

Chemical Corps Research and Development Command  
 CHEMICAL WARFARE LABORATORIES  
 Army Chemical Center  
 Maryland

QUARTERLY HISTORICAL REPORT  
 1 APRIL TO 30 JUNE 1956 (U)

August 1956

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 CMLHO-194

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B. (S) Directorate of Medical Research.

1. (S) Technical Reports.

The following technical reports were distributed during the report period:

<u>Report No.</u>	<u>Author(s)</u>	<u>Title</u>	<u>Date</u>
CWLR 2042	Arthur J. Dziemian Stanley C. Benbrook Ward R. Richter	Wound Ballistics Field Tests of the 75 mm. Canister, T30E16 (U)	27 Jun 56
CWLR 2043	Emil A. Pfitzer Earle A. Greene Paul P. Yevich Keith H. Jacobson	The Acute Toxicity of Vapors From a Red Fuming Nitric Acid-Hydrofluoric Acid Mixture (U)	23 Jul 56
CWLR 2045	Leo Feinsilver Joseph A. Perregrino Courtney J. Smith, Jr.	Estimation of Hydrazine and Three of Its Methyl Derivatives (U)	11 Jul 56
CWLR 2047	J. Palmer Saunders G. Groblewski	Detoxication of EA 1517 and EA 1701 in Rabbits (C)	23 Jul 56
CWLR 2049	John P. Hickcox	Lethality Studies on Cadmium-Filled Shaped Charges (S)	23 Jul 56
CWLR 2051	V. Alexander Gordieyeff	Adsorption of Vapors on Solid Aerosols (Dusts) (U)	17 Aug 56
CWLR 2052	V. Alexander Gordieyeff	Absorption of Vapors by Liquid Aerosols (U)	17 Aug 56
CWLR 2053	V. Alexander Gordieyeff	Toxicity of Vapors in the Presence of Aerosol Carriers (U)	17 Aug 56
CWLR 2060	F. N. Craig	Protection and Capability for Combat (U)	31 Aug 56
CWLR 2061	V. Alexander Gordieyeff	Physicochemical Aspects of Toxic Action (U)	31 Aug 56
CWLR 2062	Francis N. Marzulli	Penetration of Toxic Compounds Through Skin (U)	31 Aug 56
CWLR 2064	R. V. Brown Anne M. Kunkel Lea M. Somers J. H. Wills	The Therapeutic Effectiveness of Pyridine-2-Aldoxime Methiodide (PAM-2) on the Treatment of Poisoning With GA, GB, EA 1517, or EA 1701 in Dogs and Cats (U)	31 Aug 56

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<u>Report No.</u>	<u>Author(s)</u>	<u>Title</u>	<u>Date</u>
CWLR 2065	Eugene H. Krackow	Toxicity of V Agents (U)	6 Sep 56
CWLR 2066	R. V. Brown Anne M. Kunkel Lea M. Somers J. H. Wills	The Pharmacology of EA 1517 and EA 1701 in Dogs and Cats (U)	7 Sep 56
CWLR 2067	J. H. Wills	Drug Efficiency in Treating Anticholinesterase Poisonings (U)	7 Sep 56
CWLR 2068	Gabrielle Asset Martin A. Ross Stella Ryan	Effects of Inhalation of Aerosols of Three Engine Oils (U)	11 Oct 56
CWLR 2069	L. Dultz M. A. Epstein G. Freeman E. H. Gray W. B. Weil	Studies on a Group of Oximes as Chemotherapeutic Compounds in Sarin Poisoning (U)	14 Sep 56
CWLR 2070	Ellis J. Robinson Matthew J. Wargovich	Evaluation of the Anti- personnel Effectiveness of Several Incendiary Agents (U)	11 Oct 56
CWLR 2071	Van M. Sim	Psychochemical Agents (C)	14 Sep 56
CWLR 2073	Janes O. Elam	The Respiratory Management of Severe Nerve Gas Casualties (U)	18 Sep 56
CWLR 2076	George M. Stewart	A Helium Gun for Propelling Various Shaped and Weighted Missiles (U)	16 Nov 56
CWLR 2077	John P. Hickcox Bernard J. Brown	The Use of Atropine for Therapy of Animals Wounded by a Toxic Bullet Containing TL 1217 (S)	29 Nov 56
CWLR 2080	Martin A. Ross Keith H. Jacobson	Studies on the Toxicity of Pentaborane Exhaust (U)	26 Nov 56

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## 2. (U) Papers for Publication and/or Presentation.

