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The Great War and the Anthropocene

Empire and Environment, Soldiers and Civilians on the Eastern Front

Edited by Kerstin S. Jobst, Oksana Nagornaia and Kerstin von Lingen

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The Great War and the Anthropocene

History of Warfare

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Contents

List of Figures and Tables vii
Notes on Contributors x

Introduction: Embattled Nature: Soldiers, Civilians, and Landscapes on the Eastern Front of the Great War 1
Kerstin S. Jobst, Oksana Nagornaia, and Kerstin von Lingen

PART 1
Environment as the Battlefield

1 Contested Landscapes, Manifold Spaces: Analysing the Warscapes of the First World War 33
Christoph Nübel

2 Logistics and Transformation of the Landscape for Mountain Warfare: the Plateaus of Lavarone and Folgaria, 1866–1918 57
Gustavo Corni

3 Destruction of Nature through Warfare in (Austrian) Galicia during the First World War 77
Tomasz Kargol

4 Oil as a Resource and Element of Defence: the Cases of Galicia in 1915 and Romania in 1916 95
Yaroslav Golubinov

PART 2
Environment and Public Health

5 Animal Fighters, Animal Victims: the Animal Dimension on the Russian-Austrian Front of the First World War 127
Oksana Nagornaia

6 "Dangerous Experiment" vs. "Great Blessing": Vaccination and Healthcare Narratives of the Imperial and Royal Army on the Eastern Front (1914–16) 145
Andrea Rendl

7 Macedonia as a Challenge to the Medical and Humanitarian Efforts of the Allied Armies on the *Front d'Orient*, 1915–18 172
Gwendal Piégais

PART 3
Belligerent Landscapes from the Victims' Perspective

8 City, Forts, and the San River—Przemyśl, 1914–15: Militarization of the Landscape and the Question of Environmental Awareness 197
David Novotny

9 Landscapes of the Eastern Front of the First World War in Narratives and Survival Practices of Ukrainian Refugees 221
Liubov Zhvanko

10 Galician Landscapes through the Camera Lens: Visualizing Combat Spaces of the First World War 241
Alexandra Likhacheva

PART 4
Imperial Debris: Demilitarization of Landscapes in the Era of Imperial Collapse

11 Toxic Heritage of the War: Demilitarization of Eastern Front Landscapes 265
Yulia Zherdeva

12 Conceptualizing the Post-Battle Landscape: the First World War Military Cemeteries and Monuments in Galicia 292
Kamil Ruszała

13 First World War Memorialization in Ukrainian Lands (Late 1910s to 1930s) 330
Hanna Bazhenova

14 Conflict Landscapes at the Edge of Empire: Archaeology and Environment of a Desert Insurgency – the Arab Revolt, 1916–18 359
Nicholas J. Saunders

Index 381

Figures and Tables

Figures

1.1 Zille. Source: https://digital.staatsbibliothek- berlin.de/werkansicht?PPN =PPN717979555&PHYSID=PHYS_0027&DMDID=DMDLOG_0001& view =overview-toc 33

1.2 Otto Dix, Granattrichter mit Blumen (1915), Source: akg images 34

2.1 Borders. Source: Cesare Battisti, Il Trentino, Istituto Geografico De Agostini, Novara, 1919 59

2.2 Fortifications. Source: Grande Guerra + 100, www.trentinograndeguerra.it /gg+100 61

2.3 Road under construction. Source: Kriegsarchiv Vienna 63

2.4 Map of telephone cables. Source: Kriegsarchiv Vienna 64

2.5 Ropeway under construction. Source: Private collection 66

2.6 Map of ropeways. Source: Kriegsarchiv Vienna 68

2.7 Civilians at work. Source: Private collection 70

2.8 Barbed wire. Source: Kriegsarchiv Vienna 72

2.9 Landslide. Source: Private collection 72

8.1 Map of Przemyśl Fortress: from Allen L. Churchill, The Story of the Great War. Vol. v, eBook, Dez. 14, 2007, p. 1449 206

10.1 RGAKFD, al. 1243, ph. 35 Teenage children from the village of Rakitno ploughing the land with a horse-drawn plough. March 27, 1916 248

10.2 RGAKFD, ph. 233466 Cattle prepared for slaughter 248

10.3 RGAKFD, ph. 34107 Dead Russian soldiers in the defensive positions near Jarosław. Galicia, 1914-1916 251

10.4 RGAKFD, ph. 2-48400, Dead soldiers near a wire entanglement, 1914 253

10.5 RGAKFD, al. 966, ph. 23 A ruined railway bridge 253

10.6 RGAKFD, al. 1243, Bukovina 1916. Album with photographs of destruction (P.O.Dembitsky's album was transferred to the archive in 1966), ph. 185 256

10.7 RGAKFD, ph. 257876, Destroyed automobiles and tanks on a battle site near a forest road, The Austrian front, 1914 256

