

TRUTH DUTY VALOUR – VERITÉ DEVOIR VAILLANCE

By Lieutenant-Colonel (ret'd) Peter N. Dawe

Kingston: Quarry Press, 144 pages, \$45.00.

Reviewed by Lieutenant-Commander G.A. Hannah

The Royal Military College of Canada, Canada's only military university, is one of the country's oldest, but probably least known, national institutions. Lieutenant-Colonel Dawe published *Truth Duty Valour* to mark the 125th Anniversary of the Royal Military College of Canada, and to make it better known by showing "the general public, especially families and friends of cadets, what transpires at RMC." The book is neither a history of Royal Military College nor a nostalgic reminiscence of cadet life. Rather, it is a pictorial essay about the College, containing insights into the daily activities of the cadets. It portrays the experiences of a new arrival, the busy, exciting cycle of activities during the academic year, the exhilaration of summer training and, finally, the thrill of graduation, primarily from the perspective of the year 2000. Kingston photographer Jack Chiang provides the view, while Lieutenant-Colonel Peter Dawe's narrative and text provides the interpretation.

Jack Chiang's photographic work is stunning. The majority of his photographs are imaginatively composed, often taken from unusual or innovative viewpoints. For example, an aerial view looking west over the College from a position high over Navy Bay captures all the essential elements of RMC. It highlights the blend of old and new which is encountered everywhere on the campus, and it relates the College to its surroundings and its close connection with the city of Kingston. The sense of RMC's connection with the landscape and its history is a theme that is successfully maintained throughout the book. It is skilfully woven together with the other

essential element of the College experience — people. Again, Jack Chiang's masterful images of people at work and play, engaged in College life or summer training, capture the vibrant energy and the rich and varied fullness of the RMC experience. Lieutenant-Colonel Dawe's narrative and captions are unobtrusive and informative in interpreting the photographic record. Thoughts from cadets past and present on their experience at the College are meaningful and insightful. Comments about the College from other members of the RMC staff provide a broader perspective and an outside insight into the College experience.

Despite the overall high quality of this publication, some of the material selected for inclusion does

not seem to advance the aim of the book and appears out of place. For example, a photo of the Chief's and Petty Officer's Mess in Esquimalt is irrelevant to RMC or to naval summer training.

Truth Duty Valour does not aim to capture what life in the past was like at RMC. Instead, this book is a vivid snapshot of a moment in time in the life of people who attend RMC. For those who have never been to the College and want to know more about this military university, *Truth Duty Valour* provides valuable insight and, hopefully, a sense of great pride in this important national institution. For ex-cadets, though the experiences portrayed may not be exactly theirs, the book resonates with themes that are common and immutable across the years and

will no doubt awaken fond memories from their time at the College. It is well nigh impossible to describe the full breadth and depth of the College experience in any book, but Lieutenant-Colonel Dawe and photographer Jack Chiang have produced an excellent work which certainly comes close.

Lieutenant-Commander Hannah is an Assistant Professor at the Royal Military College of Canada.



WAGING MODERN WAR: BOSNIA, KOSOVO AND THE FUTURE OF COMBAT

by General Wesley K. Clark

New York: Public Affairs Books, 479 pages, \$44.95.

Reviewed by Major Pux Barnes

In *Waging Modern War, Bosnia, Kosovo and the Future of Combat*, former Supreme Allied Commander, Europe (SACEUR), US General Wesley Clark, argues the case that operations in the Balkans during the 1990s showed that Western military capabilities were severely challenged when they were utilized by Alliance-member governments for the purpose of establishing stability in the region using diplomacy backed by force. Simply put, military forces were being used in new roles with which they were neither familiar nor trained to accomplish.

Using a frank tone and language comfortable to the average reader, this book is neither an autobiography nor a definitive explanation of the strategy and tactics of NATO's air campaign against Yugoslavia in Operation "Allied Force". Rather, it is a narrative from SACEUR's perspective on the evolution of the Kosovo crisis, with emphasis on the complex political and military strategy that was played out.

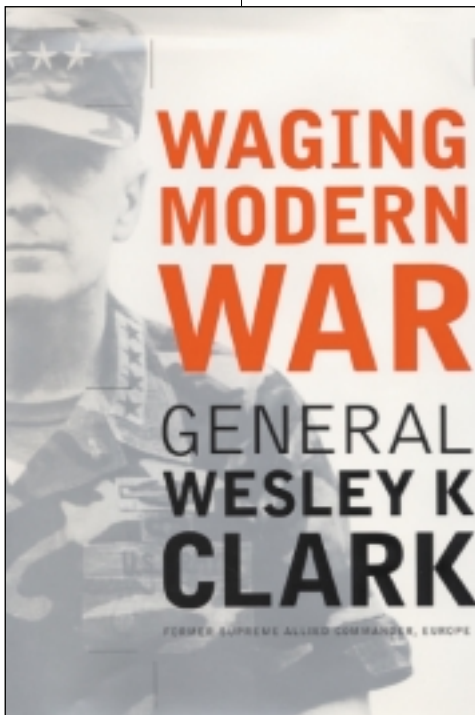
General Clark was the senior military advisor at the peace talks in 1995 that set the ground rules — the Dayton Accord — for bringing an end to the civil war in Bosnia. He was also present at the last minute pre-Kosovo negotiations in Rambouillet, France in 1999. His observations and descriptions of the events and major players provide a unique insight and perspective on the tangled situation that escalated to the armed conflict he commanded from March to June 1999. Given his long involvement and key roles, Clark is certainly the right man to write this book. It is well structured and, for those not familiar with NATO military terminology and acronyms, includes a listing of common abbreviations. Its comprehensive index furthers its value as a reference. A solid conclusion in the summary chapter also helps to bring together the ideas presented.

