on the human nervous system", "State of the nervous system under the influence of USF")
1383. SAITO, M., SHER, L. C., & SCHMAN, H. P. (1961) Digest of Internat. Conf. on Medical Electronics and Medical and Biological Engineering 2:156 only, "IF field-induced forces on microscopic particles"

1414. S nederland, A. (1950) Public Health Reports 65:1939-44, "The physiological effects of currents of very high frequency (155,000,000 to 8,100,000 rps)"

1415. S nederland, A. (1950) Public Health Reports 65:1939-44, "The action of currents of very high frequency upon tissue cells, A. Upon a transplantable mouse sarcoma"


1419. Schiller, L. (1950) Stuttgart, (In German), "Endocrine influence on bleeding and coagulation time"


1427. Schuman, H. (1955) Zeitschrift fur Naturforschung (Tubingen) 103:10, (In German), "Measurement of electrical constants and complex resistances in biological materials"


1434. Schuman, H. P. (1957) Final Rep. from Univ. of Penn. on UHR Contract (1 July 1954 to 30 June 1957) 1. pages, (AD 149535), "Influence of electromagnetic radiation on biological material"


1438. Schuman, H. P. (1958) Annual Progress Rep. on UHR Contract, Univ. of Penn. (AD 297464), "Properties of biological material"


1-1. Schuman, H. P. (1959) Proc. 3rd Tri-service Conf. on Biological Effects of Microwave Radiating Equipments (Suskind, L., ed.) 2:55-196, (AD 195940); AD 234788, "Theoretical considerations pertaining to thermal dose meters"


1499. SEIVDOKH, N. V. (1965) Bulleten Eksperimental'ny Biologii i Meditsinii (Moskva) 60(4):17-19, (FTD Transl. (116-31496; JPRS 30998; 852-28164), "Elimination of thermoelastic in dogs by means of high frequency currents"

1500. SENKVECH, A. I. (1959) Summaries of reports. Labor Hygiene and the Biological Effect of Radio Frequency Electromagnetic Waves; Moscow, p. 6 only. (Title not given)


1505. SIVASTARVON, V. V. (1965) Voyenno Meditsinskii Zh., USSR Military Med. Jour. 152(2), "Measurement of SHF-UHF electromagnetic radiation intensities and the problem of their hygienic appraisal"

1506. SIVASTARVON, V. V. (1969) Voyenno Meditsinskii Zh., USSR Military Med. Jour. 151(1), "Visual recording technique used in the assessment of SHF-UHF effects on an organism"


1509. SHAH, T., & VINEJE, J. (1967) J. of Applied Physics 38:956-, "Microwave techniques for measurement of the dielectric constant of fibers and films of high polymeric materials"

1510. SIECHERAVA, H. P. (1961) Gigiena 1 Sanitaria, USSR, 28(5):16-22, (JPRS 23989), "On the combined action of high frequency electromagnetic field and x-ray in industry"

1511. SIEKHAN, A. TE. (1933) Biulleten Gosudarstvennogo Tsentral'nogo Instituta Sechenova (Bull. of the State Central Institute of Scehenov), 1(2-3):pp. 1-111, "From the history of the scientific life of the Sechenov Institute"


1523. SHIVYEVA, N. YE. (1949) Problemy Fiziolohiceskoy Akustiki, USSR, 1:122-127, (Abstr. in: The Biological Effects of Electromagnetic Fields - Annotated Bibliography, ATD Dept. P-66-17, Apr. 1965); (AD 201129); PTD-TL-62-491/2-9), "Effect of the action of a SHF-VHF field on the aural sensitivity during application of electrodes in the zone of projection of the aural zone of the cortex (lamella of temporal bone)"


1632. STANGAEVSKII, V. A., & IGATYEVA, O. S. (1962) "Effects of microwave fields. Kirov Order of Lenin Military Medical Academy, Leningrad, pp. 52-53, "Some metabolic indices in the blood and urine of individuals following their exposure to SHF-UHF electromagnetic fields""


1639. SŁUSZNICKI, W. T., & HICKS, R. A. (1932) J. of Infectious Diseases 50(1):1-25, (Title?"


1643. TALLAPO, W. B., & DETTING, J. (1959) Annual report to Air Force of Microwave Radiation Research at the Univ. of Va., (AD 23973), pp. 57-78, "Effects of exposure to microwave and infrared energy upon behavior of rats"