10.8 RGAKFD, ph. 232942, A battery of gas containers in a defensive position 257

10.9 RGAKFD, ph. 243296, Casings from artillery shells near a railway line (Russian–German Front) 257

12.1 Trenches on the Dunajec River and graves of fallen soldiers in Sierakowice–Łukanowice (western Galicia). Source: Private Collection of Robert Kozłowski 293

12.2 Division of western Galicia into ten cemetery districts, where 378 war cemeteries were created under the auspices of KGA-Krakau. Source: ANK 296
12.3 War cemetery no. 55 in Gładyszów by Dušan Jurkovič. Source: ANK 303
12.4 War cemetery no. 36 in Podzamcze by Johann Jäger. Source: ANK 304
12.5 War cemetery no. 80 in Sękowa by Hans Mayr. Source: ANK 305
12.6 War cemetery no. 226 in Zawadka Brzostecka by Gustav Rossmann. Source: ANK 307
12.7 War cemetery no. 190 in Janowice by Heinrich Scholz. Source: ANK 308
12.8 War cemetery no. 251 in Uście Jezuickie by Johann Watzal and Emil Ladewig. Source: ANK 309
12.9 Main monument on war cemetery no. 290 in Charzewice by Robert Motka on propaganda postcard. Source: Private collection of Kamil Ruszała 310
12.10 War cemetery no. 80 in Sękowa by Hans Mayr with unrealized chapel. Source: R. Broch, H. Hauptmann, 434 313
12.10A Unimplemented chapel project at the war cemetery in Sękowa near Gorlice, designed by Hans Mayr. Source: ANK 313
12.11 Original decoration by Robert Motka of the war cemetery on Cemetery Hill in Gorlice. Source: ANK 316
12.12 Unrealized monument for military cemetery in Gorlice by Robert Motka with ossuary, chapel and column. Source: "Art in Uniform. The War Graves Department in Kraków 1915–1918" Exhibition in International Cultural Centre, Kraków, November 2022 317
12.13 Unrealized "Hall of Fame" by Dušan Jurkovič as the main architectural accent on the military cemetery Gorlice. Source: ANK 319
12.14 War cemetery no. 91 in Gorlice in its final form: monumental entrance gate and stone wall by Emil Ladewig, and a monumental memorial cross by Gustav Ludwig. Source: ANK 320
12.15 Original and unrealized monument at war cemetery no. 118 in Staszkówka by Anton Müller. Source: Source: ANK
12.16 Realized project of the monument at cemetery no. 118 in Staszkówka by Prof. Kurt Hermann Hosaeus. Source: R. Broch, H. Hauptmann, 169 321
13.1 Map of East-Central Europe in 1910. Map created by Ievgeniia Kuzmenko 331
14.1 Map showing sites mentioned in the text. Source: GARP 361
14.2 The *Darb al-Hajj al-Shami* Pilgrim Road in Wadi Rutm. Source: Author 362
14.3 Ruins of Wadi Rutm Hejaz Railway Station. Source: Author 364
14.4 Makins' Fort, which defended a large Hejaz Railway bridge. Source: Author 366
14.5 Railway wreckage of the Hallat Ammar train ambush, 19 September 1917. Source: Author 367
14.6 Large cistern at the Hajj fort of Fassu'ah. Source: Author 370

14.7 Subterranean cistern at Aqabat Hejazia Station. Source: Author 370
14.8 Laying the water pipeline in 2012 during the 'Disi Water Conveyance Project' Source: Author 372
14.9 Landscape of the Al-Hiyysheh area near Rās Al-Hadīd. Source: Author 376

Tables

4.1 Source of the table is Ostrogradskiĭ, *Otchet Predstavitelia* [Report of a representative], p. 11 101
12.1 Main architects of war cemeteries in KGA-Krakau assigned to war graves districts I–X, Source: ANK, WUoNGW, GW 10; R. Broch, H. Hauptmann, passim; Beata Nykiel, Agnieszka Partridge, and Kamil Ruszała, Sztuka w mundurze: Krakowski Wydział Grobów Wojennych 1915–1918/Art in Uniform: Kraków War Graves Department 1915–1918 (Kraków: Międzynarodowe Centrum Kultury/International Cultural Centre 2022), pp. 114–19 298

Notes on Contributors

Hanna Bazhenova
is a historian, juridical scholar, and political scientist. She is an Assistant Professor at the Laboratory for International Memory Studies at Maria Curie-Skłodowska University in Lublin and Senior Analyst at the Eastern Department of the Institute of Central Europe (Poland). She is the author of four scholarly monographs and numerous publications focusing on Central and Eastern European history and politics. Her main areas of interest are the history of Poland, Russia, and Ukraine; the politics of history and politics of memory; and domestic and foreign policy and the political system of Ukraine.