Clark gives detailed treatment of the intricate, confusing and often frustrating dynamic between SACEUR, his two subordinate commanders, and a variety of lateral commands and organizations whose agendas came to bear dur-

ing "Allied Force". Understanding how he was forced to balance command of NATO forces between the Alliance's Secretary General and, as commander of all US forces in Europe, Clark's own convoluted national command structure, is important to appreciate the challenges SACEUR faced. Clark admits that the "most stressful part of the operation was dealing with Washington", meaning the ambivalence, apathy and indecision he encountered amongst the American political and military leadership, and the constant rounds of conflicting direction from Pentagon and the Secretary of Defense.

Besides recounting and explaining the events surrounding the Kosovo crisis and NATO's 78-day offensive, *Waging Modern War* is of significant value in defining the parameters of the future of war. In Operation "Allied Force", Western military doctrine was sacrificed to the political realities of a 19-member defensive Alliance intent on forcing a diplomatic result. To abide by the politically-imposed limitations, General Clark formulated guidelines for his staff and subordinate commanders which he termed "Measures of Merit": Avoiding aircraft losses, impacting Serb police and military in Kosovo, minimizing collateral damage and maintaining Alliance cohesion. These were tough marching orders for military commanders trained in the proven Principles of War which, among others, called for clear objectives, unity of command, simple plans, economy of force and security.

From his experience as SACEUR, Clark goes on to define the emerging "Patterns of Modern Warfare", limited in scope and subordinate to the political moment. These include the compelling need to avoid civilian casualties, intense scrutiny of military operations by the media, reliance on precision air strikes, reluctance to commit ground troops, and the continued unpreparedness of the West in dealing with emerging crises. This last, warns Clark, will haunt Western governments as they continue to demand that their military forces operate contrary to current strategy, tactics and doctrine. Do Western militaries need to change to anticipate future Kosovo-style conflicts, or will Western policy makers need to alter their expectations of "Diplomacy Backed by Force"?



Captain Pux Barnes is a staff officer at 1 Canadian Air Division HQ in Winnipeg. He flew 25 combat support sorties during Operation "Allied Force" on the NATO E-3A AWACS based in Geilenkirchen, Germany.

LONG SHADOWS: TRUTH, LIES AND HISTORY

by Erna Paris

Toronto: Alfred Knopf Canada, 495 pages, \$36.95.

Reviewed by Major the Rev Arthur Gans (ret'd)

Erna Paris has done all of us a tremendous favour in writing *Long Shadows: Truth, Lies and History*. With a strong lens she examines the reactions of Germany, Japan and France to the Second World War, the United States to the history of American slavery, South Africa's response through the Truth and Reconciliation Commission to *apartheid*, Holocaust survivors' responses to the history of the Holocaust, and the United Nations response to the ethnic cleansing in the former Yugoslavia and the genocide in Rwanda. She does this through extensive research and many lengthy interviews with participants, as well as by bringing a well-trained reporter's mind to each of these areas.

As a trained historian and a person who lived through much of the history of which she speaks, I found myself drawn deeply into her writing, and wondering just how much of what we have been told in our era of 'spin' can be trusted to any degree. Paris is an excellent antidote to recent political campaigns, and a reminder at a very deep level that, despite the valiant attempts of past leaders to ensure their places, good historians have the ability to re-examine evidence years later, and to find the stories behind the stories that were given out at the time.

As someone who has had a profound interest in military ethics for a number of years, I would suggest that this book is a major text. It shows how truth twisted can come back not only to haunt, but also to destroy those who twisted it in the first place. And it also shows how twisted truths can become the gasoline thrown on the fires of racial, ethnic and national hatred, resulting in conflagrations that do enormous damage, not only to individual societies, but to continents and whole social systems.

Also important, particularly for military ethicists, is the emphasis placed upon the development of international humanitarian law and the jurisprudence of international criminal tribunals. Whether it is Nürnberg and Tokyo, or Yugoslavia and Rwanda, international criminal tribunals are an idea come of age. And the excuse, destroyed at Nürnberg, of "I was only following orders," will never eliminate personal responsibility for actions taken during war. They may mitigate our deeds, but in the end, each one of us is responsible for our actions.

I strongly recommend this book as a 'must read'. It will disturb. It will challenge. But it will also help you in your professional development to be a better and more responsible member of the Armed Forces.

Major (ret'd) the Rev. Arthur Gans, *a noted authority on military ethics, is a retired chaplain living in British Columbia.*

THE SAVAGE EMPIRE

by Ian Heron

London: Sutton Publishing (in Canada, Oxford University Press), 208 pages, \$55.95.

