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SOVIET CHEMICAL AND BIOLOGICAL RESEARCH

Compilation of Abstracts
From Soviet Bloc Literature

AID Work Assignment No. 50-a
(Report No. 3 in this series)

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FOREWORD

This report was prepared in response to AID Work Assignment No. 50-a. It consists of twenty-two (22) abstracts, requested by contractors, of entries from AID Bibliography B-63-52. Bracketed numbers for each abstract refer to the original number of the entry in the aforementioned bibliography. Other abstracts will be published at irregular intervals.

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[37]

Bykov, L. T.

Rapid Bacteriological Diagnosis of Tularemia in Patients

Laboratornoye delo, v. 7, no. 11, 1961, 7-9

Seeding of the Drozhevkina liquid yolk medium with the material obtained by puncturing the inguinal bubo resulted in the development of a typical tularemia culture (incubation at 37°C). The culture was identified as *B. tularensis*. It agglutinated with the specific serum and did not grow in the standard medium. The described diagnosis was possible within 3 days after puncture. The control test performed in the usual manner (inoculation of a guinea pig) gave confirmatory results.

Card 1/1

[51]

El'bert, B. Ya.

Microbes and Viruses

Minsk, Gosudarstvennoye izd-vo BSSR, 1960, 543 p.

This monograph contains information equivalent to a basic course in microbiology, although it is not a standard text book. Nevertheless, the book's outline follows the standard approach used in most study texts, and it consists of 23 chapters.

Card 1/1

[52]

Erdős, K., and I. Hum

Defense Against Chemical and Biological Weapons

Magyar Legoltalom, v. 3, no. 1, 1961, 20-21

A brief description of the principles of chemical and biological warfare is given by the authors. The nature of biological chemical agents is mentioned and the article concludes with a short note on countermeasures against CB weapons.

Card 1/1

[60]

Glushko, A. P., L. K. Markov, and P. L. Pilugin

Atomic Weapons and Antiatomic Defense

Moskva, Voenizdat, 1958, 391 p.

This monograph is intended for Soviet Armed Forces personnel and includes basic information on the nature of atomic weapons and antiatomic defense. Maj. General B. A. Olisov is the editor. The 10 chapters of the book are as follows: Chapter 1. Structure of matter and atomic energy; Chapter 2. Atomic weapons; Chapter 3. Shock wave during nuclear explosions; Chapter 4. Emission of light during atomic explosions; Chapter 5. Penetrating radiation; Chapter 6. Radioactive contamination of the terrain; Chapter 7. Antiatomic defense of the troops; Chapter 8. Design of shelters; Chapter 9. Radiation reconnaissance and dosimetry; Chapter 10. Military operation on contaminated terrain. A Polish translation of

Card 1/2

this book was made in 1959: Głuszko, A. P., L. K. Markov,
and L. P. Pilugin. Broń atomowa i obrona przeciwatomowa.
Warsaw, Wyd-wo M-wa obrony narodowej. 1959, 257 p.

Card 2/2

[61]
Grgin, A.

On Some Measures of Chemical, Biological, and Radiological
Protection of Troops in Battle

Vojni glasnik, no. 13(5), 1959, 36-45

Although it is impossible to foresee where and when an enemy
will use ABC weapons, it is, however, possible to anticipate
their employment. Keeping this in mind, commanders should
automatically take preliminary precautions in anticipation
of hostile action. Such countermeasures should be applied
to fit tactical developments, and be concurrent with the
efforts of the hostile forces.

Card 1/1

[63]

Gromozdov, G. G.

Bacteriological Weapons and Countermeasures

Voyenno-meditsinskiy zhurnal, no. 1, 1961, 92-93

The author reviews L. A. Belikov's book (Bacteriological weapons and countermeasures. Moskva, Voenizdat, 1960. 197 p.) [see AID Work Assignment No. 47, bibliography number 25]. In the reviewer's opinion this monograph is of some value, in spite of such shortcomings as the inclusion of too much historical material and technical data.

Card 1/1

[64]

Guseva, N. G., ed.

Handbook of Radiochemical and Dosimetric Methods

Moskva, Medgiz, 1959, 460 p.

The purpose of this book is to provide a working reference for physicists, chemists, public health physicians, and other specialists concerned with problems of sanitation and dosimetry. The authors review the following topics: 1) The organizational principles of sanitation and dosimetric control in laboratories and establishments handling radioactive substances; 2) Radiochemical and chemical determinations of radioactive compounds in air and water samples, sewage, food-stuffs, and soil; 3) Methods for the physical determination of radioactive contamination of the atmosphere with gases and aerosols, and the contamination assay of working space, clothing, and skin; 4) Measurements of external x- and γ -ray

Card 1/2

flux, and methods of individual dosimetric control; and
5) Absolute and relative determinations of radioactivity
in solids and liquids. The appendix supplies information
on the calculation of dosages during the combined action
of ionizing rays; information on dosimetric and radio-
activity units; data on the content of radioactive potas-
sium in food products; and rules in handling of radioactive
compounds. No data are given on the measurement of neutrons,
high-energy gamma-quanta, high-energy nucleons, and γ -rays.