The following papers were cleared during the report period for publication and/or presentation:

<u>Author(s)</u>	<u>Title</u>	<u>Proposed Use</u>
F. W. Light, Jr.	Some Aspects of the Pathology of Wounding by the Mk. II Grenade and by Single Fragments, as Observed in Goats	United States Armed Forces Medical Journal
Leigh E. Chadwick	Progress in Physiological Studies of Insecticide Resistance	To be circulated by World Health Organization to members of the Expert Committee on Insecticides, Geneva, Switzerland
F. W. Light, Jr.	CWLR 2003 - The Effect of Fragment Pattern and Target Shape on Vulnerability	Distribution outside Dept of Defense
Edited by J. H. Wills	MLSR 72 - Conference on Human Pharmacodynamics of CW Compounds	Distribution outside Dept of Defense
James F. Case	The Median Nerves and Cockroach Respiration	Journal of Experimental Zoology
Arthur L. Humphries, Jr.	Renal Homotransplantation in Goats	Transplantation Bulletin
Charles C. Hassett	Insect Control by Radiation	Oral: Tenth International Congress of Entomology, McGill Univ, Montreal, Canada, 17-25 August 1956; Science
Charles G. Wilber	Physiological Regulations and the Origin of Human Types	Oral: Symposium on Human Ecology, Ecological Society of America, Univ of Conn, Storrs, Conn.
J. P. Saunders Harry Krueger	A Rapid Method for Counting T. <u>confusum</u> Larvae	Journal of Economic Entomology

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<u>Author(s)</u>	<u>Title</u>	<u>Proposed Use</u>
Philip F. Wagley	A Study of End-Plate Potentials, I. Observations of an Effect by Histamine	Johns Hopkins Bulletin
R. V. Brown Anne M. Kunkel Lea M. Somers J. H. Wills	Pyridine-2-aldoxime Methiodide in the Treatment of Poisoning by Sarin or Tabun, with Notes on Its Pharmacology	Journal of Pharma- cology and Experi- mental Therapeutics
L. Dultz M. Epstein G. Freeman E. Gray W. Weil	Studies on a Group of Oximes as Chemotherapeutic Compounds in Sarin Poisoning	Journal of Pharma- cology and Experi- mental Therapeutics
J. H. Weatherby Herbert McKennis (Med Coll of Va)	Changes in Blood and Spinal Fluid Ammonia Following Hydrazine and Several of Its Derivatives	Journal of Pharma- cology and Experi- mental Therapeutics
J. A. Pankevicius Catherine E. Wilson Jane F. Farber	The Debatable Role of a Pleuropneumonia-like Organism in the Etiology of Chronic Pneumonia in Rats	American Journal of Veterinary Research
H. Schriftman A. A. Kondritzer	Analysis of Atropine and Its Hydrolytic Products by Filter Paper Chromatography	Journal American Pharmaceutical Association, Scientific Edition
G. B. Craig, Jr. W. R. Horsfall	Taxonomic and Ecological Significance of Eggs of Aedine Mosquitoes	Oral: Tenth Inter- national Congress of Entomology, Montreal, Canada; 17-25 August 1956; Proceedings of the Tenth International Congress of Entomology
J. A. Clements	Surface Tension of Lung Extracts	Science
David Grob Richard J. Johns A. M. Harvey (Johns Hopkins Hosp and Dir of Med Res)	Studies in Neurovascular Function, Parts I-VI	Bulletin of The Johns Hopkins Hospital