Gustavo Corni
was until retirement (2018) Chair of Contemporary History at the University of Trento, after having taught in Venice, Chieti, Trieste. Fellow of the Humboldt Stiftung (1992 and ff.), at the Oxford Centre for Hebrew and Jewish Studies (1999/2000) and at the Freiburg Institute of Advanced studies (FRIAS) (2008/2009). A specialist in German history (in particular the Nazi period), of the comparative history of dictatorships and also of the social history of the two world wars, he has published in various languages 20 monographs and several collections of essays. Among the most recent publications: *Guglielmo II. L'ultimo imperatore*, Rome, Salerno, 2022, *Weimar. La Germania dal 1918 al 1933*, Rome, Carocci, 2020; as co-author: *Agrarpolitik im 20. Jahrhundert. Das Bundesministerium für Ernährung und Landwirtschaft und seine Vorgänger,* Berlin, De Gruyter, 2020, and *People on the Move: Forced Population Movements in the Second World War and its Aftermath*, Oxford, Berg, 2009. His current research project is the history of the Austro-German military occupation of North-Eastern Italy in 1917-1918.

Yaroslav Golubinov
is a PhD in History, an associate professor and a dean of the Faculty of History at the Samara National Research University (Samara, Russia). Research field: the environmental history of the First World War, Russian history 1900s-1920s, local history of the Volga region. Selected publications: Golubinov, Iaroslav. 'Oil Fires of the First World War: Military Use and Destruction of Galicia's Fuel Industry', *Quaestio Rossica* 11, no. 2 (2023): 586–602. https://doi.org/10.15826/qr.2023.2.807; Golubinov, Iaroslav A., and Oksana S. Nagornaia. 'Embattled Nature: Men and Landscapes on the Eastern Front of the First World War', in *Science, Technology, Environment, and Medicine in Russia's Great War and Revolution, 1914–22*, edited by Anthony Heywood, Scott William Palmer, and Julia

A. Lajus, 333–51. Bloomington, IN: Slavica Publishers, 2022; Nagornaia, O. S., and Y. A. Golubinov. 'Ėkologicheskai͡a istoriі͡a Pervoĭ mirovoĭ voĭny na Vostochnom fronte: lakuny istoriograficheskogo landshafta i issledovatel"skie perspektivy [The Environmental History of the First World War at the Eastern Front: Historiographic Landscape and Research Prospects]', *Perm University Herald. History*, no. 2(53) (2021): 5–16. https://doi.org/10.17072/2219-3111-2021-2-5-16.

Kerstin S. Jobst
has been Professor of Eastern European Studies at the University of Vienna since 2012. Her main research interests are history of East Central and Eastern Europe, the Black Sea region, the Caucasus region, and the Habsburg Monarchy; the comparative study of empire and colonialism; the history of religion and hagiography; cultures of memory and the politics of history; the history of tourism in Eastern Europe; histories of disaster/catastrophe studies. She is currently directing two international projects: "The Great War and the Anthropocene: Empire and Environment in Eastern Europe (2021-2024) (Conflict Landscapes of the First World War/ Military Landscapes of the Great War, https ://konfliktlandschaften-galizien.univie.ac.at/) with Kerstin von Lingen and Oksana Nagornaia and "Handbook on the History and Culture of the Black Sea Region" (together with Ninja Bumann, Stefan Rhodewald and Stefan Troebst). Among her latest publications are *Geschichte der Krim*, Berlin/Boston 2022 (in English and Ukrainian in 2024); *Geschichte der Ukraine*, Ditzingen 2022, 3rd edition and also as a publication of the German Bundeszentrale für politische Bildung (Federal Agency for Civic Education).

Tomasz Kargol
is professor at the Jagiellonian University, an employee of History Institute of the Jagiellonian University. His research interest covers widely-understood social-economic history of the Polish lands in the 19th and the 20th centuries and the history of the Austrian partition (Galicia), with particular focus on economic self-government, the country, Polish landed gentry, economic aspects of the World War I, towns of Galicia, and sources for the history of Galicia in archives and libraries of Poland, Austria and Ukraine. His academic achievements include several monographs, several critical editions to sources and several dozens of articles in magazines (among others, in "Kwartalnik Historyczny", "Przegląd Historyczny", "Zeszyty Naukowe UJ. Prace Historyczne") and joint publications. The latter include publications on Galicia*: Odbudowa Galicji ze zniszczeń wojennych w latach 1914-1918*, Kraków 2012, *Miasta i miasteczka wschodniej części Galicji pod koniec XVIII wieku, T. V: Rzymskokatolickie instytucje religijne w miastach Galicji, Przełom XVIII i XIX wieku*, Kraków-Lwów 2020.

Alexandra Likhacheva
is a PhD student at the Yaroslavl State Pedagogical University named after K. D. Ushinsky (Russia). Her main research field is the environmental history of the First World War and the Eastern Front. Publication: Likhacheva A., "Romanticization and demonization: Galician landscapes in the individual narratives of Russian combatants during the Great war", in *Quaestio Rossica*, 2023, vol. 11, nr. 2, p. 603–616. DOI 10.15826/qr.2023.2.808.

