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S/20060/Add.1  
2 August 1988  
ENGLISH  
ORIGINAL: ENGLISH/SPANISH

REPORT OF THE MISSION DISPATCHED BY THE SECRETARY-GENERAL TO  
INVESTIGATE ALLEGATIONS OF THE **USE** OF CHEMICAL WEAPONS **IN** THE  
CONFLICT BETWEEN THE ISLAMIC REPUBLIC **OF** IRAN **AND** IRAQ

**Note by the Secretary-General**

**Addendum**

**Appendix III**

SUMMARY REPORT **ON** PATIENTS EXAMINED BY THE MEDICAL SPECIALIST  
WITH RELEVANT CLINICAL DATA

**Case History No. 1**

**Particulars**

Last name: Van

First name: **Hossein**

sex: **M**

Age : 25 years

Nationality: Iranian

status : military

**Circumstances of the attack**

Date : 27 June 1988

Place: near Shakheshemiran

Approximate distance from explosion: 10 m

Source of explosion: artillery shell

Type of protection and how used: used gas mask about 3 minutes later

Clinical record

Time elapsed between explosion and appearance of first symptoms: 3 minutes

Initial symptoms: blurred vision, rhinorrhea

Medical examination

Date: 1 July 1988

Place: "22 Bahmann" hospital, Bakhtaran

Clinical findings

Patient had previously been given only one injection of atropine (2 mg); skin was bathed in sweat; pupil contracted to pin-point size.

No slowing of heartbeat; considerable rib retraction; rattles in left lung.

Case History No. 2

Particulars

Last name: Soltani

First name: Ramezan

sex: M

Age : 20 years

Nationality: Iranian

Status : military

Circumstances of the attack

Date: 27 June 1988

Place: near Shakhshemiran

Approximate distance from explosion: 10 m

Source of explosion: artillery shell

Type of protection and how used: used gas mask 2 minutes after attack

**Clinical record**

Time elapsed between explosion and appearance of first symptoms 2 minutes

Initial symptoms difficulty in breathing, blurred vision, salivation and rhinorrhea

**Medical examination**

Date 1 July 1988

Place: "22 Bahmann" hospital, Bakhtaran

**Clinical findings**

Patient had been treated with injection of atropine (2 mg), no oximes: pupils severely contracted.

Pulse rate 65.

**Case History No. 3**

**Particulars**

Last name: Aniry

First name: Khodadad

Sex: M

Age : 20 years

Nationality! Iranian

Status: military

**Circumstances of the attack**

Date: 27 June 1988

Place: near Shakhshemiran

Approximate distance from explosion: 10 m

Source of explosion: artillery shell

Type of protection and how used: used gas mask 1 minute after attack

Clinical record

Time elapsed between explosion and appearance of first symptoms: 10 minutes

Initial symptoms: difficulty in breathing, urinary incontinence, rhinorrhea, blurred vision

Medical examination

Date: 1 July 1988

Place: "22 Bahmann" hospital, Bakhtaran

Clinical findings

Patient had been given an injection of atropine (2 mg); no oximes; headache; acute miosis, but, when kept in darkness for lengthy period, pupil dilates slightly; conjunctivitis,

Pulse rate 72.

Case History No. 4

Particulars

Last name: Poor Hashemi

First name: Hossein

Sex: M

Age: 20 years

Nationality: Iranian

Status: military

Circumstances of the attack

Date: 27 June 1988

Place: Sheikh Saleh

Approximate distance from explosion: 10 m

Source of explosion: bomb dropped from aircraft

Type of protection and how used: used gas mask 1 minute after attack

### Clinical record

Time elapsed between explosion and appearance of first aymptomar 90 minutes

Initial symptoms: burning sensation in foot

### Medical examination

Date : 1 July 1988

Place: "22 Bahmann" hospital, Bakhtaran

### Clinical findings

General condition and sensory function good; no conjunctivitis; face, armpits, trunk and extremities not affected1 on the top of the left foot there is a blister between the second and third toes, measuring about 4 cm across the foot and about 2 cm lengthwiser it contains an amber, clear and transparent liquid. The tip of the second toe is blackish) on the top of the right foot thera is a similar but smaller blister.

### Case History No. 5

#### Particulars

Last namer Moradi

First name: Jahanbakhsh

Sex: M

Age: 20 years

Nationality: Iranian

Status : military

#### Circumstances of the attack

Date : 27 June 1986

Place : near Shakhshemiran

Approximate distance from explosion: 10 m

Source of explosion: artillery shell

Type of protection and how used: used gas mask about 2 minutes after attack

### Clinical record

Time elapsed between explosion and appearance of first symptoms: 10 minutes

Initial symptoms: difficulty in breathing, dizziness, rhinorrhea, salivation, lachrymation and urinary incontinence

### Medical examination

Date: 1 July 1988

Place: "22 Bahmann" hospital, Bakhtaran

### Clinical findings

Patient in good clinical condition; no contraction of the pupil; pupil reacts poorly to light.

Pulse rate 73.

### Case History No. 6

#### Particulars

Last name: Karami

First name: Reza

Sex: M

Age: 20 years

Nationality: Iranian

Status: military

#### Circumstances of the attack

Date: 27 June 1988

Place: Shakheshemiran

Approximate distance from explosion: 10 m

Source of explosion: artillery shell

Type of protection and how used: used gas mask about 3 minutes after attack

### Clinical record

Time **elapsed** between explosion and appearance **of** first symptoms: 2 minutes

Initial symptoms: difficulty in breathing, rhinorrhea, **dizziness**

### Medical examination

Date: 1 July 1988

Place: "22 Bahmann" hospital, Bakhtaran

### Clinical findings

Patient was not given any injection **of atropine**; no increase in secretions: pupil slightly contracted and reacts poorly to light.

Pulse rate 53.