Reviewed by Lieutenant-Colonel Bernd Horn.

This is an extremely handsome book. It is attractively bound, printed on quality paper and inundated with extremely interesting illustrations and portraits, most of which originate from the contemporary issues of the *Illustrated London News*. However, the book's contents are not quite as transparent.

This is not immediately evident because of Ian Heron's self-expressed motive for the work, which he states is to "throw some light on the darker corners of imperial history that are too often forgotten". The author acknowledges up front that he has done so "with the eye of the reporter rather than the academic". His primary aim, the author insists, is to simply tell some "great stories."

Without question, he has achieved this aim. The book is well written and each stand-alone chapter is gripping in adventure, drama and martial feats. The book covers a multitude of British colonial military campaigns in the 19th century, and the vast expanse of the Empire ensures that the reader is given a veritable buffet of military history, spanning the globe and diverse cultures. Most of the conflicts covered are not well known. For instance, Heron writes about the cap-

ture and loss of Buenos Aires in 1806-07, the first Burma War from 1824-26, The Tasmanian Black War from 1824-30, the Opium War of 1839-42, the Persian War of 1856-57, the Second China War from 1856-60, the very brief conflict in Zanzibar in 1896, the Benin Massacre in 1897 and the Tirah Campaign in Afghanistan from 1897-98. Although there is no attribution or references given for specific details and facts, the author does include a bibliography that is broken down by chapter.

But what is not so evident is the author's motives. Heron clearly states it is not his intention to be judgmental of the British Empire's effect on worldwide suffering or subjugation. Once again, he reiterates that his objective is simply to tell some stories of martial glory and disgrace which have been broadly forgotten. However, his supposed impartiality is open to challenge, as he comes across heavily judgmental. The book is scathing in its description of what one can only conclude and label as the 'evil empire'.

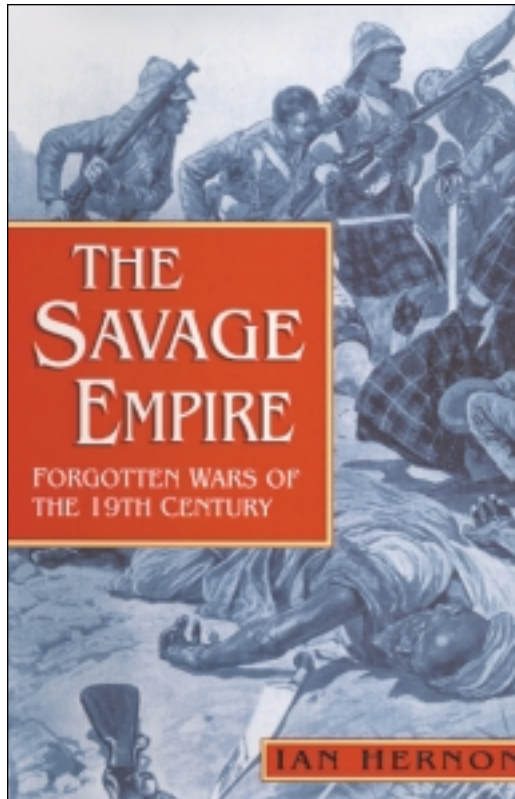
Heron commences with the idea that in the aftermath of the American Revolution it is the British traders, explorers and soldiers who looked to the south and east to expand. As he explains, "it seemed like organic momentum rather than the conscious result of national policies ... one thing simply led to another." The author makes the case that, at first, the British government tried to rein in the expansion because it was administratively costly. However, these

attempts were thwarted by the on-site officials and 'trade moguls' intent on quick profit or military glory. Gradually, he believes the idea of empire seeped into the consciousness of the British nation, and it became part of their identity. It is here where his central thesis emerges. Although acknowledging that the British Empire had some positive impact, such as the abolition of slavery and its enforcement, he quickly adds that the British expansion replaced whips and chains with economic slavery and destabilized ancient societies.

It is from this vantage point that the veneer of "simply good stories" starts to strip away and a deeper apparent motive emerges. In fact, three consistent themes resonate throughout the book. The first, which gives the book its title, is the belief that the British Empire was a savage one. Hernon makes the case that the British harnessed technology and used it brutally across the globe to enforce its will. His chapters are laden with vivid imagery of an oppressive and impersonal administration that responded to any outrage, real or imagined, with a single-mindedness that was void of any consideration of cost, and totally indifferent to loss of life — whether that of its soldiers or others. One example is representative of the general proposition throughout the work. "It was little more than mass murder," Hernon wrote, "using the latest technology." He added, "Like most such 'policing' actions, it was intended to crush any opposition to Britain's imperial might and to protect lucrative trading and political interests."

The second theme is that of soldiering for Queen and country. Repeatedly, in stark contrast to the image painted of the Crown, the reader is left with a

sense of admiration for the common British soldier who continually faced daunting challenges, ranging from hostile terrain to extremely belligerent peoples. Vividly, the difficulties and costs of fighting in malarial swamps and dense jungles, as well as the strain of persevering atrocity, butchery and savagery, are spelled out. In so doing, Hernon provides a window on the Herculean efforts of the British soldiers in carving out and sustaining the Empire. In sum, it is a tribute to tenacity in adversity.



