

Allegations of chemical warfare in Syria

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Nature of evidence



- **Proof beyond any doubt**
 - Onsite investigations by independent & international team of experts
 - Variety of documentary sources:
 - Soil samples & munition fragments
 - Medical evidence (casualty examinations, autopsy, hospital records, etc.)
 - Interviews of witnesses and victims
 - Integrity of the chain of custody
 - Analyses in internationally recognised (e.g., OPCW certified) laboratories
- **National evidence**
 - Evidence obtained via national intelligence operators, from escapees, journalists, etc.
 - Analysis in national or commercial laboratories
 - Integrity of chain of custody is irrelevant, because no guarantees about source of samples and their preservation during transfer
 - Useful to request for official investigation of alleged use (UN Secretary General; OPCW) – e.g., UK & French reports
- **Witness reports**
 - Press articles, webcasts, statements by belligerents, reports from medical examinations, etc.
 - Limited evidentiary value, but may be indicative of incidents taking place
 - Fragmentary; often lack crucial details and no analysis of samples
 - Propaganda factor

Something is amiss, but ...



- **Thus far, only witness accounts of CW use in the public domain**
 - Vague statements
 - Narrative does not match symptoms seen in film footage and pictures
 - Narrative changes (e.g., Aleppo: chlorine ⇒ sarin ⇒ bleach)
- **National evidence**
 - Reports submitted by the UK and France
 - US claims evidence too, but not really clear whether based on independent evidence and/or analysis of UK & French reports
 - No details of origin of samples or analytical results available to the public for independent assessment
 - Knowledge of their existence comes from political declarations
 - References to those reports mostly made in context of other political matters (lifting arms embargo, military intervention, G8 summit, etc.)
 - No use of reference laboratories in other countries to validate findings
- **No official investigation**
 - Called by Syria; expanded by UK and French requests
 - Launched, but not allowed into Syria
 - UN Team with experts from OPCW & WHO now withdrawn from Cyprus.

Halabja 1988

Street view



- Multiple bodies, scattered randomly
- Mix of human bodies and animal cadavers



Halabja 1988

Room view



- People were interrupted in their activities
- Instantaneous death from sarin exposure
- Discolouring of skin



Halabja 1988

Child victims

- Bleeding from nose possible symptom
- Marked blue areas (suffocation)
- Pink hue (excessive sweating, blood pressure, ...)



Halabja 1988

Street victim



- Pink hue and blueness towards extremities
- Blue discolouring under fingernails



Syria 2013

CW victims?

- Nerve agent?
- Chlorine?
- Foaming not typical of CW exposure
- Where are the fatalities and large number of casualties?
(cf. Tokyo subway attacks)



Animal carcasses



Aleppo area, March 2013

- No contortion visible
- No mix with humans or other animals
- Only known picture



Halabja area, March 1988

- Note contorted neck & hind limb

Nature of sarin



- **Colourless and odourless**
 - Correct if in almost pure form; otherwise smell of paint stripper or other foul odour
 - Can we assume that Syrian sarin is pure?
 - Would be highly unstable: stabilisers add to impurity
 - Iraq: up to 60% purity; did not master stabilisation technology
- **Do we know how Syria stockpiles its sarin?**
 - Bulk storage
 - Would imply stabilisation technology, unless frequent replenishment
 - Not available for immediate use
 - Munition storage
 - Bombs, warheads and shells would limit possible scenarios
- **Stockpiling has major bearing on nature of allegations**
 - Small-scale, low intensity chemical warfare
 - Raises questions about delivery systems and how the agent is transferred to those delivery systems
 - Would insurgents have knowledge and expertise to transfer sarin from captured munitions?
 - No accidents reported, which one would expect under the circumstances
 - Is it possible that small amounts are being synthesised in laboratories?