### Case History No. 7

#### Particulars

Last name: Rahimi

First name: Mohammad

Sex: **M**

Age: **20 years**

Nationality: Iranian

Status : military

#### Circumstances of the attack

Date: 27 June 1988

Place: Shakheshemiran

Approximate distance from explosion: 3 m

Source of explosion: artillery shell

Type of protection and how used: first held breath then used **gas mask** after about 3 minutes

Clinical record

Time elapsed between explosion and appearance of first symptoms: 5 minutes

Initial symptoms: difficulty in breathing, rhinorrhea, lachrymation, salivation

Medical examination

Date: 1 July 1988

Place: "22 Bahmann" hospital, Bakhtaran

Clinical findings

Patient was given atropine (2 mg); moderate contraction of the pupil; reacts slowly to light.

Auscultation revealed a decreased vesicular murmur and signs of pulmonary congestion (oedema); pulse rate 74.

Case History No. 8

Particulars

Last name: Agaili

First name: Kamal

Sex: M

Age: 36 years

Nationality: Iraqi

Status: military

Circumstances of the attack

Date: 27 June 1988

Place: Shakhshemiran

Approximate distance from explosion: 200 m

Source of explosion: bomb dropped from aircraft

Type of protection and how used: used gas mask



Clinical record

Time elapsed between explosion and appearance of first symptoms: 6 hours

Initial symptoms: burning sensation in the back

Medical examination

Date: 1 July 1988

Place: "22 Bahmann" hospital, Bakhtaran

Clinical findings

No ocular lesions; face, neck and armpits not affected; below a line running some 4 cm below the shoulder blades, the back is completely covered with separate multiple blisters ranging in size from a few millimetres to a few centimetres in diameter. They are located on an area of dark skin extending beyond the blistered area, which looks inflamed towards the sides; the fold between the buttocks is severely affected, with extensive lesions resembling second-degree burns.

Some respiratory distress.

Case History No. 9

Particulars

Last name: Naghshebandi

First name: Ali

Sex: M

Age: 35 years

Nationality: Iraqi

Status: military

Circumstances of the attack

Date: 27 June 1988

Place: Shakhshemiran

Approximate distance from explosion: 10 m

Source of explosion: bomb dropped from aircraft

Typo of protection and how used: used gas mask 1 minute after explosion

Clinical record

Time elapsed between explosion and appearance of first symptoms: 5 hours

Initial symptoms: burning sensation in eyes, vomiting and itching in the back

Medical examination

Date : 1 July 1980

Place: "22 Bahmann" hospital, Bakhtaran

Clinical findings

Moderate conjunctivitis; the face, neck and upper chest are normal; on the back, a very large area resembles a second-degree burn but with no blisters; severe violet-coloured inflammation on buttocks, with blisters; the lesion is particularly severe in between the buttocks; violet-coloured erythema with blisters behind right thigh genitals not affected.

Case History No. 10

Particulars

Last name: Alaamani

First name: Abdol j abbar

Sex: M

Age : 41 years

Nationality: Iraqi

Status : military

Circumstances of the attack

Date : 27 June 1988

Place: Shakhshemiran

Approximate distance from explosion: 20 m

Source of explosion: bomb dropped from aircraft

Type of protection and how used: used gas mask one minute after explosion

**Clinical record**

Time elapsed between explosion and appearance of first symptoms; 6 hours

Initial **symptoms**8 respiratory distress, burning sensation on back, buttocks and groin

**Medical examination**

Dater 1 July 1988

Place: "22 Bahmann" hospital, Rakhtaran

**Clinical findings**

**Conjunctivitis**; face, neck and trunk **are unaffected**: right buttock turned **an** intense reddish-purple colour left **buttock** has same coloring but stronger; on the **most** prominent part, there is an irregularly shaped blister about 3 cm in diameter; it is situated in an inflamed area approximately 6 x 5 cm, where **some** small blisters are observed; **the back of the left** thigh is purplish, with **some** small blisters: the groin is not affected: the scrotum is swollen and red.

Frequent hoarse coughing: auscultation reveals wheezing in both lungs.

**Case History No. 11****Particulars**

Last name: Soleiman **Abadi**

First name: Karam **Reza**

Sex: M

Age: 26 years

Nationality: Iranian

Status: military

**Circumstances of the attack**

Date : 28 June 1988

Place: Sheikh Saleh

Approximate distance from explosion: 10 m

**Source** of explosion: bomb dropped from helicopter

Type of protection and how used: used gas mask 1 minute after explosion

**Clinical record**

Time elapsed between explosion and appearance of first. symptoms: 10 minutes

Initial symptoms : pain in the eyes, vomiting and burning sensation on right foot and genitals

**Medical examination**

Date : 1 July 1988

Placer "22 **Bahmann**" hospital, Bakhtaran

**Clinical findings**

General condition good.

Acute conjunctivitis; face and neck not affected: severe inflammation **of chest**; armpits have lesions resembling second-degree burns on an inflamed area of skin: groin and inner thighs are red and swollen; on right instep there is a very large dense blister which extends from the ankle to the base of the toes and contains a thick **amber-coloured** fluid; the blister is surrounded by a reddened area on which there are six **small** blisters: genitals are swollen and red.

No respiratory signs.

**Case History No. 12**

**Particulars**

Last name: Khordebinan

First name: **Jamal**

Sex: **M**

Age : 25 years

Nationality: Iranisn

Status : military

Circumstances of the attack

Date : 27 June 1988

Place : Sheikh Saleh

Approximate distance from explosions 10 m

Source of explosion: bomb dropped from helicopter

Type of protection and how used: used gas mask 1 minute after explosion

Clinical record

Time elapsed between explosion and appearance of first symptoms: 2 hours

Initial symptoms: dizziness, slight rhinorrhea and burning sensation on neck and legs

Medical examination

Date : 1 July 1988

Place: "22 Bahmann" hospital, Bakhtaran

Clinical findings

No conjunctivitis, face not affected; skin of the neck very dark and ringed with blisters, most of which are on the nape; the largest measures some 2 cm wide and 1.5 cm high; the upper chest is inflamed; armpits red on the inside of the right foot there is a dome-shaped blister measuring some 3 cm in diameter filled with a thick fluid in an area of purplish-red skin; testicles are swollen.