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<u>Author(s)</u>	<u>Title</u>	<u>Proposed Use</u>
J. A. Clements	Dependence of Pressure-Volume Characteristics of Lung on Intrinsic Surface-Active Material	Oral: American Physiological Society, Rochester, N.Y., 4-7 Sep 1956
Herbert Schriftman Albert A. Kondritzer	Absorption of Atropine from Muscle	Oral: American Physiological Society, Rochester, N.Y., 4-7 Sep 1956
Richard Lindenberg Ella Freytag (Div of Legal Med, Univ of Md, and State Dept of Mental Hygiene)	Morphology of Cortical Contusions	A.M.A. Archives of Pathology
J. R. M. Innes E. J. Donati M. A. Ross et al.	Establishment of a Rat Colony Free From Chronic Murine Pneumonia	The Cornell Veterinarian
Joel R. Siegel David H. Rosenblatt Albert A. Kondritzer	Formation of Thiocyanate Ion Through Neighboring Group Displacement Reactions	Journal of the American Chemical Society
David G. Greene Robert O. Bawer Clinton P. Janney James O. Elan (Univ of Buffalo, Roswell Park Memorial Institute)	Crossed Ventilation in Apneic Patients. I. Blood Gas Changes; Crossed Ventilation in Apneic Patients. II. Respiratory Patterns With Various Donors, Respiratory Rates and Tidal Volumes	American Journal of Physiology
Armand J. Gold John M. Weller Gustave Freeman	Metabolic and Acid-Base Changes Following Acute Cholinesterase Inhibition	American Journal of Physiology
Leonard S. Rubin	Manual Dexterity of the Gloved and Bare Hand as a Function of the Ambient Temperature and Duration of Exposure	Journal of Applied Psychology
Bertran Sacktor	The Cytochrome System-Oxidation and Phosphorylation in Insects	Oral: Symposium on Insect Biochemistry, Annual Meeting of ACS, Atlantic City, N.J., 16-21 Sep 1956

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<u>Author(s)</u>	<u>Title</u>	<u>Proposed Use</u>
Bertran Sacktor Donald G. Cochran	Dephosphorylation of Nucleotides by Insect Flight Muscle	Oral: Entomological Society of America, New York City, Dec 1956; Journal of Biological Chemistry
Henry J. Horn Robert J. Weir William H. Reese (Hazleton Labs)	Inhalation Toxicology of Methylacetylene	A.M.A. Archives of Industrial Health
D. H. Rosenblatt F. F. Caserio, Jr.	Calculation of Partition Coefficients from Analyses on One Phase	Analytical Chemistry
G. Stanley Woodson	Testing the Statistical Hypothesis that Two Normal Distributions Have Differing Means When the Variances of the Distributions are Unknown	Thesis, Univ of Denver, Denver, Colo
V. A. Gordieyeff	Studies on Dispersion of Solids as Dust Aerosols	Archives of Industrial Health
R. S. Berger A. E. Jacobson A. A. Kondritzer	p-Fluorotropic Acid and p-Fluoroatropine	The Journal of Organic Chemistry
I. H. Blank R. D. Griesemer Edith Gould (Mass Gen Hosp)	Study of the Effects of Application of Anticholinesterase to Human Skin (Progress Report No. 5)	Discussion at technical conferences
I. H. Blank R. D. Griesemer Edith Gould Patricia Mason (Mass Gen Hosp)	Study of the Effects of Application of Anticholinesterase to Human Skin (Progress Report No. 6)	Discussion at technical conferences
Janes F. Case	Spontaneous Activity in Denervated Insect Muscle	Science
A. S. Yard H. McKennis J. H. Weatherby (Med Coll of Va)	Further Studies on the Effect of Acylation on the Biological Activity of Hydrazine Compounds	Oral: American Society for Pharmacology & Experimental Therapeutics, Louisville, Ky., 22 Oct 1956