The final theme is that of the rising importance of the war correspondent. Hernon relied on many of their first-hand accounts in the construction of his chapters. He mused at how they were at first generally despised, and "regarded as dangerous meddlers at worst and lickspittle propagandists at best." However, with the rise in literacy at the turn of the century, the mass circulation press provided the correspondents with a degree of power, specifically that to "wreck reputations and instigate reform." The author's respect for these intrepid individuals is clearly evident throughout the book.

The Savage Empire is a captivating and entertaining book. It is certainly worth reading by anyone interested in the British Empire, or military history in general. Although the author's bias and intent are not clearly, nor accurately, articulated at the beginning of the book, they quickly emerge. Nonetheless, this should not detract readers from the many adventurous and often compelling tales of the human drama intertwined with the unfolding of an Empire.

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TANK TACTICS: FROM NORMANDY TO LORRAINE

by Roman Johann Jarymowycz

Boulder: Lynne Rienner Publishers, 362 pages, \$US59.95.

Reviewed by Major Michael McNorgan

Like every good piece of military writing, *Tank Tactics* opens with a statement of the aim: "...to explain cavalry's status and raison d'être within the evolution of armour as the essence of manoeuvre and creativity on the battlefield, and to examine the doctrinal evolution of North American armour — that of Canada and the United States."

Only the first of fifteen chapters actually deals with the cavalry. However, in his discussion of the evolution from horse to tank, the author has explained the process well, ignoring the old bromides about reactionary cavalrymen versus clear-eyed modernists. The true tale is far more complicated and interesting than the myths. The only point with which this reviewer would take issue is the author's discussion of General Andrew McNaughton's failure, when he was Chief of the General Staff, to promote more cavalry and infantry officers. Jarymowycz attributes this to a 'gunner cabal'; it is far more likely that this occurred because of McNaughton's preference for officers, who, like himself, held academic and scientific credentials — something most cavalry and infantrymen of the time were lacking.

The remainder of this work is less straightforward and much more controversial. Its essence lies in a comparison of the armoured forces of Canada, the United States, Britain, Russia and Germany, with side visits to those of France and Poland. The focus, as the title indicates, is on how armour operated in Normandy. The chapter on the American campaign in Lorraine is included to offer a comparison of their armoured operations on terrain and in conditions more closely resembling those encountered by the British, Canadians and Poles on the ground south-east of Caen. The American armoured forces in Normandy, it may be recalled, were severely circumscribed in their actions by the dense hedgerows of the bocage country.

On matters of doctrine, Jarymowycz concentrates on the issue of 'operational manoeuvre' almost to the exclusion of every other aspect of armoured warfare, and within this realm the tank versus tank engagement is probably over-emphasized. What is not discussed is the importance of communications in operational manoeuvre. In fact, *blitzkrieg* was not just the marrying of tanks with dive-bombers. It is better described as the marrying of armour with radio and air support. One of the

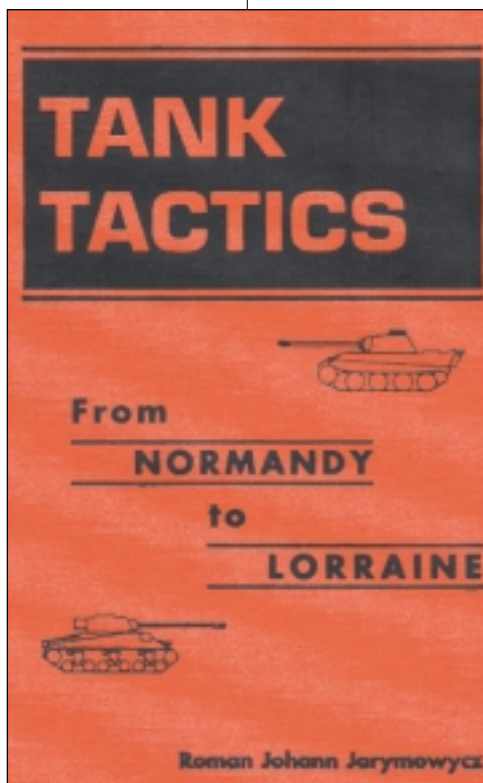
reasons that radio was important was that it permitted the close cooperation of all-arms teams, the true secret of operational success. Finally, the author appears to discount the importance of the anti-tank gun, quite in contrast to the views of senior Canadian armoured officers who, at a January 1946 conference in Britain, reported that anti-tank guns caused far more casualties in Canadian armoured units than did enemy tanks.

The book's penultimate chapter, 'Stavka in Normandy', is a look at how the Soviets would have conducted the Normandy campaign. While this makes for an arresting hypothetical analogy, it does not in any way aid our understanding of the fighting in Normandy because none of the conditions that made the Red Army what it was were present in France. Should penal battalions of Canadian troops have been marched through German minefields? Where were the Western allies to find the manpower to permit the attack ratio of 6 to 1 recommended by the Soviet officers visiting Lieutenant General Guy Simonds on 27 July 1944, just before Operation *Totalize*?