Card 2/2

[67]

Idel'chik, Kh. I.

Landmarks in the Development of Soviet Microbiology,
Epidemiology, and Parasitology

Sovetskoye zdravookhraneniye. 20(9), 53-70, 1961

The author, recognizing the futility of an attempt to condense
into a single article the history of several disciplines,
nevertheless is able to distinguish several periods in the
development of these disciplines: 1) the years 1918-20,
characterized by intensive work to combat various epidemics;
2) the decades between 1921 to 1940, mainly a period of the
systematic development of sanitation, preventive epidemiology,
research efforts, and facilities; 3) the period of World War
II (1941-45), during which all efforts were directed toward

Card 1/2

the prevention of epidemics and to the treatment of traumas; and 4) the postwar period, characterized by the acceleration and widening in scope of basic and applied research.

Card 2/2

[77]

Kalacheva, N. F.

Vaccination Reaction in Man to Concomitant Inoculation With Live Tularemia and Plague Vaccines

Zhurnal mikrobiologii, epidemiologii i immunobiologii, 31(4): 64-66, 1960

Sixty volunteers with the negative tularin reaction underwent concomitant cutaneous inoculations with live tularemia and plague vaccines; the controls were inoculated only with the corresponding monovalent vaccines. Members of the test group did not suffer from severe generalized or local post-vaccination reactions, although in three cases the inoculations were negative.

Card 1/1

[79]

Kalitina, T. A.

An Experiment in the Employment of the Complement-Fixation Reaction for Quantitative Determination of Botulinus Antigen in Type-A Anatoxins

Zhurnal mikrobiologii, epidemiologii i immunobiologii 32(5): 115, 1961

The complement-fixation reaction was modified by reducing the number of erythrocytes per unit volume. Of the series of eight type-A anatoxins tested serologically and biologically, no antigens were detected in two; however, in the remaining six series, containing 50 to 1000 erythrocytes, the modified method revealed the presence of the antigen in dilutions of 1:1200 to 1:10000. It is concluded that the serological test is more sensitive than the antitoxin fixation reaction.

Card 1/1

[86]

Kharina, N. P.

A Method of Increasing the Sensitivity of the Serological Agglutination Reaction for Brucellosis in Vitro

Zhurnal mikrobiologii, epidemiologii i immunobiologii 31(9): 109-113, 1960

Attenuated live brucella culture was used as an antigen to increase the sensitivity of the serological brucellosis reaction in vitro; the reactions with killed brucella antigen served as controls. Wright's method was used in both series of tests. As compared with the controls, the agglutination reaction with live brucella culture was twice as sensitive.

Card 1/1

[91]

Kiktenko, V. S., et al

Device for the Automatic Counting of Bacterial Aerosol Particles

Laboratornoye delo, v. 7, no. 10, 1961, 57-60

A device for the automatic counting of bacterial aerosol particles passing through the tube of a VDK flow ultra-microscope has been designed by the authors. The magnitude of a light beam scattered by a particle is sufficient to be counted by means of FEU-19 or FEU-25 photomultipliers. The observations have shown that the duration of a scattered light impulse does not exceed 0.5-0.6 seconds, while its frequency depends on the particulate concentration and consists usually of 300-400 impulses per min. The following component parts were used: photoelectronic attachment, the

Card 1/2

impulse counter and amplifier, and a power source. The authors state that the device is highly accurate and efficient.

Card 2/2

[96]

Kishko, Ya. G.

Bacteriological Assay of Clouds and Air Masses of Different Origin

Zhurnal mikrobiologii, epidemiologii i immunobiologii
31(12):90-94, 1960

During March and September of 1958 high-altitude air samples were collected in the vicinity of L'vov, USSR. A total of 1096 samples were taken from an aircraft during 12 night and 13 daylight flights. The analysis performed indicated the presence of urban microflora up to an altitude of 4000 m only. Bacteriologically, the upper atmospheric layers were characterized by a high concentrations of microorganisms in the warm continental air masses and stratocumulus clouds; there concentrations were low in polar air masses, in sea air

Card 1/2

currents of temperate latitudes, and in stratiform clouds. No evidence was found of anaerobes, thermophils, and hemolytic cocci participation in the formation of bacteriological flora of the upper atmospheric layers.

Card 2/2

[98]

Kishko, Ya. G.

A Universal Apparatus for Detection in the Air of Micro-organisms, Gaseous Impurities, and Dust

Meditsinskaya promyshlennost', 14(11):54-57 Nov. 1961

It is possible to simultaneously assay bacterial, gaseous, and particulate air pollutants by using a battery-powered apparatus designed by the author. The device is subdivided into three separate units: bacteria, gas, and dust detectors. No new principles were used in the design of each unit, although modifications were made to insure operating reliability of each unit under different conditions.