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<u>Author(s)</u>	<u>Title</u>	<u>Proposed Use</u>
Keith H. Jacobson	Industrial Toxicology	Research Reviews (publication of Off of Naval Res)
Arnold E. Reif et al. (Lovelace Foundation)	MLCR 51 - A Study of the Mechanism of Particulates in the Respiratory Tree	Journal not yet selected
Earl Davy	Positioning of Hand Grip Controls	Journal of Applied Psychology
Joseph A. Faucher George M. McManns Hans J. Trornit	A Simplified Treatment of Ellipsometry	Journal of the Optical Society of America
Charles G. Wilber	Water Requirements of Man	U.S. Armed Forces Medical Journal
C. L. Punte E. J. Owens	The Effect of Antifoaming Compounds on Mortality and Pulmonary Edema Due to Pulmonary Irritants	A.M.A. Archives of Industrial Health
Francis N. Marzulli John F. Callahan	The Capacity of Certain Common Laboratory Animals to Sweat	Science
J. F. O'Leary J. H. Wills B. Harrison A. Oikemms	Some Effects of N-Nitrosodi- methylanine on Rabbit Kidney Function	Journal of Pharma- cology and Experi- mental Therapeutics
Donald H. Yost	The Principal Diseases of the Laboratory Goat	Oral: Course on Pathology of Diseases of Laboratory Animals, Armed Forces Inst of Pathology, Walter Reed Army Medical Center, 14 Dec 1956
George J. Levinskas Marian R. Paslian Walter R. Bleckmann (Univ of Pittsburgh)	Chronic Toxicity of Penta- borane Vapor (ABSTRACT)	Abstracts of Indus- trial Health Conf for April 1957
J. H. Holmes M. M. Hein (Univ of Colorado)	Studies on the Administration of Atropine in Humans (ABSTRACT)	Oral: Central Society for Clinical Investigation, Chicago, Illinois, 10-12 Nov 1956

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<u>Author(s)</u>	<u>Title</u>	<u>Proposed Use</u>
Joseph H. Holmes Maurice Gaon (Univ of Colorado and Rocky Mt Arsenal)	Observations on Exposure to Nerve Gas and Anticholin- esterase Insecticides (ABSTRACT)	Oral: American Clinical and Climatological Society, Skytop, Pa., 1-3 Nov 1956
A. D. Bergner	Histochemical Demonstration of the Effect of Nerve Section on Cholinesterase Activity at Motor Endplates in the Gastro- cnemium Muscle of the Guinea Pig	British Journal of Experimental Pathology
Charles C. Hassett	Current Research in Entomology at Army Chemical Center	Oral: Entomological Society of America, Eastern Br., Atlantic City, N.J., 19 Nov 1956; Armed Forces Chemical Journal
Albert A. Kondritzer Peter Zvirblis	Stability of Atropine Solution	Journal of the American Pharma- ceutical Association, Scientific edition
J. H. Willis Anne M. Kunkel R. V. Brown G. E. Groblewski	Pyridine-2-Aldoxime Methiodide in the Treatment of Anticholinesterase Poisoning	Science
Bernice L. Harrison Anrora V. Bransford	The Effect of Some Substituted Thioureas on the Inhibitory Action of ANTU ( $\alpha$ -naphthyl- thiourea) on Tyrosinase Activity <u>in vitro</u>	Journal of Biological Chemistry
C. L. Punte	Note on Paper entitled "Hazards Associated With 90 Per Cent Hydrogen Peroxide Aerosols"	Jet Propulsion
R. Eisenstein W. A. Groff	Experimental Hypervitaminosis D: Hypercalcemia, Hypermuco- proteinemia, and Extrasosseous Calcification	A.M.A. Archives of Pathology
William H. Hill (Univ of Pittsburgh)	Analysis of Biological Materials for Boron (ABSTRACT)	Abstracts of Indus- trial Health Conf for April 1957

