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SEVERAL JOURNALISTS HAVE REPORTED OBSERVING CHEMICAL ATTACKS OR THE VICTIMS OF SUCH ATTACKS. WE ASSUME THE UN IS AWARE OF THE ARTICLES THAT HAVE BEEN WRITTEN, AND MANY OF THE NAMES OF JOURNALISTS AND THEIR ARTICLES WERE INCLUDED IN PREVIOUS U.S. SUBMISSIONS TO THE UN.

WITH RESPECT TO THE CYLINDERS (1.5 METERS LONG, 60 CENTIMETERS IN DIAMETER) THAT WERE USED IN SEPTEMBER 1981 IN AFGHANISTAN (PAGE 16 OF THE U.S. MARCH 22, 1982 REPORT), THEY WERE DROPPED FROM HELICOPTERS AND EXPLODED 4-5 METERS ABOVE THE GROUND. NO PARACHUTES WERE MENTIONED IN THE DEBRIEFING. WE HAVE RARELY HEARD ABOUT PARACHUTES BEING ATTACHED TO ANY CW MUNITIONS. IN 1980 IN AFGHANISTAN, SEVERAL JOURNALISTS REPORTED THAT PARACHUTES WERE USED TO DROP "FIRESTICKS", SMALL TUBULAR DEVICES WHICH WERE IGNITED AND GAVE OFF A NOXIOUS GAS.

A REVIEW OF ALL EVIDENCE INDICATES THAT SEVERAL DIFFERENT TYPES OF CANISTERS HAVE BEEN USED IN AFGHANISTAN. AFGHAN AND SOVIET DEFECTORS HAVE DESCRIBED VARIOUS AGENTS AVAILABLE WHICH HAVE A RANGE OF LETHALITY AND PRODUCE DIFFERENT SYMPTOMS. THE FORMER AFGHAN MI-8 PILOT, WHO STATED THAT THE CANISTERS WERE PUSHED FROM THE CARGO COMPARTMENT OF HELICOPTERS, IS NOT UNDER THE JURISDICTION OF THE U.S. HIS DESCRIPTION OF THE TWO TYPES OF GASES USED BY THE SOVIETS CORROBORATES REPORTS FROM OTHER

DEFECTORS, EYEWITNESS ACCOUNTS FROM MEMBERS OF THE RESISTANCE, AND MORE RECENTLY A SOVIET SOLDIER WHO DEFECTED.

CONCERNING THE EXPERTS REQUEST FOR DATA ON THE EFFECTS OF INHALATION OF TRICHOCECENES, PRELIMINARY STUDIES ARE IN PROCESS IN THE UNITED STATES BUT TESTING HAS NOT BEEN COMPLETED. AS POINTED OUT IN OUR EARLIER SUBMISSION MOST OF THE DATA CONCERNING THE TOXICOLOGICAL EFFECTS OF THE TRICHOCECENES ARE DERIVED FROM ANIMAL DATA IN WHICH PURE COMPOUNDS WERE ADMINISTERED BY ORAL, SUBCUTANEOUS, INTRAPERITONEAL, OR INTRAVENOUS MEANS.

IN RESPONSE TO THE GROUP OF EXPERTS REQUEST FOR MORE DETAILS ON THE ATTACKS THAT ARE LISTED IN THE U.S. SUBMISSION, WE WOULD POINT OUT THAT THE INFORMATION REQUESTED IS ALREADY IN THE U.S. REPORT AND REFER YOU SPECIFICALLY TO PAGES 8 THROUGH 13, 14 THROUGH 17 AND 19 THROUGH 21. TWO RECENT REPORTS PROVIDED TO THE UN BY THE GOVERNMENT OF CANADA ALSO PROVIDE FURTHER DETAILS OF ATTACKS IN BOTH LAOS AND KAMPUCHEA. VERY FEW REPORTS INCLUDE ALL THE DETAILS THE EXPERTS HAVE LISTED IN THEIR REQUEST.