Unfortunately, there are numerous factual errors, which, although unimportant in themselves, serve to undermine the author's credibility in other areas. For example, he describes the practise of sending a very few officers and non-commissioned officers from Canadian armoured regiments to North Africa for three-month attachments as "thousands of Can-Loan officers". Can-Loan was an entirely different programme, in which 673 Canadian officers were seconded to the British Army late in the war. The founder of the Corps, Major General F.F. Worthington, who visited the US west coast in the early years of the twentieth century as a deckhand on a tramp steamer, is described as being a graduate of the University of California! Montgomery is repeatedly referred to as a field marshal in the discussion of the Normandy campaign. In fact, he did not obtain that rank until 1 September 1944, after it was over. Similarly, the Canadian Armoured Corps is frequently given the title 'Royal', a distinction not bestowed until August 1945, when the European campaign had ended.

In summary, *Tank Tactics: From Normandy to Lorraine*, is an interesting book that must be read and interpreted with care, and which will, no doubt, incite much discussion and not a little argument.

Major Michael McNorgan, co-author of *The Royal Canadian Armoured Corps: An Illustrated History*, is with the Directorate of History and Heritage in National Defence Headquarters.



REVIEW ESSAY

FROM GREAT WAR TO GULF WAR:
CHEMICAL WARFARE IN THE
TWENTIETH CENTURY

SEEKING VICTORY ON THE WESTERN
FRONT: THE BRITISH ARMY AND
CHEMICAL WARFARE IN WORLD WAR I

by Albert Palazzo

Lincoln: University of Nebraska Press, 2000, 239 pages, \$US50.00.

KEEN AS MUSTARD: BRITAIN'S
HORRIFIC CHEMICAL WARFARE
EXPERIMENTS IN AUSTRALIA

by Bridget Goodwin

Queensland: University of Queensland Press, 1998, 362 pages,
\$Australian 32.50.

THE ELEVENTH PLAGUE: THE POL-
ITICS OF BIOLOGICAL AND CHEMI-
CAL WARFARE

by Leonard Cole

New York: W.H. Freeman and Company, 1997, 284 pages, \$US14.95.

CHEMICAL AND BIOLOGICAL WAR-
FARE: AN ANNOTATED BIBLIOGRAPHY

by Eric Croddy

Lanham: The Scarecrow Press, 1997, 429 pages, \$US55.00.

Reviewed by Tim Cook

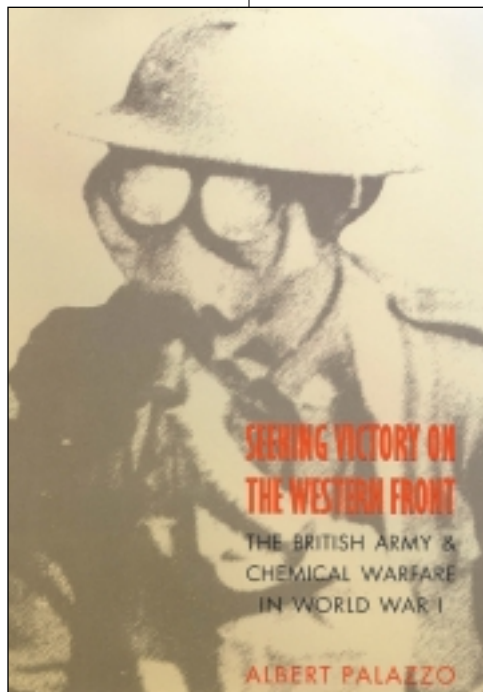
Despite the cessation of the Cold War, the spectre of nuclear, biological and chemical agents remains a terrifying one, be it from rogue countries desperate to offset the imbalance of conventional weapons, the threat of regional conflicts escalating into Armageddon-like engagements, or surprise attacks by terrorists. Although nuclear weapons have overshadowed all others since their first and only use in August 1945, and the threat of biological agents continually creeps into public consciousness through periodic reports of Ebola or other equally gruesome diseases, it is chemical weapons, of the three, that have been most frequently employed throughout the 20th century.

Until very recently, the role of gas warfare in the First World War has been undervalued. Although most histories give space to the first lethal chlorine cloud attack at the 2nd Battle of Ypres in April

1915 — where Entente armies faced an onslaught of chemicals and refused to break — there is little discussion of the employment of gas after that particular battle. Gas had been lauded as the breakthrough weapon that would destroy the stalemate of trench warfare. When it failed to live up to that claim, it was, for a short period, shunted to the periphery. Yet, as delivery systems improved, moving from steel canisters containing compressed gas which could not be controlled (relying exclusively on the wind to blow their contents over the enemy lines), to artillery shells, which could unleash a chemical payload at a specific spot, poison gas became an integral part of all attack doctrines. And just as gas shells proved more reliable and safe than the canisters that tended to result in gas blowing back on those using it, all nations began to manufacture more lethal chemical agents. Chlorine was replaced by the deadlier phosgene and diphosgene; and sneezing and choking gases and dusts were introduced to force soldiers to remove their respirators so that they would fall victim to lethal agents. The introduction of mustard gas in the summer of 1917 forever changed gas warfare, as it burned and blistered skin, thereby negating the psychological protection of the respirator. Gas was used against lines of communication and enemy forming-up points. It was employed in counter-battery bombardment and used extensively to weaken the morale of soldiers. Chemical assaults were indeed a common feature on the battlefield. By 1918, all armies were employing gas shells to assist advancing forces, or to lay down chemical barriers when in defensive positions. At the Armistice in 1918, it was estimated that more than a million casualties had been caused by poison gas.