1651. TACCHI, J. A., ROCHE-SIERDA, G., & VILLA, F. (1966) Proc. of 8th Internat. Conf. on Medicine and Biology in Engineering and 22nd Annual Conf. on Engineering in Medicine and Biology, held in Chicago, Ill., 21 July, "Chances of muscle action in birds exposed to a microwave field"
"The behavior of unicellular organisms in an electromagnetic field"


1665. TIKHONOVA, H. A. (1948) Problems of Experimental Pathology, Collection, Tashkent, pp. 113-119, "The problem of the action of an electromagnetic (UHF) field on the growth of young animals"


179. TOLGSKAYA, H. S. (1957) Bulletin Experimental'ni Biologiya i Meditsina (Moskva) 4: (1):104-107, "Changes in the synaptic formations during intoxication with occupational poisons"


181. TOLGSKAYA, H. S., & FUKALOVA, P. P. (1968) Gigiena Truda i Professional'nye Zabolevanija (Moskva) (9):11-40, "Morphological changes in experimental animals under the action of electromagnetic fields in the UHF and VHF ranges"


189. TOLGSKAYA, H. S., & BUKOVA, R. V. (1964) Trudy III Gigiena Truda i Profzabolonosti AN SSSR (2):89-93, "Histological changes in the organs of white rats under continuous exposure to HF-LF electromagnetic fields"

190. TOLGSKAYA, H. S., & ALI (1957) Izvesty Dokladov Yubileynoy Sessii Institut Cig. Tr. Prof. Zabol. (2):73-74, "Morphological changes in animals exposed to SHF and UHF fields"

191. TOLLS, V. E., & MOWAT, W. J. (1956) Trans. of Institute of Radio Engineers on Medical Electronics, PCE-4:11-15, (See also Erratum in Trans. of Inst. of Radio Engineers PCE-4:49 1956); (Presented at Symposium on Physiologic and Pathology Effects of Microwaves, Krusen, P. H., (Crm.), May Clinic, 13-24 Sept., 1955), "Energy densities of microwave radiation system"


198. TOUXIN, A. V. (1960) In: Questions on the Use of Short Waves and Ultrashort Waves in Medicine, Moscow, "The effect of VHF electromagnetic fields on basal metabolism"


ULYGIN, V. YA. (1962) Biulleten Experimental'noi Biologii i Meditsiny (Moskva) (4):62-63, "Irradiation of the human organism by 2-3 m waves".


VALUEVA, N. V. & STRUSSKAYA, N. V. (1966) Zh. Neirofiziologii i Fiziologii Krasnoy (Krasnoy) 46(6):1112-1116, "Functional changes in the nervous system and some other systems of the organism under chronic exposure to SHF-UHF radiation. See also TUGIN.


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1784. WELSH, A. (1935) Medical Hygiene 8:182, 431, "Microwaves in physiotherapy"


1807. WILKINSON, K. G., et al. (1957) Institute of Radio Engineers Trans. on Medical Electronics, Ref. "An observation on the detection by the ear of microwave signals"


80


1914. WINDLE, J., & SHAW, T. (1956) J. of Chemical Physics 25:435-, "Dielectric properties of wool-water system at 26,000 MHz"


1922. YAKOVA, M. I. (1965) "The study of efferent impulse in postganglionic sympathetic fibers under the action of a SHF-UHF electromagnetic field" (Also cited as #656, this Biblio.)


1930. YATSUKO, H. I. (1965) Fiziologiiskiy Akad. Nauk SSR 115(4):332-333, "Effect of microwaves on the absorptive capacity of the synovial membrane of the knee joint when the spinal cord has been severed"


1932. YATSUKO, H. I. (1968) Fiziologiiskiy Akad. Nauk SSR 14(2):261-264, "Effect of microwaves on the absorptive capacity of the knee joint under conditions where xylol and amylaine have been introduced into the organism"


1934. YEFREM, V. V. (1942) Biulleten Ekspertimental’ny Biologii i Meditaine (Moskva) 14(2):61-, (Abstr. in: The Biological Effects of Electromagnetic Fields - Annotated Bibliography, ADT Rep. P-65-17 (Apr. 1965), (Title not given) A UHF field causes depression in some species of animals"


1889. "Biomedical aspects of microwave radiation", School of Aviation Medicine, U.S. Air Force, Jul. 1956


1892. "Health hazards; Information on microwave radiation (including ionizing radiation from electronic equipment)". Environmental and Occupational Health Information Letter No. 58, Headquarters Air Material Command, Wright-Patterson AF Base, Ohio, (Nov. 1957)

1893. Conference on Radio-Frequency Hazards, Minutes, Sponsored by Navy Dept., Bureau of Ships, Electronics Div. (Code 960), (Aug. 1957), (Also Minutes of 1958 Conf.)