Oksana Nagornaia
is historian and associated researcher at the Humboldt University of Berlin with her project on the environmental history of the Great War, supported by the Carl Friedrich von Siemens Stiftung. Previously, she taught at Cheljabinsk and Yaroslawl Pedagogical University. She was also a fellow at Gerda-Henkel-Stiftung, the German Historical Institute Moscow, the German Research Foundation, and the Center for Contemporary History (ZZF Potsdam). Publications: Nagornaya O., Golubinov Ya., "Embattled Nature: Men and Landscapes on the Eastern Front of WWI", in *Science, Technology, Environment and Medicine in Russia's Great War and Revolution, 1914-1922*, ed. Anthony J. Heywood, Scott W. Palmer and Julia A. Lajus, Bloomington, Indiana: Slavica, 2022, p. 333-351. Nagornaia O., and von Lingen K., "Conflict Landscapes of the Great War: An Interdisciplinary Approach to the Spatial and Ecological Dimension of Military History", in *Quaestio Rossica*, 2023, vol. 11, nr. 2, p. 571–585. DOI 10.15826/qr.2023.2.806.

David Novotny
is a PhD student and research fellow at the Institute of Eastern European History at the University of Vienna. He is currently writing his dissertation as part of the international project "Great War and Anthropocene: Empire and Environment in Eastern Europe" (funded by FWF and RFBR). His research area is the mutual influences between people and the environment in the Galician theatre of the First World War, with a focus on the experiences of the combatants of the Austro-Hungarian army.

Christoph Nübel
is historian at the Bundeswehr Center for Military History and Social Sciences, Potsdam. He specializes in military history, the history of space, and Otto von Bismarck. He is editorial board member of the *Militärgeschichtliche Zeitschrift* and part of the Arbeitskreis Militärgeschichte e.V. executive committee. His publications include: *Durchhalten und Überleben an der Westfront. Raum und Körper im Ersten Weltkrieg*, Paderborn 2014; "Raum in der Militärgeschichte und Gewaltgeschichte. Probleme, Ergebnisse und neue Felder der Forschung",

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Gwendal Piégais
is an ERC postdoctoral fellow at the Centre for War Studies at University College Dublin. His research focused on the history of the Russian brigades in the Balkans during the Great War, a military contingent sent to the aid of Serbian and to secure Russian influence in the region. This thesis is part of a wider history of the Entente armies on the Balkan theatre of the First World War. His recent research explores the history of the Russian Civil War, focusing on the Allied intervention in Ukraine and in the Baltic region, and on the humanitarian dimension of European civil wars. His work has appeared in several journals and edited volumes, including *20&21. Revue d'histoire, and Guerres mondiales et conflits contemporains.*

Andrea Rendl
is a PhD student and research fellow at the Institute for Eastern European History at the University of Vienna. She is currently writing her dissertation on "Medicine at the Eastern Front of the First World War". As a team member of the international research project "Great War and the Anthropocene" (funded by RFBR and FWF), her main research area is the history of medicine with a special focus on the military medical service of the Imperial and Royal Army in the First World War.

Kamil Ruszała
PhD, Assistant Professor in Modern History at Jagiellonian University, studied history in Kraków (Jagiellonian University), Vienna (University of Vienna) and Prague (Charles University). He specializes in East Central Europe in the 19th to 20th centuries, with particular focus on the Habsburg Empire, WW1, postimperial transformation, refugees, war commemoration and cemeteries, and the social experience of war. Recently published: *Art in Uniform. The War Graves Department in Kraków 1915–1918* (2022); together with: B. Nykiel, A. Partridge; *Galicyjski Eksodus. Uchodźcy podczas I wojny światowej w monarchii Habsburgów* (2022); Eng.: The Galician Exodus. Refugees during the First World War in the Habsburg Monarchy); Postwar *Continuity and New Challenges in Central Europe, 1918–1923: The War That Never Ended*, ed. with T. Pudłocki; Routledge: Taylor & Francis Group (2022). Visiting professor at Institute of Human Sciences in Vienna (2022/2023); University of Buffalo, SUNY (2021); University of Antwerp (2021); University of Illinois at Chicago (2020); Université

Paris 1 Panthéon-Sorbonne (2019). PI of the research projects: Heritage of War 1914–1918 (JU); Forgotten WW1 Refugee Camps in the Austria-Hungary (NCN); Humans in Motion Research Group (JU).

Nicholas J. Saunders
is in the Department of Anthropology and Archaeology at Bristol University. His research includes the archaeology and anthropology of landscape, material culture, and cultural memory of 20th- and 21st-century conflict in Europe and the Middle East. He was co-director of the "Great Arab Revolt Project" in southern Jordan (2005-2014), and has worked extensively in France, Belgium, and the Slovenian-Italian border on his First World War projects. His most recent publications include: "*Killing Time*": *Archaeology and the First World War* (2010), *Bodies in Conflict* (2014), *The Poppy: A History of Conflict, Loss, Remembrance and Redemption* (2014), and *Conflict Landscapes* (2021). His book *Desert Insurgency: T.E. Lawrence, Archaeology and the Arab Revolt* was published by Oxford University Press in 2020. He is co-editor of the Routledge series 'Material Culture and Modern Conflict'.