THE UNITED STATES GOVERNMENT HAS COMPILED ALL THE INFORMATION ON CHEMICAL ATTACKS FOR 1982 AND IS PREPARING TABLES THAT PROVIDE MORE DETAILS ON ALL REPORTED ATTACKS FROM 1980 - 1982 FOR LAOS, KAMPUCHEA AND AFGHANISTAN. H'MONG REFUGEES ENTERING THAILAND HAVE REPORTED CHEMICAL ATTACKS IN EVERY MONTH FROM JANUARY-JUNE 1982. VICTIMS THAT WERE TREATED AT BAN VINAI IN MARCH-APRIL HAD FAR WORSE SKIN LESIONS THAN PREVIOUSLY OBSERVED. THE U.S. RECEIVED REPORTS OF ATTACKS IN KAMPUCHEA FROM FEBRUARY-JUNE 1982 AND ONE IN SEPTEMBER. REPORTS FROM AFGHANISTAN DESCRIBE CHEMICAL ATTACKS IN FEBRUARY, JUNE-JULY, AND SEPTEMBER 1982. ANALYSIS OF THE ABOVE INFORMATION IS CURRENTLY UNDERWAY AND WILL BE PROVIDED TO THE UN EXPERTS WHEN COMPLETED.

THE U.S. GOVERNMENT IS AWARE THAT MEDICAL RECORDS ON ALLEGED CW VICTIMS ARE MAINTAINED AT THE BAN VINAI REFUGEE CAMP. IT IS OUR UNDERSTANDING THAT PRIOR TO 1982, MANY OF THESE RECORDS WERE STOLEN BUT THAT CURRENT RECORDS ARE NOW MAINTAINED IN A MORE SECURE MANNER. THERE ARE ALSO

PHYSICIANS AT THIS CAMP WHO HAVE TREATED THESE VICTIMS WHO SHOULD BE AVAILABLE FOR INTERVIEW.

ATTACHMENT A IS A PRE-PRINT OF A PAPER TO BE PUBLISHED IN THE JOURNAL OF THE OFFICIAL ASSOCIATION OF ANALYTICAL YES.

CHEMISTS BY DR. S. WATSON, C. MIROCHA, AND A. HAYES. ATTACHMENT B IS A GALLEY-PROOF OF A PAPER BY ROSEN AND ROSEN, IN PRESS. ANOTHER PAPER BY WATSON, MIROCHA AND HAYES CONCERNING TOXICOLOGICAL ASPECTS OF THE MYCOTOXINS FOUND IN SOUTHEAST ASIA, NEW DATA ON TOXINS FROM VICTIMS, AND AUTOPSY RESULTS HAS BEEN ACCEPTED FOR PUBLICATION IN THE FEDERATION PROCEEDINGS, AND A PRE-PRINT OF THAT PAPER WILL BE PROVIDED LATER.

CONSIDERABLE INFORMATION IS AVAILABLE FROM THE 13 FEBRUARY 1982 ATTACK AT TUOL CHREY. ANNEX B OF THE REPORT FROM THE GOVERNMENT OF CANADA TITLED "AN EPIDEMIOLOGICAL INVESTIGATION OF ALLEGED CW/BW INCIDENTS IN SE ASIA" OUTLINES FURTHER INFORMATION ON THAT INCIDENT. THE BLOOD SAMPLE ANALYSES WHICH WERE PERFORMED BY DR. CHESTER MIROCHA, ATTACHMENT C, HAVE PREVIOUSLY BEEN PROVIDED TO THE EXPERTS GROUP. TISSUES TAKEN AT AUTOPSY FROM A VICTIM (CHAN MANN) OF THAT ATTACK WHO DIED ON MARCH 16, 1982 HAVE BEEN ANALYZED BY THE AMERICAN EXPERTS FOR PRESENCE OF MYCOTOXINS. ALL TISSUES ANALYZED, WITH THE EXCEPTION OF THE LIVER, CONTAINED HIGH LEVELS OF TRICHOCECENE TOXINS. THE CANADIAN GOVERNMENT AUTOPSY REPORT ON THE SAME VICTIM IS CONTAINED IN APPENDIX 3 TO ANNEX B OF THEIR EARLIER REFERENCED REPORT. AMPLIFICATION OF UNITED STATES FINDINGS, REPORTED IN ATTACHMENT A, IS PROVIDED BELOW.