Case History No. 13

Particulars

Last name: Rahmani

First name: Hojat

Sex: h

Age: 18 years

Nationality: Iranian

Status: military

Circumstances of the attack

Date : 27 June 1988

Place: Sheikh Saleh

Approximate distance from explosion: 10 m

Source of explosion: bomb dropped from aircraft

Type of protection and how used: gas mask not used, but he quickly fled from the area of the explosion

Clinical record

Time elapsed between explosion and appearance of first symptoms: 2 hours

Initial symptoms: Itching and after six hours burning sensation and lachrymation

Medical examination

Date : 1 July 1988

Place : "22 Bahmann" hospital, Bakhtaran

Clinical findings

Acute conjunctivitis, numerous small blisters on the face; behind upper part of right ear there is a blister oozing an amber-coloured fluid; neck is dark red, almost black; on chest there is an inflamed triangular-shaped area extending from the neck to the navel; at the navel there is a series of blisters forming a band from side to side; right arm is spotted with small blisters extending to the back of the hand but stopping before the fingers; there are two blisters measuring about 2 cm in diameter on the left arm and two smaller ones on the back of the left hand; left armpit is bright red and has two large blisters at one corner; genitals are swollen and red.

Case History No. 14

Particulars

Last name : Mamidabadi

First name: Mohammad

Sex: M

Age : 18 years

Nationality: Iranian

Status: military

Circumstances of the attack

Date: 27 June 1988

Place: Sheikh Saleh

Approximate distance from explosion: 10 m

Source of explosion: bomb dropped from helicopter

Type of protection and how used: used gas mask, but victim believed that chemical weapons had not been used and took mask off after about 10 minutes

Clinical record

Time elapsed between explosion and appearance of first symptoms: 3 hours

Initial symptoms: burning sensation in the eyes and on the soles of the feet and vomiting

Medical examination

Date: 1 July 1988

Place: "22 Bahmann" hospital, Bakhtaran

Clinical findings

Acute swelling of the eyelids, to the point that the conjunctiva cannot be examined; lachrymation; neither the face nor the neck is affected; entire trunk is inflamed, including the armpits, which are turning red; groin is purplish-red; scrotum is swollen so that the patient must keep his legs far apart; there are blisters on the top of the left foot, the largest of which measures 1.5 cm in diameter.

Case History No. 15

Particulars

Last name: Jafarifard

First name: Ahmad

Sex: M

Age: 20 years

Nationality: Iranian

Status: military

Circumstances of the attack

Date: 27 June 1988

Place: Sheikh Saleh

Approximate distance from explosion: 10 m

Source of explosion; bomb dropped from helicopter

Type of protection and how used: used gas mask immediately

Clinical record

Time elapsed between explosion and appearance of first symptoms: 2 hours

Initial symptoms: burning sensation in the eyes, blurred vision and vomiting

Medical examination

Date: 1 July 1988

Place: "22 Bahmann" hospital, Bakhtaran

Clinical findings

Very acute conjunctivitis, lachrymation, intense photophobia; face, neck and trunk not affected; there is a blackened area of skin on the lower right leg; there is a blister measuring approximately 1.5 cm in diameter at the base of the index finger; there is a dense fluid-filled blister measuring approximately 4 cm in diameter on the left instep and other tiny blisters in the same area.

Case History No. 16

Particulars

Last name: Hosaini

First name: Mojtaba

Sex: M

Age: 21 years



Nationality: Iranian

Status : military

### Circumstances of the attack

Date: 27 June 1988

Placer Sheikh Saleh

Approximate distance from explosion! 70 m

Source of explosion: bomb dropped from helicopter

Type Of protection And how used: used gas mask

### Clinical record

Time elapsed between explosion and appearance of first symptoms: 4 hours

Initial symptoms: vomiting and rattle.

### Medical examination

Date: 1 July 1988

Place: "22 Bahmann" hospital, Bakhtaran

### Clinical findings

Severe palpebral oedema, to the point where the conjunctiva cannot be examined; intense lachrymation; the face has An irritation similar to, but darker than, that caused by a sunburn; buttocks are bright red; on the right side are traces of a blister measuring some 6 cm in diameter which has left an area denuded Of epithelium; groin is black; genitals are very swollen and blackened, making examination very painful.

### Case History No. 17

#### Particulars

Last name: Salehi

First name: Hooshang

Sex: M

Age : 22 years

Nationality: Iranian

Status: military

Circumstances of the attack

Date : 27 June 1988

Place: Sheikh Saleh

Approximate distance from explosion: 20 m

Source of explosions bomb dropped from helicopter

Type of protection and how used: used gas mask immediately after explosion and kept it on for one hour

Clinical record

Time elapsed between explosion and appearance of first symptoms: 4 hours

Initial symptoms: vomiting

Medical examination

Date : 1 July 1988

Place: "22 Bahmann" hospital, Bakhtaran

Clinical findings

Very severe conjunctivitis affecting the cornea, intense photophobia, copious lachrymation, irritation of the eyelids; face normal skin on the neck and trunk badly inflamed down to about 2 cm below the navel; armpits swollen and bright red, extremely painful; groin and upper thighs are bright purplish-red; genitals swollen and very painful.