Card 1/1

[99]

Klajich, L.

Combat Application of CBR Weapons

Vojno delo, no 7/8, 1959, 400-416

The following aspects of CBR warfare are discussed by the author: delivery, systems, efficacy of CBR weapons, and tactical employment of CBR agents. The author tends to conclude that the employment of a single weapons system will not in itself produce decisive results, but that a coordinated application of all weapons would have a favorable effect on the outcome of military operations.

Card 1/1

[104]

Konupka, F.

Biological Warfare

Prague, Nase Vojsko, 1958, 171 p.

This monograph consists of five chapters: 1) Biological warfare and its history; 2) Biological warfare and means of waging it; 3) Use of biological weapons; 4) Protection against the effect of biological weapons; and 5) Conclusions. Ch. 2. mentions following the agents, which are considered to be potential weapons of the Western powers: cholera, tsutsugamushi fever, mumps, typhoid fever, and paratyphoid.

Card 1/1

[105]

Kozolev, P. A., and Ye. G. Konstant

Peroral Immunization With Live Brucellosis Vaccine

Zhurnal mikrobiologii, epidemiologii i immunobiologii
31(10):103, 1960

Mice and guinea pigs, after peroral immunization with live brucellosis vaccine, underwent periodic examination for a six-month period. Wright's reaction became positive six days following vaccination and persisted for 2 months thereafter; the agglutination was well expressed (++++ and +++), although the titers were low (from 1:20 to 1:160).

Card 1/1

[108]

Kozel'ko, O. A.

Application of the Phage Titer Increase Method in the Qualitative Control of Disinfection Effects in the Foci of Typhoid Fever and Dysentery

Zhurnal mikrobiologii, epidemiologii i immunobiologii
31(2):36-39, 1961

A total of 56 typhoid fever and dysentery foci were assayed by means of the phage titer increase method. Analysis of the washings obtained on the infected premises after disinfection with 1% hyposulfite solution revealed the presence of pathogenic organisms in 18.9% of the samples, while before disinfection positive identification was made in 27.6% of the washings. It is concluded that the method of increased phage titers is a specific test for rapid detection of dysentery and typhoid fever.

Card 1/1

[113]

Labezov, G. I., and G. G. Gromozdov

Problems of Bacteriological Defense

Voyenno-meditsinskiy zhurnal, no. 6, 1961, 86-88

The authors review the book "Problems of bacteriological defense," edited by professor P. F. Zdrodovskiy and published by Medgiz, in Moscow, 1960. The book consists of five chapters: history of bacteriological warfare, data on bacteriological weapons, problems of mass producing biological agents, principles of the selection of bacteriological weapons and possible agents, and countermeasures. The reviewers are of the opinion that the book is a valuable addition to the literature on biological warfare.

Card 1/1

[115]

Lagert, I. K., and V. N. Speranskaya

The Bacteriacidal and Insecticidal Effect of Combined Freon Aerosols

Voyenno-meditsinskiy zhurnal, no. 8, 1960, 66-68.

Flies and fleas exposed to freon aerosols containing dichloroamine and DDT perished within 25 and 35 minutes respectively, while the insect-carried microorganism died within approximately 10 minutes. It is concluded that the combined aerosol method could be used to effect the simultaneous death of microorganisms and insects.

Card 1/1

[116]

Larionov, L. V.

Chemical Weapons

Znaniye-sila, v. 35, no. 5, 1960, 18-19

Radiation and surgical cancer therapy is frequently of no avail. It is suggested that chemotherapy is more promising in cancer treatment as shown in experiments with nitrogen mustards, purine, and pyrimidine-type compounds.

Card 1/1

[121]

Levira, L. A.

Effect of Diphtheria Toxin on the Local Inflammatory Reaction.
Communication II. The Mechanism of Local Action of Toxins

Zhurnal mikrobiologii, epidemiologii i immunobiologii
31(1):131-136, 1960

Guinea pigs received dermal inoculation dosages of 4×10^{-5} ml of diphtheria toxin. In addition, diphtheria toxin was injected in combination with nontoxinogenic diphtheria bacteria or physiological solution (pH 6.8 to 7.2). During dermal injection of diphtherial bacteria the diphtherial endotoxin caused an onset of leucocytic infiltration, while the diphtherial exotoxin caused a necrotization of tissues and leucocytes at the site of inoculation.

Card 1/2

The necrotizing effect of exotoxin on the leucocytic infiltrate enhanced the inflammatory reaction. It is concluded that the pathogenic effects of diphtherial microbes could be assayed by the substitution of diphtherial inoculum with the endo- or exotoxic fraction of the latter.

Card 2/2