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D. B. Dill	The Regulation of Hemoglobin Concentration (ABSTRACT)	Oral: Aero Medical Association Meeting, Denver, Colorado, 6 May 1957
S. M. Cain	A Comparison Between the Breaking Point of Two Breath Holds Separated by a Single Inspiration	Journal of Applied Physiology
Joseph H. Holmes Maurice Gaon (Univ of Colorado and Rocky Mt Arsenal)	Observation on Exposure to Anticholinesterase Agents (ABSTRACT)	Oral: Aero Medical Association Meeting, Denver, Colorado, 6 May 1957
J. H. Wills R. V. Brown	The Pharmacology of Nerve Gas Poisoning	Armed Forces Chemical Journal
R. P. Johnson A. J. Gold G. Freeman	A Comparison of Respiratory Resistance and Cardio-vascular Effects of Fatal Parathion and Sarin Intoxication in Dogs and Monkeys	American Journal of Physiology
Dietrich Bodenstein	Studies on Nerve Regeneration in <u>Periplaneta americana</u>	Journal of Experimental Zoology
Robert V. Brown Anne M. Kunkel Lea M. Somers J. Henry Wills	Pyridine-2-Aldoxime Methiodide as an Effective Adjunct to Atropine in the Treatment of Sarin and Tabun Poisoning (ABSTRACT)	Federation Proceedings
J. H. Wills S. C. Kalser C. F. Epes J. D. Gabourel	Further Studies of Urinary Excretory Products of Atropine (ABSTRACT)	Federation Proceedings
John F. O'Leary Aili H. Oikemus Lawrence J. Edberg	Acetylation of Hydrazine and Its Relation to Hydrazine Lethality (ABSTRACT)	Federation Proceedings
Sarah C. Kalser	Urinary Metabolites of Atropine as a Function of Dosage (ABSTRACT)	Federation Proceedings

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<u>Author (s)</u>	<u>Title</u>	<u>Proposed Use</u>
J. A. Clements E. S. Brown R. P. Johnson (introduced by D. B. Dill)	Alveolar Surface Tension (ABSTRACT)	Oral: American Physiological Society, Chicago, Illinois, 15-19 April 1957
Gabrielle Asset	Effect of Particle Size and Wind Speed on Nasal Penetration of Windborne Particles in Experimental Animals	A.M.A. Archives of Industrial Health
Bruno Papirmeister Sidney A. Parsons Roger M. Herrriott (Johns Hopkins Univ)	Effects of Mustard Gas on T <sub>2</sub> Bacteriophage (ABSTRACT)	Oral: American Society of Biological Chemists, Chicago, Illinois, 15-19 April 1957
Charles G. Wilber Roger A. Morrison	Sarin and Lactation in Goats	Proceedings of the Society for Experi- mental Biology and Medicine
William H. Hill Jean M. Merrill H. Larsen David L. Hill James F. Heacock (Univ of Pittsburgh and Dir of Med Res)	Colorimetric Determination of Boron Hydrides by Means of Phosphomolybdic Acid	Analytical Chemistry
Paul F. Robinson	Letter to the Editor of the Journal of the American Veterinary Medical Association	Journal of the American Veterinary Medical Association
R. S. Anderson F. W. Stemler R. F. McHugh E. B. Rogers	Some Blood and Circulatory Changes in Injured Goats (ABSTRACT)	Oral: Meeting of Federation of American Societies for Exper- imental Biology, Chicago, Illinois, 15-19 April 1957
R. W. Gillette A. R. Mansberger, Jr. J. H. Oppenheimer B. F. Caldwell E. G. Neff	Paper Electrophoretic Studies of the Serum Proteins in Ex- perimental Shock Induced by Massive Soft Tissue Wounds (ABSTRACT)	Oral: Meeting of Federation of American Societies for Exper- imental Biology, Chicago, Illinois, 15-19 April 1957

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<u>Author(s)</u>	<u>Title</u>	<u>Proposed Use</u>
J. H. Oppenheimer H. M. Wise R. W. Gillette H. G. Holmes	The Effect of Thyroidal Status on the Survival of Goats Subjected to Massive Wounding (ABSTRACT)	Oral: Meeting of Federation of American Societies for Experi- mental Biology, Chicago, Illinois, 15-19 April 1957; Federation Proceedings

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