Case History No. 18

Particulars

Last name: Khorani

First name: Exatolah

sex: M

Age : 21 years

**Nationality: Iranian**

**Status: military**

**Circumstances of the attack**

**Date : 27 June 1988**

**Place: Sheikh Saleh**

**Approximate distance from explosion: 20 m**

**Source of explosion: bomb dropped from helicopter**

**Type of protection and how used: used gas mask immediately after explosion but took it off some 2 hours later**

**Clinical record**

**Time elapsed between explosion and appearance of first symptoms: 2 hours**

**Initial symptoms: vomiting, burning sensation in the eyes and dark urine**

**Medical examination**

**Date : 1 July 1988**

**Place: "22 Bahmann" hospital, Bakhtaran**

**Clinical findings**

**Very severe conjunctivitis with pronounced lachrymation and photophobia; face not affected; neck slightly inflamed; trunk - covered with calamine - is slightly inflamed and itchy; there is a blister measuring approximately 1.5 cm in diameter in the right armpit; left armpit is red; the scrotum and penis are red and swollen and very painful.**

**Case History No. 19**

**Particulars**

**Last name: Abdali**

**First name: Alirahm**

**Sex: M**

**Age: 25 years**

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Nationality: Iraqi

Status! military

### **Circumstances of the attack**

Date: 27 June 1988

Placer Sheikh Saleh

Approximate **distance** from explosion; was in a vehicle about 200 m from the bomb, but drove to the site of the explosion

Source of **explosion**: artillery shall

Type of protection and how usedr used gas **mask** 10 minutes later

### **Clinical record**

Time elapsed between explosion and appearance of first symptoms: 3 hours

Initial symptoms: diaainess and burning sensation on the skin

### **Medical examination**

Dater 1 July 1988

Place: "22 **Bahmann**" hospital, Bakhtaran

### **Clinical findings**

**Acute conjunctivitis**; **face**, neck and trunk not affected; two blisters measuring approximately 2 cm in diameter on right buttock; scrotum red and swollen.

## **Case History No. 20**

### **Particulars**

Last name: Talebi

First namer Reza

Sexr **M**

**Age**: 21 years

Nationality; Iranian

**Status**: military

/...

Circumstances of the attack

Date : 28 June 1988

Place: Sheikh Saleh

Approximate distance from explosion: 10 m

Source of explosion: bomb dropped from helicopter

Type of protection and how used: gas mask put on after about 2 minutes

Clinical record

Time elapsed between explosion and appearance of first symptoms; 2 hours

Initial symptoms: burning sensation all over body, especially the eyes

Medical examination

Date! 1 July 1988

Place: "22 Bahmann" hospital, Bakhtaran

Clinical findings

Acute conjunctivitis: face slightly inflamed, as if sunburned, neck red; chest very inflamed; armpits red; left buttock has a large blister measuring some 3 cm which is beginning to ooze; scrotum swollen and painful.

Case History No. 21

Particulars

Last name: Kamandi

First name: Reza

Sex: M

Age : 23 years

Nationality: Iranian

Status : military

Circumstances of the attack

Date : 28 June 1988

Placer Sheikh Saleh

Approximate distance from explosion: 12 m

Source of explosion: Bomb dropped from helicopter

Type of protection and how used: used gas mask after 3 minutes

Clinical record

Time elapsed between explosion and appearance of first symptoms: 4 hours

Initial symptoms: vomiting, burning sensation on feet and in eyes

Medical examination

Date : 1 July 1988

Place: "22 Bahmann" hospital, Bakhtaran

Clinical findings

Mild conjunctivitis; face, neck and trunk not affected; there are two symmetrical lesions on the bottom of the feet, starting just before the ankle and ending at the base of the first three toes; the blisters are dense and filled with an amber-coloured fluid.

Case History No. 22

Particulars

Last name: Ghalandari

First name: Mohdi

Sex: M

Age: 27 years

Nationality: Iranian

Status: military

Circumstances of the attack

Date : 30 June 1988

Place: Khormal (near the Iraqi city of Halabja)

**Approximate distance from explosion: 10 m**

**Source of explosion: artillery shell**

**Type of protection and how used! used gaa msak and protective suit**

**Clinical record**

**Time elapsed between explosion and appearance of first symptoms: 8 hours**

**Initial symptoms: burning sensation in the eyes**

**Medical examination**

**Date: 1 July 1988**

**Place: "22 Bahmann" hoap -al, Bakhtaran**

**Clinical findings**

**Acute conjunctivitis; inflammation of face resembling a sunburn, with two small blisters on the cheek; another blister measuring some 1.2 cm in diameter on the neck and another on the nape of the neck; trunk and arms normal; back of right leg slightly inflamed.**

**Case History No. 23**

**Particulars**

**Last namer Dehghn**

**First namer Ali**

**Sex: M**

**Age: 19 years**

**Nationality: Iranian**

**Status : military**

**Circumstances of t h e**

**Date : 25 June 1988**

**Place : near Hamid**

**Approximate distance from explosion: 5 m**

Source of explosion: bomb dropped from aircraft

Type of protection and how used: none

Clinical record

Time elapsed between explosion and appearance of first symptoms: 1 minute

symptoms: Laboured breathing

Medical examination

Date : 2 July 1988

Place : "Khatam" hospital, Ahvaz

Clinical findings

Acute conjunctivitis with copious lachrymation; the skin all over the body is dark and cracking in the commissures; there are three blisters measuring some 2 cm in diameter on the neck; lesions resembling second-degree burns on the thorax; armpits black, with lesions resembling second-degree burns; groin is black, with areas where the skin has peeled.

Wheezing can be heard in both lungs upon auscultation.