ONE OF THE VICTIMS OF THE 13 FEBRUARY 1982 ATTACK DIED ON THE 16TH OF MARCH. THE VICTIM WAS REPORTED TO HAVE MADE A BRIEF RECOVERY ON MARCH 12 AND 13, BUT THIS WAS FOLLOWED BY A RELAPSE, WHEN HE BECAME ANURIC, FEVERISH, RESTLESS, AND SLIGHTLY JAUNDICED. ON THE 16TH OF MARCH HE LAPSED INTO A COMA AND DIED. A URINARY CATHETER WAS INSERTED APPROXIMATELY FOUR HOURS BEFORE DEATH, BUT ONLY MINIMAL BLOOD TINGED URINE WAS OBTAINED. SHORTLY BEFORE DEATH, THE VICTIM VOMITED BLOOD. AN AUTOPSY WAS PERFORMED. TISSUE SECTIONS OF HEART, ESOPHAGUS/STOMACH, LIVER, KIDNEY, LUNG AND LARGE INTESTINE WERE TAKEN AND FIXED IN FORMALDEHYDE.

A PORTION OF EACH TISSUE WAS SUBMITTED TO DR. MIROCHA FOR TRICHOCECENE ANALYSIS. TISSUE SAMPLES WERE HOMOGENIZED WITH 100 ML OF ACETONITRILE THREE TIMES AND FILTERED. THE COMBINED FILTRATE WAS EVAPORATED TO DRYNESS AND REDISSOLVED IN 10 ML OF METHANOL. TO THIS SOLUTION, 50 ML OF WATER WAS ADDED AND CONCENTRATED TO 20 ML. THIS PREPARATION WAS LOADED ON AN XAD-2 COLUMN, WASHED WITH 100 ML OF WATER AND ELUTED WITH 90 PERCENT METHANOL. THE METHANOL ELUATE WAS EVAPORATED DOWN FOR ANALYSIS. ALL SAMPLE EXTRACTS WERE ANALYZED FOR DAS, T2 TOXIN AND HTZ BY SELECTED ICM MONITORING OF THE CORRESPONDING TFA DERIVATIVES. PORTIONS OF EACH TISSUE SAMPLE WERE SUBMITTED TO DR. CHARLES STAHL, AN INTERNATIONALLY RESPECTED FORENSIC PATHOLOGIST AT THE UNIVERSITY OF TENNESSEE MEDICAL SCHOOL, FOR HISTOPATHOLOGICAL EXAMINATION. HIS DIAGNOSTIC FINDINGS, BASED ON GROSS AND MICROSCOPIC EXAMINATION WERE FOCAL INTRAMURAL HEMORRHAGE OF THE MYOCARDIUM; AUTOLYSIS OF THE STOMACH MUCOSA; MICROCYTIC ATROPHIC OF THE LIVER, AS WELL AS BILE DUCT PROLIFERATION; FOCAL BILE STASIS; CHOLEMIC NEPHROSIS IN THE KIDNEY WITH FOCAL HEMORRHAGE WITHIN THE SUBMUCOSA OF THE URETER; AND PULMONARY CONGESTION, EDEMA AND FOCAL MICROATELECTASIS OF THE LUNG. THE EPITHELIUM LINING THE BRONCHI SHOWED AUTOLYTIC AND DECOMPOSITION. TOXIN LEVELS FOUND IN THE SAMPLE ARE DESCRIBED IN TABLE 6 OF ATTACHMENT

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A. DR. MIROCHA'S FINDING HAVE RECENTLY BEEN CONFIRMED BY PARALLEL ANALYSES PERFORMED BY DR. JOSEPH ROSEN AT RUTGERS UNIVERSITY.

END OF NOTE.
DAM

SAMPLES OF THE STOMACH/ESOPHAGUS, LIVER, KIDNEY, AND LARGE INTESTINE WERE SUBMITTED TO DR. TIM PHILLIPS AT TEXAS A&M UNIVERSITY FOR ANALYSIS FOR AFLATOXIN. THE HIGH INCIDENCE OF AFLATOXIN CONTAMINATION OF FOOD IN SOUTHEAST ASIA HAS BEEN WELL DOCUMENTED. LINDERFELSER AND COWORKERS (1974) HAVE SHOWN THAT AFLATOXIN AND T2 TOXIN IN COMBINATION HAVE A SYNERGISTIC EFFECT. THEREFORE, IT WAS OF INTEREST TO DETERMINE THE EXTENT OF EXPOSURE OF THIS INDIVIDUAL TO AFLATOXIN.

THE TISSUE SAMPLES WERE EXTRACTED AND ANALYZED BY HIGH PRESSURE LIQUID CHROMATOGRAPHY (HPLC) ACCORDING TO THE METHOD OF SHEPHERD, ET AL (1982) EMPLOYING RADIAL COMPRESSION, NORMAL PHASE SEPARATION WITH CONCURRENT ULTRAVIOLET AND FLUORESCENT DETECTION.