Kerstin von Lingen
is a historian at the University of Vienna, where she has held the Chair of Contemporary History since 2019. She is Co-PI of the research project "Great War and Antropocene" at the University of Vienna, with Kerstin S. Jobst (https://konfliktlandschaften-galizien.univie.ac.at/). Previously, she worked at the Cluster of Excellence "Asia and Europe in a Global Context" at the University of Heidelberg, with a research group on Allied War Crimes Trials in Asia after 1945. Her research focuses on the history of genocide and violence, especially the Holocaust, decolonization processes (with a focus on Asia), contemporary legal history, studies on memory, identity and apology, as well as global migration studies, and forced labour research. She edited (with Milinda Banerjee): "Law, Empire, and Global Intellectual History", *Forum of Modern Intellectual History* 3 (2018) (https://doi.org/10.1017/S1479244318000239), as well as "Forced Migration and Refugee Resettlement in the Long 1940s: A Connected and Global History", in *Itinerario* 46:2 (2022) (https://doi.org/10.1017/S0165115322000079). Related publications: Nagornaia O., and von Lingen K., "Conflict Landscapes of the Great War: An Interdisciplinary Approach to the Spatial and Ecological Dimension of Military History", in *Quaestio Rossica*, 2023, vol. 11, nr. 2, p. 571–585 (https://doi.org/10.15826/qr.2023.2.806).

Yulia Zherdeva
is a PhD in History. She holds an assistant professor position at the Faculty of History of the Samara National Research University (Samara, Russia),

Department of General History, International Relations and Documentation Science. Her publications (monographs, articles in peer-reviewed journals, chapters in collections) are devoted to the political history of Russia at the beginning of the 20th century, the First World War, and studies of memory, museums, visual culture and the history of education. Selected publications: Zherdeva Yu.A. (2014), "Visualization of atrocities in Russian visual culture in World War One", in Bruish K., and Katzer N. (eds) *Great War of Russia: social order, public communication, and violence at the turn of the tsarist and Soviet Epoch*, Moscow, pp. 81-99 (in Russian).

Liubov Zhvanko

is professor, doctor of history sciences, head of the Museum Centre at Kharkiv State Biotechnology University, Ukraine. From January 2022, she has been on a scientific programme "Polonista" from the The Polish National Agency for Academic Exchange at Nicolaus Copernicus University in Toruń (from 2023 - Institute of Veterinary Medicine Faculty of Biological and Veterinary Sciences), Poland. Scientific interests: the refugees of the First World War, the social processes of the Ukrainian Revolution of 1917-1921, refugees and migration processes of the 20th to 21st centuries, history of Polonia Kharkiv, history of veterinary science in Poland. Publications: *Europe on the Move: The Great War and Its Refugees* (co-ed. P. Gatrell, L. Zhvanko, Manchester, 2017, 2019), *Refugees of the First World War: Ukrainian Dimension* (*1914–1918*) (Kharkiv 2012), *Placówki dyplomatyczne Rzeczypospolitej Polskiej w Charkowie: historia i współczesność* (Kharkiv, 2020), *Per aspera ad astra. Listy Leona Cienkowskiego* (1822–1887) (with D. Kibkalo, Toruń, 2022).

INTRODUCTION

Embattled Nature: Soldiers, Civilians, and Landscapes on the Eastern Front of the Great War

Kerstin S. Jobst, Oksana Nagornaia, and Kerstin von Lingen

In research and public perception, the First World War is understood as a decisive break in the political, economic, social, and cultural development of human civilization. It is seen as a both a moment of acceleration of trends already begun and a catalyst for the transformation of ecosystems and the emergence of new practices of human treatment of nature. Industrial warfare has been assessed by researchers as a turning point in the development of the human–environment relationship, and nature is identified as one (or even the first) of the victims of war.[1] War destroyed natural landscapes and constructed their engineered analogues, anthropogenic landscapes, and conditioned a transformation of economic practices and even the semantic constructions of national communities in relation to nature. Warfare involved not only a considerable number of countries but also the whole diversity of climatic and natural zones. It quickly blurred the boundaries between empires and nations, between front and rear areas, with radicalized practices of exploitation of nature, reckless resource mobilization, and subjugation of the environment to military logics. The armed confrontation changed the spatial order, contributing to the fusion of the natural and man-modelled landscapes into a new entity. Here, the militarized environment—mountains, forests, rivers—became a key factor in individual and collective war experiences. Conflict landscapes and natural elements were often objectified and anthropomorphized as actual combatants.[2]

1 Tait Keller, "Destruction of the Ecosystem", *1914–1918 online. International Encyclopedia of the First World War,* 2014, https://encyclopedia.1914-1918-online.net/article/destruction_of_the_ecosystem, accessed 20 February 2020.