1908. "Blood coagulation changes due to electromagnetic microwave irradiations", Report, St. Louis Univ., (DA-36039, SC-76122), (AD 229267), (1959)

1909. "Labor hygiene and the biological effect of radio frequency electromagnetic waves, summaries of reports", Moscow (1959)

1910. Digest of Technical Papers of 12th Annual Conf. on "Electrical Techniques in Medicine and Biology" (Schwan, H. P., Chairman), Rome Air Development Center, N.Y., TR-59-221, (Sponsored by Institute of Radio Engineers, IEEE, and Instrument Soc. of America; Phila., Pa.), (1959)

1911. "Biological effects of radio frequency radiation; bibliography", Prepared by Rome Air Development Center and Midwest Research Institute, Kansas City, No., (RADC TR 60205), (AD 244003), (1960)

1912. "Now dangerous are microw...", British Medical J., pp. 1420-1421, (1960)


84

1919. Methods of Protection Against the Action of Electromagnetic Fields with the Use of High-Frequency Generators, Moscow, (1962) [In Russian]

1920. "Bulletin on health hazards due to radar and similar installations and their prevention", Dusseldorf, (1962), (In German)


1922. "Microwave effects on the human body: bibliography", (AD 46050), (1962) [Not presently avail. from DOD; "withdrawn by controlling agency"]


1926. Protection Against the Action of Electromagnetic Fields and Electric Current in Industry, Leningrad, (1963) [In Russian].

1927. "Soviet design clothing to protect workers from the effects of electric fields", Technical Digest (Czech), (9):79-, (Sept. 1964)


1929. "Some biochemical changes in workers exposed to centimeter waves", Trans. of Soviet Bloc Sci. and Tech. Lit. (ATDP 6495; AD 460106), (1964)


1935. A standard method for determining field intensity and irradiation by electromagnetic waves in the RF and UHF bands for health purposes, preventive medical examinations of personnel and possibly of persons exposed to such radiation", Decree of the Czechoslovak Surgeon General, (1965), (In Czech.)


1937. "Effects of R-F energy on biological macromolecules, I1", by Melpar, Inc., Falls Church, Va., for U. S. Army, Edgewood Arsenal, Md., (AD 618472), (1965)


1940. "Sanitary regulations in work with sources of MF-LF and VHF-HP electromagnetic fields" (USSR No. 615-66), (1966), 11 pages


1944. "Dog tests increase microwave concern", Technology Week, pp. 33-34, (1966)


1947. "Radiation hazards", Abstr. from 'Electronics Installation and Maintenance Book', Dept. of the Navy, NAVSHIPS 0967-000-0106, (formerly 900,000.100), (June 1-7)
1948. "The microwave oven - a benefit and a potential hazard". In Congressional Record - Senate, (8 July 1969), pp. 8231-8234


1955. Non-Ionizing radiation biomedical development project 42-XX, Development Plan (DP), Bureau of Medicine & Surgery, Dept. of the Navy, (For Official Use Only), (April 1970)


1958. "Study shows microwaves can produce cataracts", Industrial Research, p. 26 only, (Feb. 1971)


1966. "RADHAZ Instrumentation", (RF radiation hazard), General Electric, Light Military Electronics Department, Utica, N. Y.

Addenda follows


2025. SAMARS, G. H., MUKOFF, L. R., & ANDERSON, C. E. (1971) IEEE Trans. on Microwave Theory and Techniques (Special Issue on Biological Effects of Microwaves) MTT-19(2):245-247, "Prolongation of life during high-intensity microwave exposures"

2026. SCHMAL, H. P. (1971) IEEE Trans. on Microwave Theory and Techniques (Special Issue on Biological Effects of Microwaves) MTT-19(2):146-152, "Interaction of microwave and radio frequency 'radiation with biological systems"


**Unassigned Reports and Articles: Addenda**


2032. "Oven measures oven radiation", Microwaves 10(4):10 only, (July 1971)


2034. "Deep heating is bad to athletes", Hospital Tribune 1-20 only, (Feb. 8, 1971)


2036. "Did secret brain produce tumors - or brain tumors?", Medical World News 12(5):19 only, (1971) [Rare type of brain tumor (astrocytoma) alleged to have been caused by microwave radiation]

2037. "Plane signals all in lady’s head", Washington Star, (22 April 1971)


2041. "Radar place crew may have eye damage", Microwaves 10(4):9 only, (Apr. 1971)

2042. "Electromagnetic radiation experts study heart pacemakers", Study by Soc. of Automotive Engineers, Ref?