Case History No. 24

Particulars

Last name: Heidarian

First namer Mohammad Reza

Sex: M

Age : 29 years

Nationality: Iranian

Status : military

Circumstance w f the attack

Date : 25 June 1988

Place: near Hamid

Approximate distance from explosion: 4 m



Source of **explosion**: bomb dropped from aircraft

Type of **protection** and how **used**: used **gas mask after about** 10 minutes

### Clinical record

Time elapsed between explosion and appearance of **first** symptoms: 10 minutes

Initial symptoms: photophobia and lachrymation

### Medical examination

Date: 2 July 1988

Place: "Khatam" hospital, Ahvaz

### Clinical findings

Very acute conjunctivitis, lachrymation and photophobia, **severe** palpebral oedema; **the** skin of the face exhibits numerous tiny lesions resembling second-degree **burns**, the skin of the neck is **dark**; the thorax is **dark**; there is a blotch measuring **dome 4 cm in** diameter and resembling a second-degree burn on the **shoulder**; the skin of the **arms** is darkt **armpits** black with **lesions** resembling second-degree burns; **the** groin is **dark**; genitals darkish and swollen.

No respiratory symptoms or signs.

### Case History No. 25

#### Particulars

Last name: Peivasteh

First name: Gholamhossein

Sex: M

Age: 20 years

Nationality: Iranian

Status: military

#### Circumstances of the attack

Date : 25 June 1986

Place: near Hamid

Approximate distance from explosion: 150 m (as he was going to the aid of soldiers who were near those described in case histories Nos. 23 and 24)

Source of explosion: bomb dropped from aircraft

Type of protection and how used: used gas mask 1 minute later

### Clinical record

Time elapsed between explosion and appearance of first symptoms: 1 hour

Initial symptoms: nausea and vomiting

### Medical examination

Date : 2 July 1988

Place : "Khatam" hospital, Ahvaz

### Clinical findings

Mild conjunctivitis; face not affected; circular lesion resembling a second-degree burn and measuring 2 cm in diameter on right wrist. Tiny blister measuring some 2 mm in diameter on ring finger of left hand; left leg slightly inflamed.

### Case History No. 26

#### Particulars

Last name: Sadoughi

First name: Hossein

Sex: M

Age: 40 years

Nationality: Iranian

Status : military

#### Circumstances of the attack

Date : 25 June 1988

Place: near Hamid

Approximate distance from explosion: 5 m

Source of explosion: bomb dropped from aircraft

Type of protection and how used: none

Clinical record

Time elapsed between explosion and appearance of first symptoms: 10 minutes

Initial symptoms: nausea and vomiting

Medical examination

Date : 2 June 1988

Place: "Khatam" hospital, Ahvaz

Clinical findings

No irritation of conjunctiva; face not affected; nape of neck exhibits lesion;; from which the skin is peeling and which is scabbing over; there is an irregular-shaped lesion in the lumbar region resembling a second-degree burn and measuring some 6 cm across and some 4 cm lengthwise, surrounded by a band of purple skin 3 cm wide; there are two lesions measuring approximately 3 cm by 2 cm resembling second-degree burns on the front of the right thigh; genitals not affected.

No respiratory symptoms or signs.

Case History No. 27

Particulars

Last name: Hassan Pour

First name: Reivan

Sex: M

Age: 19 years

Nationality: Iranian

Status : military

Circumstances of the attack

Date: 25 June 1988

Place: near Hamid

Approximate distance from explosion: 5 m

Source of explosion: bomb dropped from aircraft

Type of protection and how used: used gas mask some 5 minutes later

#### Clinical record

Time elapsed between explosion and appearance of first symptoms: immediate

Initial symptoms: immediately after the explosion, he noted a burning sensation in the eyes; after about 2 hours he began vomiting

#### Medical examination

Date: 2 July 1988

Place: "Khatam" hospital, Ahvaz

#### Clinical findings

Moderate conjunctivitis, eyelids inflamed; face black; neck black, the nape is completely denuded of the epithelium; a band measuring some 4 cm wide and resembling a second-degree burn runs round the neck except for the throat; trunk dark; beneath the navel there is an oval-shaped patch lying lengthwise across the body which resembles a second-degree burn; armpits very dark; the folds of skin at the elbows are also dark, almost black; the upper right thigh has two ulcerated lesions measuring approximately 3 cm by 2 cm and two others measuring approximately 4 cm in diameter; knees are black; scrotum and penis are dark and slightly swollen.

No respiratory symptoms or signs.

#### Case History No. 28

#### Particulars

Last name: Seifi

First name: Khalil

sex: M

Age: 31 years

Nationality: Iranian

Status: military

**Circumstances of the attack**

Date: 25 June 1988

Placer near **Hamid**

Approximate distance from explosion: **5 m**

Source of explosion: bomb dropped from aircraft

Type of protection and how used: none

**Clinical record**

Time elapsed between explosion and appearance of first symptoms: **2 hours**

Initial symptoms; burning sensation in the eyes and vomiting

**Medical examination**

Date: **2 July 1988**

Placer "**Khatam**" hospital, **Ahvaz**

**Clinical findings**

**Acute** conjunctivitis, tears streaming down face; scalp dark (hair is very short); face is **dark**; there is a crack on the right side; **neck** dark; shoulders are blackish, with two lesions on the left shoulder resembling second-degree burns; **one** of the lesions is scabbing over; the posterior thorax is dark purple and there **has** been extensive skin loss over a very large area; armpits black, with ulcerations; an area **of** dark purple skin extends **from** a line situated approximately **5 cm** beneath the navel to **the pubis**; there are two large blisters, measuring approximately 3 *cm* in diameter and 2 **cm** in diameter respectively, on the perinaeum; on the inside of the right thigh there **is** an ulceration measuring 4 cm by 3 **cm**; **scrotum** swollen.

No respiratory symptoms or signs.

