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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: "23 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 symptoms: 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 affected; 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 lengthwise; it contains an amber, clear and transparent liquid. The tip of the second toe is blackish; on the top of the right foot there is a similar but smaller blister.

Case History No. 5

Particulars

Last name: Moradi

First name: Jahanbakhsh

Sex: M

Age: 20 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 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: Shakhshemiran

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: Shakheshemiran

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

Type 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 1988

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: Alsamani

First name: Abdoljabbar

Sex: M

Age: 41 years

Nationality: Iraqi

Status: military

Circumstances of the attack

Date: 27 June 1988

Place: Shakheshemiran

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: respiratory distress, burning sensation on back, buttocks and groin

Medical examination

Date: 1 July 1988

Place: "22 Bahmann" hospital, Bakhtaran

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

Place: "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: 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 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: 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 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: Hamidabadi

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

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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

Place: 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 explosion: 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: Ezatolah

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

Nationality: Iraqi

Status: military

Circumstances of the attack

Date: 27 June 1988

Place: 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 shell

Type of protection and how used: used gas mask 10 minutes later

Clinical record

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

Initial symptoms: dizziness and burning sensation on the skin

Medical examination

Date: 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 name: Reza

Sex: 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

Place: 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 gas mask 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" hospital, 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 name: Dehghan

First name: Ali

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: 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 name: Mohammad Reza

Sex: M

Age: 29 years

Nationality: Iranian

Status: military

Circumstances of 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 some 4 cm in diameter and resembling a second-degree burn on the shoulder; the skin of the arms is dark; 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 1988

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 lesions 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: Keivan

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

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: 2 hours

Initial symptoms: burning sensation in the eyes and vomiting

Medical examination

Date: 2 July 1988

Place: "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

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: 3 hours

Initial symptoms: burning sensation in eyes, nausea and vomiting

Medical examination

Date: 2 July 1988

Place: "Khatam" hospital, Ahvaz

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

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 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

Date: 25 June 1988

Place: 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; 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: Heidar

Sex: M

Age: 20 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: 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 stertors in upper lobes of both lungs.

Case History No. 33

Particulars

Last name: Khonshabi

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 burn; 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: "Khatam" 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: 31 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: "Khatam" 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; 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 eyes

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 explosion: 10 m

Source of explosion: bomb dropped from aircraft

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

Medical examination

Date: 2 July 1988

Place: "Khatam" hospital, Ahvaz

Clinical findings

No conjunctivitis; face unaffected; neck and nape of neck have reddish-grey pigmentation; armpits have 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

Age: 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, Ahvaz

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 bends 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: Majnoon 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 1988

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, Ahvaz

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: Mahmaad

Sex: M

Age: 25 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 1988

Place: "Khatam" hospital, Ahvaz

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 60; 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

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

Table 2

Age distribution of patients

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

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					<u>44</u>

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					<u>44</u>

Table 5

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

Chemical agent	Gas mask used after	Appearance of first symptoms					Unknown
		1-10 min	Up to 1 h	Up to 3 h	Up to 5 h	More than 5 h	
Organophosphorous compound	1 minute	1					
	2 minutes	2					
	3 minutes	3					
	Unknown						1
	Gas mask not used						1
	Total	6					2
	Grand total						0
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
	Grand total						16