2044. "Radiation tumor may be probing", Electronics 46(15):7 only, (2 Aug. 1971) [Rare type of brain tumor (astrocytoma) alleged to have been caused by microwave radiation]


2050. "(CB) Glow discharge lessens wool’s shrinkage", Chem. & Engineering News, 28 only, (3 May 1971)


2052. "Electromagnetic waves speed up potato growth rate", Glos Wybrzeza, (Rumania), 14, (29 May 1966)

Radiation

MITCHELL, J. C., & CASS, A. B., pp. 1-14, "Hematological and biochemical results from RF exposures at 10.5, 19.3, and 16.6 MHz"

FRAZER, J. W., pp. 15-32, "Empirical data on energy transfer models and application to primates"

PRINCE, J. E., pp. 33-49, "A possible cytologic aspect on RF radiation in subhuman primates"

GREEN, P. M., pp. 50-79, "Design and calibration of E and H field probes for HF band application"

REICHER, D. E., & RENO, V. R., pp. 80-96, "Naval Aerospace Medical Research Laboratory microwave facility"

REICHER, D. E., & CRISSETT, J. O., pp. 97-114, "Extremely low frequency radiation and man"

FRAZER, J. W., pp. 115-132, "Use of temperature sensor implants and radiometric technique to monitor animal temperatures in RF fields"

MITCHELL, J. C., pp. 133-150, "Modified exposure system for HF band RF radiation studies"

CASS, A. E., Jr., pp. 151-166, "Preliminary study of 26.6 MHz radiation on the growth rate of young mice"

MICKEY, G. V., pp. 167-164, "Genetic damage to cells and organisms exposed to RF irradiation"

MCLEES, J. D., & FINCH, E. D., pp. 165-174, "The effect of radio frequency irradiation on biologically important molecules"

MCLEES, J. D., & FINCH, E. D., pp. 175-176, "The effects of radio frequency radiation on regenerating hepatic tissue"

FINCH, E. D., pp. 177-178, "Experimental protocol for the irradiation of biological systems with radio frequency electromagnetic energy" and "An alternative to dielectric absorption: pulsed NMR determinations of the structure of 'bound' water and its interaction with radio frequency electromagnetic radiation"


GLASER, Z. R., pp. 243-254, "Biological studies at microwave frequencies"

SILVERMAN, C., pp. 255-267, "Followup study of r.f.: workers"

SCANT, N. P., & KENT, G., pp. 268-277, "Current microwave studies"

STRAUB, E. B., pp. 278-287, "Preliminary results of non-ionizing radiation effects research"

MATT, E. L., & PHILLIPS, R. D., pp. 301-327, "Effects of microwave radiation on physiological behavioral factors and CNS excitability in laboratory animals"

SHARP, J. C., pp. 328-334, "Thymidine H3 uptake following low level microwave exposure"

JUSTESON, D. F., pp. 335-349, "Behavioral sensitivity to microwave irradiation"

BRIZZEE, K. R., JUSTESON, D. F., KRIESEL, H., & SHARP, J. C., pp. 350-352, "Cytokine effects of microwave irradiation"


DuVALL, E., pp. 365-370, "Status of world literature base"
FIR Supplementary Listing:


2068. MACCIO, J. T. (1971) Bioenvironmental Safety Newsletter, pp. 3-5, (4th Quarter), "RF health hazards and monitoring meters -- Recent Notes"


2061. "And now, microwave pollution -- An expose of the damage - caused to humans by radar, electronic ovens, and TV transmission," In: Moneyworth Magazine (In Issue to be published, Fall 1971), (110 West 40th Street, New York, N. Y. 10018)


*Note: Items in this list have been alphabetized but the original numbering has been retained.
### APPENDIX A