However, after the war, when many were trying to forget the horrors they had been forced to endure, gas was derided as one of those 'breakthrough' weapons that had failed to achieve its promise. But no weapon on the Great War battlefield delivered victory single-handedly: not the infantry, not tanks, not airpower, and not even the artillery. Although the learning process was long and costly, the key to success was combined-arms tactics. This search for mastery — the gradual honing of attack doctrines — is the focus of Albert Palazzo's *Seeking Victory on the Western Front*.

Using gas warfare as a case study to examine how the British Army learned the hard lessons of war, Palazzo focuses on the ethos within the British Army High Command, and the integration of gas warfare in Sir Douglas Haig's overall strategy. Because of logistics problems, overwhelming defensive firepower, and a steady flow of German reinforcements to fill gaping holes in the trench lines, Haig came to realize that the German armies would not fold after one battle. After the



sideshow campaigns in Mesopotamia and Gallipoli revealed their inability to affect the war, the 'key to victory' was believed to be found only in a strategy of attrition. And a key component of that strategic approach was the employment of poison gas.

In order to understand how the British incorporated gas into their attack doctrine, Palazzo outlines the evolution of tactics and doctrine, the gradual acceptance by divisional, corps and army commanders that gas could assist them in achieving victory, as well as the scientific and manufacturing developments which permitted a steady supply of gas to the front. *Seeking Victory* is an important re-evaluation of the British way of war, and it reinforces recent scholarship which has attempted to examine the important and integral role of gas by all armies on the Western Front.¹ In the process, Palazzo's analysis of the British use of gas by the artillery is a significant contribution to Great War scholarship. With chemical ammunition exceeding one-quarter of all shells fired in 1918, it is clear that gas had been incorporated into the war-fighting doctrine of all nations.

As strong as Palazzo's thesis is in portraying the gradual acceptance of gas by the British forces, he ignores two essential aspects of gas warfare: the development of an anti-gas doctrine and the impact of gas on individual soldiers. With chemical agents being pervasive on the battlefield from 1917 onward, it was essential that all armies develop an effective anti-gas doctrine so as to teach their soldiers the skills they needed to survive. It was not feasible simply to hand out a respirator and whisper 'best of luck, chum'. Respirators were suffocating, claustrophobic devices which always eroded fighting efficiency. Without proper training, how were soldiers to advance through gas barriers laid down by artillery fire? To ignore this element is to miss significant facets of the gas war. Equally distressing is the fact that he all but ignores the soldiers at the sharp end who bore the brunt of the gas war — those in the infantry or artillery at the front, along the lines of communications or working in the field ambulances — and instead focuses on the highest level policy decisions. The rich discourse of letters, diaries and memoirs, all of which provide glimpses into the effects of gas on the individual soldier, were unexamined by Palazzo. Without understanding how soldiers and armies survived within the chemical environment, and the effects of gas not only as a physical agent, but also as a psychological one that wore away at morale, is to further veil the terrors that all men faced at the front. Of course, Palazzo touches on these issues, but his centre of gravity is at a much higher level and his book is all the weaker for it. As a result of his focus, however, *Seeking Victory* is a most welcome addition to the recent historiography exploring how the British succeeded in defeating the German Army in the Great War.²

While the last gas clouds of the war evaporated on 11 November 1918, the impact of gas was not easily forgotten. During the 1920s and 1930s, battlefield chemical weapons remained a highly controversial issue. Opponents of poison gas attempted to have it banned as an immoral weapon, while a much smaller minority

(usually ex-gas officers or military theorists like J.F.C. Fuller and Basil Liddell Hart) continued to argue that gas was a humane weapon because of the relatively low fatality rate of its victims (around 3 percent as opposed to 20 to 25 percent for conventional weapons). Even though the use of gas was banned at the Geneva Conference of 1925, soothsayers and writers of purple prose predicted that poison gas would indeed be used in the next war. And, given its relative success on the Great War battlefields, prophecies regarding the use of gas by air theorists like Billy Mitchell and Giulio Douhet, and the actual use of chemical agents by Japan against China in their conquest of Manchuria, and by the Italians against the Abyssinians in 1936, it seemed clear that the next war would be a chemical one.

Preparations for chemical warfare — the development of new agents and munitions, as well as delivery systems and protective devices — became a major concern for all nations in the 1930s. However, because of inaccurate intelligence, none of the major powers were able to gauge the extent of the likely enemy's progress. Since the Treaty of Versailles prohibited the development of chemical warfare agents in Germany for more than a decade, it was assumed that the United States, Britain and France were vastly better prepared for the forthcoming gas war. However, unbeknownst to the Allies, by 1937 the Germans had developed nerve gases — much deadlier chemicals than anything employed in the last war. For a number of reasons — including a lack of adequate delivery systems, a wariness of gas by senior commanders who both disliked chemical warfare and knew, from experiences in the Great War, that gas could grind movement to a halt when lightening advances were the accepted norms of war-fighting, a fear of retaliation against soldiers and civilians, and a desire not to break international conventions (if only for the propaganda value it afforded the enemy rather than for morale or legalistic reasons) — concern was further exacerbated and chemical munitions were kept in reserve.³ However, these technical, doctrinal and moral prohibitions did little to alleviate the fear of civilians who had been issued respirators and who had been inundated with threats of aerial-chemical bombardments for nearly two decades.⁴ All nations prepared for the outbreak of a chemical war, with scientific experiments augmenting their stockpiles of agents and munitions.