Lethality of sarin



- **Experimental data (animal models)**
 - Lethal concentration-50% (respiratory): **100 mg-min/cu. m.** (resting)
 - Incapacitation concentration-50% (respiratory): **75 mg-min/cu. m.** (resting)

(Fact Sheet on Exposure Limits for Sarin (GB), July 1997,

http://www.gulfink.osd.mil/dugway/low_lv_chem_fact.htm)

- Lethal and incapacitating cumulative doses are very close to each other
- **Dosage more difficult to control in open air environment, even in case of low-level use**
 - Why no images of dead bodies with typical symptoms of sarin exposure?
 - Why no descriptions of other casualties with typical symptoms of sarin exposure?

Psychosomatic phenomenon?



- **Fighters under extreme duress and fatigue**
 - Likely to experience high stress levels, leading to stomach cramps, vomiting, and other physiological phenomena
 - Most insurgents would be unfamiliar with chemical warfare or chemistry
 - Strange sensations would be enhanced and interpreted in function of an expectation
 - Compare with experiences of soldiers in the trenches during World War 1
 - Medical staff would be untrained in treatment of (mass) CW casualties; infrastructure would not be prepared-
 - Sarin = odourless & colourless ⇒ fighters did not hear a detonation see or smell anything, thus sarin must be the cause of whatever they are experiencing
 - What other toxicants are they being exposed to? (Dust particles; industrial toxicants, etc.)
 - Epidemic hysteria?
- **Other questions**
 - What psychoactive substances do the fighters take to cope with extreme stress?
 - Do the fighters misuse preventive medication and other prophylaxis?
 - *Pyridostigmine*, whose effects correspond to much what is being reported in the press (Sweating, diarrhoea, nausea, vomiting, abdominal cramps, increased salivation, tearing, increased bronchial secretions, constricted pupils, facial flushing due to vasodilation, erectile dysfunction)
 - Atropine, which is a neurotoxicant in its own right if used in the absence of nerve agent poisoning (Cf. *Le Monde*, 27-05-2013: 15 successive doses administered by a doctor)
 - Is it possible that laboratory quantities of sarin are being distributed just to give sufficient credibility to allegations or as part of psychological warfare
 - Then, by whom: government forces or insurgents?
 - Can samples have been spiked?

Missing CW incidents



- **Invasion of USSR (1941-42)**
 - No CW use
 - However, several incidents of agent release reported by German Officers
 - General Hermann Ochsner, head of the German chemical troops
 - Post-war report prepared for US intelligence by Dr Walter Hirsch on Soviet CW preparations
 - Germans decided this this was inadvertent use, rather than the result of deliberate political & military decision making
- **Syria:**
 - No similar incidents being reported
 - Intense fighting close to known CW storage and production sites
 - Relocation of CW (e.g., road accidents, spillage?)
 - Have the rebels not captured a single storage site in over 2 years?
 - Indications of intense communication between belligerents to avoid CW incidents
 - Via outside government supporters
 - With Syrian officers and other commanders on both sides via new media (Facebook, Skype, etc.)

Conclusions



- **Too many questions remain**
 - Too many implausible assertions, contradictions and changing narratives
 - Allegations lack density
 - Too many political interests and national statements on allegations without factual backup from national investigations
 - “The curious incident of the dog in the night-time” (Sherlock Holmes, *Silver Blaze*)
 - ⇒ What is not happening that we would expect to see?
- **Reports from France, UK and USA transmitted to UN Secretary General seem to point to possible CW incidents**
 - However, only political statements as to their existence are available to the public
 - Virtually no factual details on the nature and provenance of samples as well as the laboratory results (what was found; what was not found) have been released, making independent assessments impossible.
 - Government ministers and officials tend to claim a higher degree of evidentiary value than what national investigations can plausibly offer
 - They also tend to simultaneously attribute responsibility for the CW incidents
 - Third parties inevitably interpret the claims in function of those governments’ other goals (e.g., military intervention, no-fly zone, armament of insurgents, ...)
- **Only an international investigation can resolve whether CW incidents took place and verify their nature**



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