#### ACCESSION NUMBERS

<table>
<thead>
<tr>
<th>Prefix of Report Number</th>
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<tbody>
<tr>
<td>AD-</td>
<td>Defense Documentation Center (DDC), formerly Armed Services Technical Information Agency (ASTIA)</td>
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<td>JPRS-</td>
<td>Joint Publications Research Service</td>
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<td>LC-ATD-</td>
<td>Library of Congress - Aerospace Technology Division</td>
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<tr>
<td>PB-</td>
<td>National Technical Information Service (NTIS), U. S. Dept. of Commerce</td>
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<tr>
<td>RADC-TR-</td>
<td>Rome Air Development Center, Griffiss Air Force Base, N. Y.</td>
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<td>OTS-</td>
<td>Office of Technical Services, U. S. Dept. of Commerce</td>
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<td>DA-</td>
<td>Department of the Army</td>
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<td>SC-</td>
<td>Sandia Laboratory, Albuquerque, New Mexico</td>
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<td>ACSI-</td>
<td>Assistant Chief of Staff for Intelligence (Army, Washington, D. C.)</td>
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<td>CR-</td>
<td>National Aeronautics and Space Administration</td>
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SECOND SUPPLEMENTARY LISTING


2089. PAZULNOVA, J. (1968) Pracovni Lek. 20:100, "Effects of electromagnetic radiation of the order of centimeter and meter waves on human's health."


93


2101. "Microwave Oven Safety", in: Hospital Administration Notes, No. 41, Bureau of Medicine & Surgery, Department of the Navy, p. 7 only, Oct. 1971.


2193. KAESER, A. N., WALL, R. J., & STETTIN, L. L. (1967) Ann. of the Entomol. Soc. of Amer. 60:1195-1197, "Metabolism in the yellow mealworm, Tenebrio molitor (Coleoptera: Tenebrionidae), following exposure to radiofrequency electric fields"


2211. LIBERIAN, P. (1936) Biology and Therapy, Moscow, "Short and ultrashort waves"


2214. MACGREGOR, R. J. (1970), (Abstr. EW-1-14482; AD 71264), "A brief survey of literature relating to the influence of ion intensity microwaves on nervous function"


2217. MARGUTI, V. H. (1972) J. of the Amer. Inst. of Homeopathy 65(1):7-20, ("to be cont'd in June '72 issue"). "The minimal, man, and biophysics: Some contemporary concepts" ("Interesting" (?) reading)


2227. "ILLS, L. F., & SCHEL, P. (1970) Div. of Biological Effects, NACI, (Index to NACI/DOE 70-6), 55 ppm., "Radiation incidents registry report 1970" (approx. 15% of the total number of incidents reported 133 involved microwave and/or radio frequency equipment)


2237. NELSON, S. O. (1966) Farm, Rural, & Home Quart., No. 132, pp. 15-16, (Summer), "New ways to control insects" [including use of r-f radiation]


2239. OLSZ, C. M. (1965) Food Engineering 37:51-54, "Microwaves inhibit bread mold"


2245. PLOTNICK, L. R. (1968) Transl. (from Russ.) of citation 1212, "Richter", (Dent. No. S70-3644, NELL-Transl-2629- (9022-811)), "etiology of ultra-short frequency exposure" (combined effects of microwave radiation and rafned atmosphere on immunization reactions of human organisms)


2254. RICHARDSON, E. S. (1972) G. S. Medicine 8(3): pp. 3 & 23 (Mar 1), (Describes work of D. F. Justens on rats and mice), "Microwaves inhibit tumor induction"

2255. RIEM, A. (1966) Food Processing and Marketing 27:84-86, "Improved flavor of pasteurized products [cooked with microwave radiation]"


2263. SCHWABE, L. (1933) Public Health Reports 48:845-858 (July), "Heat effects of very high frequency condenser fields on organic fluids and tissues".


2266. SCHMIDT, H. P. (1952) Abstr. in Federation Proceedings 11:142 only, "Electrical properties of blood at ultrahigh frequencies".


2282. TANNER, C. F. (1943) "Military Medicine 108:139-144, (May-June 1943), "The effect of electromagnetic radiation on tissue"
2309. "Radiation hazards." [Including RF and microwave frequencies], from Interference Technology Engineers' Manual, (R & B Enterprises, P.O. Box 318, Plymouth Meeting, Pa.), pp. 102-104 (1972).

2310. "Effects of microwave irradiation - USSR." Rept. (JPRS 51223 & N70-39464), containing articles by Glotova & Sadchikova, and by Dyachenko (numbers 2166 and 2148, respectively, this bibliography), from Gliyem. Truda i Professional'nye Zabolevaniya, Moscow, (1970).