ALL TISSUES TESTED WERE POSITIVE FOR AFLATOXIN B1. CONFIRMATION OF THESE RESULTS WAS OBTAINED BY AN INDEPENDENT REPLICATE HPLC ANALYSIS, AS WELL AS TLC ANALYSIS OF SAMPLES. IN TLC, SAMPLES B, C, D, AND F (TABLE 6, ATTACHMENT A) EXHIBITED A BLUE FLUORESCENT SPOT THAT MIGRATED THE SAME DISTANCE AS THE AUTHENTIC AFLATOXIN B1 STANDARD. THE PLATES WERE MISTED WITH TRIFLUOROACETIC ACID AND THE SUSPECTED B1 SPOTS INCREASED IN FLUORESCENT INTENSITY, INDICATING CONVERSION TO THE HEMIACETAL DERIVATIVE (B2A). PERCENTAGE RECOVERY OF THE HPLC METHOD WAS MONITORED USING TRITIUM-LABELED AFLATOXIN B1 SPIKED RAT LIVER HOMOGENATE. RECOVERY WAS CALCULATED TO BE 88 PERCENT UNDER THE EXPERIMENTAL CONDITIONS EMPLOYED. THE LEVELS OF AFLATOXIN DETECTED IN THE TISSUES WERE SO

HIGH THAT IT SEEMED PRUDENT TO INVESTIGATE THE POSSIBILITY THAT THE EXPOSURE WAS NOT DUE TO A NATURAL CONTAMINATION, BUT MAY HAVE BEEN RELATED TO THE CHEMICAL ATTACK. TO THIS END, PORTIONS OF THE SAMPLE OF YELLOW RAIN FROM LAOS THAT HAD PREVIOUSLY SHOWN TO CONTAIN 143 PPM OF T2 TOXIN AND 27 PPM OF DAS WERE SUBMITTED TO DR. MIROCHA AND DR. PHILLIPS FOR ANALYSIS FOR AFLATOXIN B1. INDEPENDENT THIN LAYER CHROMATOGRAPHY AND HPLC ANALYSES WERE NEGATIVE FOR AFLATOXIN, SUPPORTING A HYPOTHESIS THAT THIS TOXIN IS NOT ALWAYS A COMPONENT OF YELLOW RAIN SAMPLE AND THAT THE VICTIM'S EXPOSURE TO AFLATOXIN MAY HAVE BEEN DUE TO CONTAMINATION OF THE FOOD SOURCE. IT DOES NOT, HOWEVER, RULE OUT THE POSSIBILITY THAT AFLATOXIN IS A COMPONENT OF SOME "YELLOW RAIN" CW ATTACKS. THE HIGH INCIDENCE OF EXPOSURE TO NATURAL OUTBREAKS OF AFLATOXIN CONTAMINATION IN SOUTHEAST ASIA MAY INDUCE A GREATER RESPONSE TO TRICHOCEGENE EXPOSURE IN THIS POPULATION.

THE EXPERTS WHO PERFORMED THESE ANALYSES, DOCTORS MIROCHA, STAHL AND PHILLIPS CAN ALL BE CONTACTED BY THE EXPERTS GROUP FOR FURTHER AMPLIFICATION OF THEIR FINDINGS. WE HAVE EVERY REASON TO BELIEVE THAT THESE INDIVIDUALS WOULD BE PREPARED TO RECEIVE THE UN EXPERTS AT THEIR LABORATORIES.

IN CLOSING, PUBLICITY SURROUNDING THE 22 MARCH REPORT NO. 98 OF THE UNITED STATES ON "CHEMICAL WARFARE IN SOUTHEAST ASIA AND AFGHANISTAN" HAS RESULTED IN ENGENDERING MANY QUESTIONS, ALTHOUGH SOME OF THE ANSWERS CAN BE FOUND IN A CAREFUL READING OF THE REPORT ITSELF. AND OTHERS ARE WORTHY OF EXPOSITION SEPARATELY FROM IT. ATTACHMENT D TREATS THE MOST SIGNIFICANT ISSUES AND DRAWS FROM NEW DATA MADE AVAILABLE, INCLUDING SEVERAL NON-UNITED STATES GOVERNMENT ANALYSES. REFERENCES TO THE LATTER ARE INCLUDED.

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