2 Richard P. Tucker and Edmund Russell, eds., *Natural Enemy, Natural Ally: Toward an Environmental History of War* (Corvallis: Oregon State University Press, 2004); Christoph Rass and Mirjam Adam, eds., *Konfliktlandschaften interdisziplinär lesen* (Osnabrück: V&R unipress, 2022); Tait Keller, "Aux marges écologiques de la belligérance: Vers une histoire environnementale globale de la Première Guerre mondiale", *Annales. Histoire, Sciences Sociales* 71, no. 1 (2016): 65–85; Brugnara, Yuri, Marc Segesser, Stefan Brönnimann, Marcelo Zamuriano, Jonas Schild, and Christian Rohr: *December 1916: Deadly Wartime Weather* (Geographica Bernesia G91), Brochure, (Bern: Institute of Geography, 2016). Available at: doi:10/4480/GB2016.G91.01.

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Following the seminal volume *Environmental Histories of the First World War,* an environmental dimension has been added to military history, albeit with a strong focus on the western front lines.[3] This volume addresses the lacuna by focusing on the Eastern Front, and the encounter of German and Austro-Hungarian armies with Tsarist Russia. It discusses the "imperial debris" (Ann Stoler) of these three, subsequently declining, empires, and analyses precisely the ruination of the lands.[4] With regard to the Austro-Russian front of World War I, the impact of military actions on the environment and life-worlds of the population, on ways of dealing with natural resources, and on the industrial transformation of territories and landscapes is still understudied. This volume places Galicia and the region of Tarnów, Lviv and Przemyśl, but also case studies of mountain or desert warfare and their "learning processes", centre stage to discuss how efforts were made to shape nature in such a way that it functioned as an advantage to one's own side, or was combatted fiercely as an enemy.

The disruption of natural and cultural layers, technologization and militarization of ecosystems, and accumulation of human and animal remains, medical waste, faeces and malodour in front-line spaces caused the witnesses to the wartime events to create new terminology which could effectively capture the shocking experience of industrial warfare. Textual and visual narratives of the war feature the following three dimensions of the environment: as a subject and adversary (sometimes even more dangerous than the real enemy); as an object of destruction, invasion, and ordering; and as an anthropological construct defining behavioural strategies and the memorial culture relating to the conflict. The inadequateness of the existing language for combatants and witnesses to the historic events resulted in the emergence of alienated, dehumanized terms, such as "no man's land", "empty space" (*Raum* in German), "desert" (*pustynia* in Russian) or "moonscape", and later also "scorched earth". The strong link of these definitions with the experiences of the Great War, some of which found expression in canonical photos of Western Front landscapes, became an inseparable part of cultural memory about the conflict.

Of course, destructive effects of military technologies on the environment could already be observed before the First World War, but a new type of warfare at the beginning of the 20th century determined the long-term development trends of the relationship between humans and nature and accelerated the processes laid out in the industrial age. In his book *Foams: Plural Spherology*, Peter Sloterdijk argues that the "age of extremes" began on 22 April 1915,

3 Richard P. Tucker, Tait Keller, J. R. McNeill, and Martin Schmid, eds., *Environmental Histories of the First World War* (Cambridge: Cambridge University Press, 2018).

4 Ann Laura Stoler, *Imperial Debris: On Ruins and Ruination*. (North Carolina: Duke University Press, 2013).

the day of the first gas attack. According to Sloterdijk, this event manifested a new understanding of war: from that moment on, the target of military attacks shifted from the enemy's body to its environment, which had to be destroyed or made uninhabitable.[5] This "atmoterror", which was elevated to state policy, made the environment the main adversary and used the technological reshaping of the atmosphere to destroy the enemy. In this way, the essence of warfare was ecologized.

Sloterdijk's vision of the 20th century as a war against humans in their environment fits well with the current Anthropocene debate. The term "Anthropocene" has had a rapid, if not uncontroversial, scientific and political trajectory since 2000. Borrowed from geochronology, it denotes a geological period with a high degree of human activity, which influences ecosystems to a varying extent.[6] Since the introduction of the term, scholars have been debating when the age of Anthropocene started. As Dipesh Chakrabarty remarked, humans are biological agents, but become geological agents only by inventing technologies "that are large enough to have an impact on the planet itself".[7] Many authors have further noted that by the mid-20th century, the negative effects of human activity on nature (for example, through pollution from atomic tests or climate change caused by industrial pollution) had disproportionately increased (the "hockey stick curve", see on this the work of Will Steffen).[8] Striking infographics that fixed a sharp and constant upswing in annual average temperatures brought about the dominance of a climate pessimism (of an irreversibility of doom) in public debates. For its part, the scientific community reacted to this visualization with an explanatory model of the "Great Acceleration", which links the general increase and acceleration of resource consumption from the end of the Second World War with the logic of consumer society.[9] In this vein, recent discussions on the Anthropocene have argued that it was not an undifferentiated Anthropos/humanity that was responsible for the ecological crisis but the historically specific operations of capitalism, and thus some scholars