Bridget Goodwin's *Keen as Mustard* explores Australia's chemical warfare preparations and experimentation. The most disturbing aspect of this involved the testing of chemical agents on their own soldiers with the aim of understanding and improving the effects of employing mustard gas in a tropical environment. As a journalist, Goodwin first presented this story in a 1989 documentary of the same name. This book, the product of a decade of research, presents a chilling image of soldiers volunteering to be human test subjects. More than 3000 Australian men were suffocated, gassed and burned in an attempt to understand the physiological and psychological effects of gas wounds on soldiers, and how these agents could be used to best effect against the Japanese. Goodwin's book provides insight into the military culture which capitalized on soldiers'

patriotism and sense of duty to ensure that scientists had a steady flow of willing subjects for their experiments. As the war progressed, and as casualties mounted in the vicious island-hopping Pacific campaign, the Americans became increasingly willing to unleash a chemical assault, with mustard gas as the prime agent, against dug-in Japanese defenders. Much of the American knowledge about the effects of gases on humans came from the Australian experiments. The sad story uncovered by Goodwin carries on into the present: much like what happened to veterans of other wars in this century, the government turned their back on the men who were test subjects, ignoring or deflecting their requests for recognition and compensation for the wartime experiments carried out on them.⁵

Keen as Mustard furthers our understanding of the largely unexplored role of chemical weapons during the Second World War. A range of deterrence issues resulted in chemical weapons never being used in a combat situation between 1939 and 1945, even though by 1944 all sides had huge stockpiles of chemical armaments ready for battle. The spectre of gas remained constant throughout the war. Although the Americans were keen to employ chemical weaponry against the Japanese, the British feared that any breach of real or implied conventions would give the Germans justification for the use of chemicals against the Normandy landings and beachhead.⁶ Although gas may not have been discharged in a battlefield capacity during the war, the threat of chemical agents remained a distressing one for all nations that were forced to plan and prepare for retaliation should they be used by the enemy.

During that savage war, where nations methodically massacred millions, carried out unrestricted submarine warfare and massive aerial bombardment of cities, and sent countless more to their deaths in never-ending campaigns, chemical weapons were still seen as unclean, inhumane and uncontrollable. While concern about the possible use of this form of weapon was in large measure overtaken by fear of the atomic bomb, chemical weapons remained part of the immoral three weapons of mass destruction: nuclear, biological and chemical weapons. But they did not disappear. During the Cold War, the Soviets alone maintained a significant chemical war-fighting capability, with improved delivery systems and rigorous training of their units in operating in a chemical environment. Recent studies reveal that any Soviet invasion of western Europe would surely have been preceded by and fought within country-wide chemical clouds.⁷ The use of gas in the Great War and in the 1930s was not an isolated event in the history of 20th century warfare; rather, it was the non-use of chemical weapons during the Second World War that was the aberration. Chemical weapons may not have been unleashed, but it would be extremely unwise to draw the conclusion that they will never again be used.

Such is the focus of Leonard Cole's *The Eleventh Plague*, a book that deals with the threat of biological and chemical warfare in the last half of the 20th century. Divided into three sections, *The Eleventh Plague* explores experimentation with chemical and biological

weapons in the United States from the time of the Second World War, the rising threat of terrorist organizations employing these weapons, and the great fear produced by the expected use of chemical munitions in the Gulf War. Echoing some of Goodwin's findings, Cole, through access to previously closed government documents, has pieced together the testing of chemical agents against the American population in a series of experiments throughout the country during the 1950s and 1960s. The use of aerial sprayers to release chemical and biological agents against the American population is as shocking as it is revealing. In order to account for large chemical warfare budgets, and genuinely worried about aeri-ally-dispersed chemical and biological attacks, the American military took it upon themselves to test less deadly forms of these agents against American cities. Cole reveals through official documents, litigation transcripts and first hand accounts that America citizens were affected, and more than a few directly perished from these seemingly benign 'attacks.' The threat of these weapons weighed heavily on all nations, and their periodic use caused real concern to civil defence planners.

In relation to chemical war-fighting, the most significant aspect of *The Eleventh Plague* is the examination of the Gulf War and the threat of chemical weapons being unleashed by Saddam Hussein. There were more than a few in the Coalition forces who believed that a desperate and out-classed Iraqi military would resort to chemical and biological weapons to prevent defeat. General Norman Schwarzkopf remarked to his staff before the land invasion, "You can take the most beat-up army in the world, and if they choose to stand and fight, you're going to take casualties; if they choose to dump chemicals on you, they might even win."