**Case History No. 29****Particulars**

Last **name**: Nowzari

First name: **Nader**

**Sex**: **M**

**Age**: **22 years**

Nationality: **Iranian**

Status : **military**

**Circumstances of the attack**

Date: **25 June 1988**

Placer near **Hamid**

Approximate distance from explosion: **150 m**

**Source** of explosion: bomb dropped from aircraft

Type of protection and how **used**: used gas **mask** about 2 minutes later

**Clinical record**

Time elapsed between explosion and appearance **of** first symptoms: **3 hours**

Initial symptoms<sup>8</sup> burning sensation in eyes, nausea and vomiting

**Medical examination**

Dater **2 July 1988**

Place: **"Khatam"** hospital, Ahvaa

**Clinical findings**

No conjunctival **irritation**; face has dark pigmentation; neck shows dark **colouring** between the two neck muscles; left forearm darkened, with inner surface of skin covered by a lesion resembling a **second-degree** burn; dark area **about 4 cm wide** at level of navel; small ulcer under arch of right **foot**, with another **3 cm x 2 cm** in diameter on the instep.

No respiratory symptoms or signs.

**Case History No. 30**

**Particulars**

Last name: **Amiri**

First name: **Gholamali**

Sex: **M**

Age : **20 years**

**Nationality: Iranian**

**Status: military**

**Circumstances of the attack**

**Dater 25 June 1988**

**Place: near Hamid**

**Approximate distance from explosion: 150 m**

**Source of explosion: bomb dropped from aircraft**

**Type of protection and how used: used gas mask about 2 minutes later**

**Clinical record**

**Time elapsed between explosion and appearance of first symptoms: 8 hours**

**Initial symptoms: laboured breathing, burning sensation in hands and feet and vomiting**

**Medical examination**

**Date: 2 July 1988**

**Place: "Khatam" hospital, Ahvaz**

**Clinical findings**

**Mild conjunctivitis; small area of dark pigmentation on face; small purplish inflammation on front of left thigh; on outer ankle bone of left leg there is a lesion resembling a second-degree burn measuring about 4 cm x 3 cm.**

**Case History No. 31**

**Particulars**

**Last name: Ghazai**

**First name: Sirons**

**Sex: M**

**Age: 26 years**

**Nationality: Iranian**

**status : military**

**Circumstances of the attack**

Data: 25 June 1988

Placer near Hamid

Approximate distance from explosion: 100 m

Source of explosion: bomb dropped from aircraft

Type of protection and how used: used gas mask 1 minute after explosion

**Clinical record**

Time elapsed between explosion and appearance of first symptoms: 3 hours

Initial symptoms: burning sensation in foot

**Medical examination**

Date: 2 July 1988

Place: "Khatam" hospital, Ahvaz

**Clinical findings**

Moderate conjunctivitis; face unaffected; on the thorax there is horizontal purplish-red band across armpits purplish-red; on top of left foot there is a lesion resembling a second-degree burn 1.5 cm in diameter.

**Case History No. 32**

**Particulars**

Last name: Rahimi

First name: Haidar

Sex: M

Age: 20 years

Nationality: Iranian

Status: military

**Circumstances of the attack**

Date: 25 June 1980



Place: near Hamid

Approximate distance from explosion: 10 m

Source of explosion: bomb dropped from aircraft

Type of protection and how used: none

#### **Clinical record**

Time elapsed between explosion and appearance of first symptoms: 90 minutes

Initial symptoms: burning sensation in eyes and vomiting

#### **Medical examination**

Date: 2 July 1988

Place: "Khatam" hospital, Ahvas

#### **Clinical findings**

Very acute conjunctivitis; the conjunctiva is of a uniform red colour; acute lachrymation; photophobia; face and neck are dark; trunk covered by slightly dark pigmentation except for a belt at level of navel; armpits not affected; lower extremities and genitals not affected.

Auscultation revealed stertor in upper lobes of both lungs.

#### **Case History No. 33**

#### **Particulars**

Last name: Rhonshabi

First name: Abolghasem

Sex: M

Age: 32 years

Nationality: Iranian

Status: military

#### **Circumstances of the attack**

Date: 25 June 1988

Place: near Hamid

Approximate distance from explosion: 5 m

Source of explosion: bomb dropped from aircraft

Type of protection and how used: none

#### Clinical record

Time elapsed between explosion and appearance of first symptoms: 20 minutes

Initial symptoms: nausea and vomiting

#### Medical examination

Date : 2 July 1988

Place: "Khatam" hospital , Ahvaz

#### Clinical findings

Moderate conjunctivitis; face, neck and thorax unaffected.

The lumbar region and sacrum have black pigmentation, except where interrupted by lesions resembling second-degree burns varying from several mm to several cm in diameter. In the fold between the buttocks the skin is also black and has a triangular lesion resembling a second-degree burnt genitals unaffected.

No respiratory symptoms or signs.

#### Case History No. 34

#### Particulars

Last name: Zamiri

First name: Hossein

Sex: M

Age: 21 years

Nationality: Iranian

Status: military

### **Circumstances of the attack**

Date : 25 June 1988

Place: Koushk

Approximate distance from explosion: 50 m

Source of explosion: artillery shell

Type of protection and how used: used gas mask about 3 minutes after explosion

Clinical record

Time elapsed between explosion and appearance of first symptoms: 3 hours

Initial symptoms: burning sensation in eyes, laboured breathing

### **Medical examination**

Date: 2 July 1988

Place: "Khat am" hospital, Ahvaz

### **Clinical findings**

Very minor conjunctivitis; darkened face; skin peeling on right temple; torso has dark pigmentation, becoming black on the abdomen; left shoulder has a lesion resembling a second-degree burn; on the inside of the left elbow there is a lesion resembling a second-degree burn about 12 cm long and 8 cm wide; armpits are jet black; above the left iliac there is a lesion resembling a second-degree burn measuring 5 cm x 4 cm; left leg has dark pigmentation with a lesion resembling a second-degree burn about 8 cm x 4 cm and another approximately 4 cm from the inner ankle bone measuring some 2.5 cm in diameter; genitals unaffected.

No respiratory symptoms or signs.