5 Peter Sloterdijk, *Foams: Spheres Volume III: Plural Spherology* (Los Angeles: Semiotext(e), 2016).

6 Paul Crutzen and Eugene Stoermer, "The Anthropocene", *Global Change. Newsletter*, vol. 41 (2000): 17–18.

7 Dipesh Chakrabarty, "The Climate of History: Four Theses", *Critical Inquiry* 35/2 (Winter 2009): 197–222, here 207.

8 Will Steffen et al., *Global Change and the Earth System: A Planet under Pressure* (Stuttgart: Springer, 2004); Will Steffen et al., "Planetary Boundaries: Guiding Human Development on a Changing Planet", *Science* 349, H. 6254 (2013): 1286–87.

9 Ariane Tanner, "Anthropozän, Version: 1.0", in: Docupedia-Zeitgeschichte, 3 May 2022, http://docupedia.de/zg/Tanner_anthropozaen_v1_de_2022, accessed 20 September 2023, doi: 10.14765/zzf.dok-2386.

favour the term "capitalocene".[10] Indeed, as Langthaler has argued with regard to the First World War and the encounter between the Austro-Hungarian and Russian armies, the Russian occupation of rich farmlands resulted in a decrease in labour and capital, which in combination with adverse climatic conditions then created a dramatic decline in agricultural production and thus a food crisis in the Habsburg Empire.[11]

The attempt by a number of scholars to generalize the understanding of the second half of the 20th century as the lower border of the new geological epoch has led to an effort to restore the concept's heuristic flexibility through the terms "many/multiple Anthropocenes" (in analogy with multiple modernities).[12] Similarly, the definitions of the "capitalocene" and the "technocene" attempt to circumvent the tendency to universalize the Europeanized view, to complement it with an understanding of "asynchronicity in contemporaneity" (Ungleichzeitig im Gleichzeichzeitigen),[13] to differentiate the meaning of the Anthropocene for winners and victims. A more nuanced use of the concept and its historicization open up the prospect of overcoming disciplinary boundaries between the natural sciences and the humanities.[14] As Martin Meiske notes, the Anthropocene can create productive spaces for reflection and favour the overcoming of traditional divisions between environment and society, man and nature.[15] Julia Lajus suggests going beyond the Anthropocene narrative of decline, and instead looking at a complex and ambiguous history of destruction, reconstruction, and entanglement between these processes.[16]

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10 Jason Moore, *Capitalism in the Web of Life: Ecology and the Accumulation of Capital* (New York: Verso, 2015); Jason Moore, ed., *Anthropocene or Capitalocene? Nature, History, and the Crisis of Capitalism* (New York: PM Books, 2016); see also Andras Malm, *Fossil Capital: The Rise of Steam Power and the Roots of Global Warming* (New York: Verso, 2016); Andreas Malm, *White Skin, Black Fuel: On the Danger of Fossil Fascism* (New York: Verso, 2021); an inspiring critique of these can be found in Milinda Banerjee and Jelle J. P. Wouters, *Subaltern Studies 2.0: Being against the Capitalocene* (Chicago: University of Chicago Press, 2022).

11 Ernst Langthaler, "Dissolution before Dissolution: The Crisis of the Wartime Food Regime in Austria-Hungary", in *Environmental Histories of the First World War,* ed. Richard P. Tucker, Tait Keller, J. R. McNeill, and Martin Schmid (Cambridge: Cambridge University Press, 2018), 38–61.

12 Martin Meiske, *Die Geburt des Geoengineerings: Großbauprojekte in der Frühphase des Anthropozäns* (Berlin: Wallstein Verlag, 2021), 20.

13 Tanner, "Anthropozän".

14 Ibid.

15 Meiske, *Die Geburt des Geoengineerings*, 22.

16 Julia Lajus, "Okruzhayushchaya sreda" [Environment], in *Vse v proshlom. Teoriya i praktika publichnoj istorii* [All in the Past: Theory and Praxis of the Public History], ed. Vera Dubina and Andrey Zavadskij (Moscow: Novoe izdatel'stvo, 2021), 24.

The discussions about caesuras and tipping and turning points of the Anthropocene also develop along these lines.

The systematic industrial geoengineering, described by Meiske, took on its hitherto unknown destructive aspect during the First World War.[17] In the same war zones, militarized environmental manipulation meant the targeted and technologically successful destruction of resources and landscapes. At the same time, large-scale projects for the construction of canals and dams, and fortifications, both above – and underground, were carried out, as well as the modernization of infrastructure, such as transport networks. The emergence and development of military geology and military hydrology helped to write the First World War into the history of technology and infrastructure in the Anthropocene. Recent studies carried out by the specialist committee "War-Affected Soils" (BVB, Bundesverband Boden, Fachausschuss Kriegsbeeinflusste Böden), which was founded in 2012, provide evidence of lasting changes in soil chemistry that are recognizable in geological time periods—the so-called "geochemical war signature" from the battlefields of the two world wars. Soil convergence, erosion, changes in acidity, and the emergence of secondary biotopes in shell craters confirm not only the biological but also the geological nature of man and his technologies.[18] It appears that the new type of hostilities during the total war, as well as the subsequent fall of the empires, intensified both the destructive and constructive interaction between people and nature, changing the geological and environmental characteristics of landscapes in Western, Central and Eastern Europe. As Christoph Nübel points out in his article in this volume, the combatants were fully aware of this existential transformation and also reflected it verbally and visually.