Such an appreciation was based on the Iraq-Iran War of 1980 to 1988, when Iraq used chemical weapons against Iranian forces with devastating effect. Mustard gas and various lethal lung gases caused heavy casualties and eroded the morale of Iranian soldiers, forcing several large scale routs. Yet, having supplied Iraq with munitions and chemicals, and seeing Saddam Hussein's regime as more palatable than the Islamic fundamentalists in Iran, there was little condemnation from the rest of world of Iraq's illegal use of chemicals. Therefore, when it became necessary to repulse Iraq's invasion of Kuwait, the Coalition, led by the Americans, accepted with seemingly wary resignation that their forces on the ground would encounter gas. How would soldiers react to the pressure of chemicals that could ravage bodies and minds? How would the ground forces function in the desert heat wearing full NBC protective clothing? If Iraq used these weapons, there was a fear that chemical barriers could grind the Allied offensive to a halt, and result in crippling casualties, much like in the First World War.

As Cole makes clear, moreover, there was serious concern that Saddam Hussein would arm his Scud missiles with chemical warheads and employ them against Israel, with the hope of dragging that country into the war. Massive Israeli retaliation for chemical attacks, including the possible use of nuclear weapons, would

have destroyed the fragile alliance system that the Americans had crafted. Consequently, the Americans promised Saddam Hussein that any use of these outlawed weapons would result in a devastating response levelled against a full range of targets in Iraq. That threat staved off the use of chemicals, but, at the same time, Allied soldiers were inoculated against biological weapons. The illnesses exhibited by sick Gulf War veterans have been attributed, in several studies, to untested vaccines, as well as to the destruction of several chemical munition stockpiles and a variety of other external factors. The fight for recognition by Gulf War veterans is similar to that which Great War veterans, and those Second World War experimental victims, were forced to engage in when their national leaders were all too quick to forget about the effects of chemical weapons on the men who served their countries.

As a nuanced weapon that injured and maimed, acted as a psychological agent, forced the interaction of scientists and soldiers, figured prominently in questions of deterrence, and continues to lend itself to the debate over questions of morality, chemical warfare touches on many aspects of peace and war. Much has been written about chemical warfare, and the wide range of articles and books relating to the subject give some indication of the conflicting and sometimes confusing debates throughout the last century. In this context, Eric Croddy has made a valuable contribution to the field by amassing an extensive annotated bibliography of chemical warfare-related articles and books. From Gulf War

Syndrome to binary weapons, from the use of herbicides in war to chemical warfare combat operations, from arms control to moral issues, Croddy has compiled over 2196 entries, broken down into twenty-four chapters in his *Chemical and Biological Warfare: An Annotated Bibliography*.

Despite the many merits of this Herculean work, readers should be warned not to refer to the introduction of this book for a history of chemical warfare. Episodic and weak — with inaccurate statements suggesting, for example, that 31 percent of all First World War casualties resulted from gas — readers might be advised to turn to the historical texts that Croddy has so skilfully listed in his bibliography. Yet, since the figure of 31 percent — wildly inflated several times over — is cited from a reputable work, students of chemical warfare also need to remember that not all that is written can be accepted at face value. Although most individuals will never need such a specialized source, this book would be a useful addition for all reference libraries.

Chemical weapons have been reviled during times of peace, yet from the Great War to the Gulf War, poison gas has been employed as an agent of death, attrition and psychological terror. All those concerned with the study of war and peace would do well to maintain a keen awareness of our grim chemical past when looking to the future.

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NOTES

1. See Tim Cook, *No Place To Run: The Canadian Corps and Gas Warfare in the First World War*, University of British Columbia Press, 1999, and Donald Richter, *Chemical Soldiers: British Gas Warfare in World War I*, University Press of Kansas, 1992. The definitive work on gas warfare in the First World War is Ludwig Fritz Haber's *The Poisonous Cloud* (Oxford: Clarendon Press, 1986).
2. Bill Rawling, *Surviving Trench Warfare*, University of Toronto Press, 1992, Paddy Griffith, *Battle Tactics of the Western Front: The British Army and the Art of Attack*, Yale University Press, 1994; and Shane B. Schreiber, *Shock Army of the*

British Empire: The Canadian Corps in the Last 100 Days of the Great War, Praeger, 1997.

3. See Stockholm International Peace Research Institute (SIPRI), *The Problem of Chemical and Biological Warfare: Volume I. The Rise of CB Weapons*, Stockholm: Almqvist & Wiksell, 1971, and Richard Price, *Chemical Weapons Taboo*, Cornell University Press, 1997.
4. Tim Cook, "Against God-Inspired Conscience: Perceptions of Gas Warfare as a Weapon of Mass Destruction, 1915-1939", *War & Society*, Volume 18, No. 1, May 2000.
5. A similar episode, although dealing with far lesser numbers, has already been uncovered by

John Bryden in regards to the testing of chemical agents in Canada and against Canadian soldiers. John Bryden, *Deadly Allies*, Toronto: McClelland & Stewart Inc., 1989.

6. John Ellis Van Courtland Moon, "U.S. Chemical Warfare Policy in World War II", *Journal of Military History*, 06 July 1996.
7. See Joachim Krause and Charles K. Mallory, *Chemical Weapons in Soviet Military Doctrine*, Boulder: Westview Press, 1992, for the best work on the Soviet military and their chemical warfare capabilities during the Cold War.