### **Case History No. 35**

#### **Particulars**

Last name: Asgari

First name: Ali Reza

Sex: M

Age: 23 years

Nationality: Iranian

Status: military

**Circumstances of the attack**

Date: 25 June 1988

Place: near Hamid

Approximate distance from explosion: 200 m

Source of explosion: bomb dropped from aircraft

Type of protection and how used: used gas mask 1 hour after explosion

**Clinical record**

Time elapsed between explosion and appearance of first symptoms: 3 hours

Initial symptoms: burning sensation in eyes

**Medical examination**

Date: 2 July 1988

Place: "Khatam" hospital, Ahvaz

**Clinical findings**

No conjunctivitis; no lesions on face; a lesion resembling a second-degree burn on outer edge of left upper ear; no lesions on thorax, although patient complains of itching, armpits and groin unaffected.

No respiratory symptoms or signs.

**Case History No. 36**

**Particulars**

Last name: Seyyedi

First name: Ahmad

Sex: M

Age: 41 years

Nationality: Iranian

Status: military

Circumstances of the attack

Date: 25 June 1988

Place: near Hamid

Approximate distance from explosion: 5 m

Source of explosion: bomb dropped from aircraft

Type of protection and how used: none

Clinical record

Time elapsed between explosion and appearance of first symptoms: 3 hours

Initial symptoms: burning sensation in eyes and hands

Medical examination

Date: 2 July 1988

Place: "Khat am" hospital, Ahvaz

Clinical findings

Acute conjunctivitis; face has mottled black coloration with purplish areas; neck and nape of neck also purplish; areas of dark pigmentation on trunk and armpits are of a bright purple hue but not ulcerated; above the navel there is a horizontal purple band about 3 cm wide; both arms have purplish-black coloration; scrotum reddened and swollen.

No respiratory symptoms or signs.

Case History No. 37

Particulars

Last name: Nasibi

First name: Hassan

Sex: M

Age: 23 years

Nationality: Iranian

Status: military

Circumstances of the attack

Date: 25 June 1988

Place: near Hamid

Approximate distance from explosion: 6 m

Source of explosion: bomb dropped from aircraft

Type of protection and how used: used gas mask about 5 minutes after explosion

Clinical record

Time elapsed between explosion and appearance of first symptoms: 5 hours

Initial symptoms: burning sensation in eye

Medical examination

Date: 2 July 1988

Place: "Khatam" hospital, Ahvaz

Clinical findings

Acute conjunctivitis; face unaffected; neck somewhat inflamed; upper thorax has measles-like rash starting from shoulders and converging into two bands about 7 cm wide extending to the lower end of the sternum; genitalia unaffected.

No respiratory symptoms or signs.

Case History No. 38

Particulars

Last name: Tamehri

First name: Gholamreza

Sex: M

Age: 20 years

Nationality: Iranian

status : military

### **Circumstances of the attack**

Date : 25 June 1988

Place: near Hamid

Approximate distance from explosionx 10 m

Source of explosion: bomb dropped from aircraft

Type of protection and how used: uaed gaa mask about 3 minutes after explosion

### **Clinical record**

Time elapsed between explosion and appearance of first symptomax 3 hours

Initial symptoms: burning sensation in eyes

### **Medical examination**

Date : 2 July 1988

Place : "Khatam" hospital, Ahvas

### **Clinical findings**

No conjunctivitis: face unaffected; neck and nape of neck have reddish-grey pigmentation; armpits hseve reddish pigmentation; about 1.5 cm below the navel, the skin takes on a purplish tint on which, in the back of torso, there are lesions resembling second-degree burns measuring about 6 cm wide and 2 cm long; groin has pink pigmentation; scrotum slightly swollen.

No respiratory symptoms or signs.

### **Case History No. 39**

### **Particulars**

Last name: Rostami

First name: Thamares

Sex: M

Aye : 21 years

Nationality: Iranian

Status: military

Circumstances of the attack

Date: 25 June 1988

Place: near Hamid

Approximate distance from explosion 15 m

Source of explosion: bomb dropped from aircraft

Type of protection and how used: used gas mask about 10 minutes after explosion

Clinical record

Time elapsed between explosion and appearance of first symptoms: 2 hours

Initial symptoms: headache and burning sensation in eyes

Medical examination

Date: 2 July 1988

Place: "Khatam" hospital, Ahvac

Clinical findings

Acute conjunctivitis: face and neck almost black; upper part of torso and both shoulders have dark purple pigmentation, which is also present in irregular blotches on the back: the bend8 at the elbows are purplish; the armpits are the same colour without being any more affected than the surrounding skin.

No respiratory symptoms or signs.

Case History No. 40

Particulars

Last name: Rahmani

First name: Ardelan

Sex: M

Age: 21 years



Nationality: Iranian

Status: military

### Circumstances of the attack

Date: 25 June 1988

Place: near Hamid

Approximate distance from explosion: 150 m

Source of explosion: bomb dropped from aircraft

Type of protection and how used: used gas mask 2 minutes after explosion

### Clinical record

Time elapsed between explosion and appearance of first symptoms: 1 hour

Initial symptoms: laboured breathing and burning sensation in eyes

### Medical examination

Date: 2 July 1988

Place: "Khatam" hospital, Ahvas

### Clinical findings

Moderate conjunctivitis face, neck, torso and extremities unaffected, except for one lesion resembling a second-degree burn on bottom of right foot about 6 mm in diameter.

### Case History No. 41

### Particulars

Last name: Javid

First name: Hase

Sex: M

Age : 20 years

Nationality: Iranian

Status : military

### Circumstances of the attack

Date : 25 June 1988

Place: Ma jnoon islands

Approximate distance from explosion: unknown (patient is in a coma)

Source of explosion: artillery shell, according to those with him

Type of protection and how used: unknown; apparently he used no protection at all, according to information supplied in the hospital

### Clinical record

Time elapsed between explosion and appearance of first symptoms: must have appeared immediately

Initial symptoms: he was treated at 11 a.m. in the first-aid post.. Found to have pupils contracted with lachrymation, slow heartbeat, twitching of muscles, convulsions, difficulty in breathing, and signs of pulmonary oedema. Deep coma. He was given 10 mg of atropine, 240 mg of Toxogenin and 10 mg of Diazepam intravenously and was immediately evacuated to the hospital at Ahvaz, where he was placed in the intensive-care Unit.

