Chemists' conflict

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The Poisonous Cloud: Chemical Warfare in the First World War. By L.F. Haber. Clarendon: 1986. Pp.401. £35, \$59.

Chemical Warfare. By Edward M. Spiers. Macmillan, London/University of Illinois Press: 1986. Pp.277. £27.50, \$24.95.

"WHAT did you do in the war?" is not a question any son of Fritz Haber would have needed to ask. Nor, indeed, would the answer necessarily be what a child of his would have liked to hear. For Haber had another, more dubious paternal role. He is the acknowledged father of chemical warfare, the pioneer of the use of chlorine in Flanders in 1915.

Haber never apologized for his part in chemical warfare: he was a patriotic German doing his best for the Fatherland, and his only regret seems to have been that this method of warfare wasn't more successful. According to his son Ludwig, the author of *The Poisonous Cloud*, Haber's opinions on chemical warfare went "unreported" and his two lectures on the subject are "disappointing"; but clearly he felt his brainchild had failed "in other hands" — those of the poor bloody infantry.

As befits a superb scientist (he was awarded the 1919 Nobel prize for chemistry, for his role in the Haber-Bosch process for making ammonia), Haber's suggestion to use gas was the result of a perceptive analysis of trench warfare in the First World War. Something was needed to break the stalemate. Gas, released from cylinders — but not projectiles which were forbidden under the 1899 Hague Convention — would do it. The German High Command, however, was not convinced. In consequence, on 22 April 1915 when gas was first used in anger, they failed to provide sufficient troops to enable a decisive break to be made in the Allied lines. Haber's view of the event is that it was a sort of experiment, poorly conducted. Not enough gas was released, and the soldiers lacked the imagination to exploit the disarray it caused. As events unfolded thereafter, gas, always unwelcome, never achieved the same element of surprise. It played only a marginal role in the outcome of most battles, with some exceptions such as Caporetto, where gas dislodged the Italians from their defensive positions in the mountains and enabled the Austrians to march into Italy.

The Poisonous Cloud is an outstanding history of chemical warfare in the First World War. Using previously unavailable archive material from Britain, France and Germany, Haber has written a brilliant analysis of the successive use of chlorine,

phosgene, mustard gas and arsenicals. Quoting figures of industrial output, he shows how the initial German superiority in gas was quickly eroded by the Allies. On both sides, however, there was muddle, and much bureaucratic wrangling over the type of gas to be used, the analysis of the effect of each of them, and whether it should be released from cylinders or shells.

According to the author, gas accounted for only some 3–3½ per cent of the casualties (dead and injured) of the war; this, it needs to be remembered, still represents over a million soldiers. Had the war continued unabated into 1919, Haber argues, the gas casualties, German in particular, would have been much higher because by

penetrating account. As for the Second World War, Spiers omits mention of the one serious incident, in the southern Italian town of Bari, which might have been the flashpoint for a further outbreak of chemical warfare. On 2 December 1943, the US ship *John Harvey* with its cargo of mustard gas was sunk in the aftermath of an air raid. The cargo was top secret and doctors had no knowledge of it, with a result that in the first 24 hours treatment of the casualties was inappropriate and led to the deaths of servicemen from many countries. Fortunately the Germans never cried foul, and the rules of engagement remained the same.

Spiers's account of the so called "yellow rain" incidents, where the US State De-

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The blind lead the blind — casualties of a gas attack after the Battle of Estaires, 1918.

mid-1918 the Allied chemical warfare effort was in top gear and gas was to be used on an ever-increasing scale. Had that happened the interpretation of the value of gas in the First World War might have been different, but as things were Haber considers that it had only a marginal role on the outcome. Should chemicals be used in war today, the situation could well be the same because soldiers are now provided with a high degree of protection. Civilian casualties would be severe, however; simulation exercises of a chemical war in Europe, in which nerve gases are released, suggest that civilian casualties could outnumber the military by 20–1.

The Poisonous Cloud provides no clues as to what Fritz Haber would have thought of this outcome. More about the man himself and what drove him would have been welcome. His son says that as a result of the research for *The Poisonous Cloud* his admiration for his father "as an organiser and military thinker" has grown, and he is convinced that had the Germans not used gas in April 1915, someone else would have. Altogether the researching and writing of this book would seem to have been in part a catharsis for him.

By contrast it is difficult to find much to praise in Edward Spiers's *Chemical Warfare*. Little of it is new. As a history of the subject it is disappointing and the chapter dealing with the First World War is overshadowed by Haber's thorough and

partment has alleged that Soviet-backed forces have used mycotoxins as chemical warfare agents in south-east Asia and Afghanistan, gives the appearance of objectivity. In essence, however, it is a re-statement of the State Department case. Most scientists, and particularly those in government chemical warfare services, no longer believe the allegations and incline to the view that yellow rain is nothing other than bee excrement; even the State Department appears to be backing off on this subject, judging from its recent press releases.

Finally, Spiers advocates modernization of US chemical munitions in Germany. He believes that a comprehensive treaty on chemical weapons, with sufficient provisions for policing violations, will only be hammered out in Geneva — where negotiations for this have been in progress for ten years, and where much has already been agreed — if the United States has a better chemical arsenal. He may be right. But if he is wrong, and the US modernization programme for binary chemical weapons (agreed by Congress in December 1985) leads to a renewed chemical arms race, we will be even less secure. In the next chemical war it won't be the infantry that suffers, but the rest of us. □

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