### Medical examination

Date : 2 July 1980

Place: "Khatam" hospital, Ahvaz

### Clinical findings

Patient has been in deep coma since admission; tracheotomy and intravenous feeding. According to the attending physician, he had been twitching and had convulsions which did not occur during the examination; there was no miosis or slow heartbeat; no changes in skin colour.

## Case History No. 42

### Particulars

Last name : Gaycar

First name: Yaghob

sex: M

Age: 48 years

Nationality: Iranian

Status : military

Circumstances of the attack

Date : 21 June 1988

Place: Majnoon islands

Approximate distance from explosion; unknown

Source of explosion: unknown

Type of protection and how used: none

Clinical record

Time elapsed between explosion and appearance of first symptoms: unknown

Initial symptoms: pupils contracted, slow heartbeat, twitching, convulsions and signs of pulmonary oedema: quickly fell into a deep coma. When given first aid, he was treated with atropine and Toxogenin; after five hours, eye movements were observed and the coma became less deep.

Medical examination

Date : 2 July 1988

Place : "Khatam" hospital, Ahvas

Clinical findings

Patient is now fully conscious: has come out of the coma, but replies only slowly to questions; pupils dilated; do not respond to light.

Pulse rate 80.

Case History No. 43

Particulars

Last name: Falahati

First name: Mahnaad

Sex: M

Age: 2 ' 1 years

Nationality; Iranian

Status : military

Circumstances of the attack

Date : 25 June 1988

Place: near Hamid

Approximate distance from explosion: 5 m

Source of explosion: bomb dropped from aircraft

Type of protection and how used: none

Clinical record

Time elapsed between explosion and appearance of first symptoms: 30 minutes

Initial symptoms: conjunctivitis, nausea and vomiting

Medical examination

Date : 2 July 1988

Place : "Khatam" hospital, Ahvaz

Clinical findings

Patient died on 30 June 1988. He had blistering lesions all over the body with darkened areas where there was no ulceration.

The leucocyte count was 15,000 on 27 June, and three hours before death there were none in the recount.

Case History No. 44

Particulars

Last name: Samei

First name: Mohamad Ali

Sex: M

Age : 30 years

**Nationality: Iranian**

**Status : military**

**Circumstances of the attack**

**Date : 25 June 1988**

**Place : near Hamid**

**Approximate distance from explosion: 10 m**

**Source of explosion: bomb dropped from aircraft**

**Type of protection and how used: none**

**Clinical record**

**Time elapsed between explosion and appearance of first symptoms: unknown**

**Initial symptoms: laboured breathing**

**Medical examination**

**Date : 2 July 1968**

**Placer "Khatam" hospital, Ahvac**

**Clinical findings**

**Patient had enormous blisters over large areas of the body, laryngeal oedema and acute respiratory distress with a  $pO_2$  factor of less than 50 and a  $pCO_2$  factor above 601 despite respiratory assistance he died two days after admission.**

**Appendix IV****BREAKDOWN OF CASES EXAMINED BY THE MEDICAL SPECIALISTS**

The cases listed in this appendix do not constitute a representative sample of the breakdown by these categories of the total number of those affected. Numbers in each group depended on the number of injured examined in each hospital or centre.

**Table 1****Breakdown by aggressive agents**

	<b>No. of cases</b>
<b>Acetylcholine esterase-inhibiting agent</b>	<b>8</b>
<b>Yperite (mustard gas)</b>	<b>36</b>
<b>Total</b>	<b>44</b>

**Table 2****Age distribution of patients**

<b>Age groups (in years)</b>	<b>No. of patients</b>
<b>15-19</b>	<b>4</b>
<b>20-24</b>	<b>22</b>
<b>25-29</b>	<b>9</b>
<b>30-34</b>	<b>4</b>
<b>35-39</b>	<b>2</b>
<b>40-44</b>	<b>2</b>
<b>45-49</b>	<b>1</b>
<b>Total</b>	<b>44</b>

Table 3

Breakdown of cases by locality and date of attack a/

Locality	June 1988				Total
	25	27	28	30	
Hamid	19				19
Koushk	1				1
Majnoon	2				2
Shakheshemiran		8	1		9
Sheikh Saleh		8	4		12
Khormal				1	1
Total	22	16	5	1	
Grand total					44

a/ All information contained in this table is based on the testimony of patients.

Table 4

Breakdown of cases by type of weapon conveying aggressive chemical and by distance from impact area

Distance from impact area (in metres)	Type of weapon			
	Artillery shell	Bomb dropped by aircraft	Bomb dropped by helicopter	Unknown
0-10	7	15	5	
11-50	1	2	3	
51-100		1	1	
101-200	1	6		
Unknown	1			1
Total	10	24	9	1
Grand total				44

Breakdown of cases by aggressive chemical agent employed, use of gas-mask protection and appearance of first symptoms

		Appearance of first symptoms						
Chemical agent	Gas mask used after	1-10 min	Up to 1 h	Up to 3 h	Up to 5 h	More than 5 h	Unknown	
Organophosphorous compound	1 minute	1						
	2 minutes	2						
	3 minutes	3						
	Unknown						1	
	Gas mask not used						1	
	Total	6					2	
Grand total							8	
Yperite (mustard gas)	1 minute	1	1	4	2	1		
	2 minutes		1	2		1		
	3 minutes			2	1			
	5 minutes	1			1			
	10 minutes	1		2				
	1 hour			1				
	Unknown				1	2		
	Gas mask not used	2	2	6			1	
	Total	5	4	17	5	4	1	
Grnnd total								