The pivotal role of the clash between humanity and the environment during World War I for subsequent historical development is paradoxically at odds with the degree to which it has been studied. Kerstin von Lingen and Oksana Nagornaia argue that the Great War formed the point of departure (or point of no return) in terms of environmental change. Artillery fire, gas attacks, and accelerated resource exploration, with their visible effects on the geology of particular landscapes and their biodiversity, contribute to the classification of the First World War as one of the most important milestones (tipping points) of the Anthropocene. They emphasize, however, that the ambiguous character of the environment, which existed as both an objective force and an anthropological construct,

17 Meiske, *Die Geburt des Geoengineerings*, op. cit.

18 Michael Kerth and Bernd Steinweg, "Versteckte Kriegsfolgen – Wie militärische Konflikte den Boden verändern", in *Konfliktlandschaften interdisziplinär lesen*, ed. Christoph Rass and Mirjam Adam (Osnabrück: V&R unipress, 2022), 317–37, 329.

creates a research dilemma. On the one hand, it expands the subject matter of research as the environment absorbs any physical transformations caused by people as well as cultural beliefs and practices projected onto a given locality. In view of the above, landscape research, counter to the widespread beliefs about the permanence of inorganic nature, must be based on the assumption of their constant mutability. On the other hand, these changes are recorded in written or visual sources, the creation and interpretation of which result in the double subjectification of military experience. What happens to the environment is registered through the distorting lenses of human perception. The interdisciplinary approach blending the methodologies used in humanities and sciences may be able to compensate for this dilemma and open up new perspectives on the military history of the Eastern Front.[19]

The representation of the First World War, including its ecological dimension, in academic literature and public debate is still based on the universalization of experiences on the Western Front. The intensive and long-term preoccupation with various aspects of military operations and their consequences in the countries of Western and Central Europe has led to the development of stable interpretive models and patterns, which are transferred to other theatres of war and world regions without sufficient reflection. Questions about the environmental effects of manoeuvre warfare, about the transfer of nature-based militarization practices to hinterland and inter-war contexts, and about the ecological dimension of "imperial debris" in Eastern Europe are still among the research lacunae today. As the research presented in this volume shows, the First World War on the Eastern Front set the decisive trends in the development of environmental discourses and practices in the countries of Central and Eastern Europe and determined their ambivalent character. On the one hand, there was the indifferent desire to "occupy" nature and subjugate it within the framework of gigantic technological projects; on the other hand, there was an attempt to ensure resource security through environmental policy.

1 Situating the Volume in the Field of Environmental History

Today, environmental history is a dynamic area of historiography, characterized by intensive processes of institutionalization and lively discussions on

19 Oksana Nagornaia and Kerstin von Lingen, "Conflict Landscapes of the Great War: The Spatial and Ecological Dimension of Military History", *Quaestio Rossica* 11, no. 2 (2023): 571–585. doi: 10.15826/qr.2023.2.806.

conceptual foundations, which requires research approaches and terms specific to environmental history. The chronological focus of most of the work is on the 19th and 20th centuries—periods of intensified industrial impact on the environment.

Most works focus not only on the regional but also on the global perspective and aim to reconstruct long-term trends in human interaction with different types of ecosystems and natural resources: forests, steppes, bodies of water.[20] The First World War, here, is just an illustration of particular phenomena or the *longue durée*.[21] The focus of researchers on the institutional dimension of state resource policy and on expert communities obscures the issues of the impact of military operations on the environment, practices of the population's treatment of nature, competing strategies for the development of natural resources in the occupied territories, and the problems of transformation of military landscapes. A special thematic field in this group of studies is the issue of environmental pollution in the course of military operations. Edmund Russell describes specifically the use of chemical weapons, the contamination of soil with liquid fuels and lubricants in places where large quantities of military equipment were moved around, and the increase in the amount of medical waste, which got into the environment.[22]

The anthologies *War and the Environment: Military Destruction in the Modern Age*[23] and *Natural Enemy, Natural Ally: Toward an Environmental History of War*[24] examine the impact of the First World War on the relationship between society and nature, both in relation to particular territories (e.g. Central India, the Philippines, European countries) and in relation to particular practices (deforestation around the world, whaling, pesticide and insecticide use in

20 John R. McNeill, "Woods and Warfare in World History", *Environmental History* 9, no. 3 (2004): 388–410; Julia Lajus, "Environmental History in Russia and about Russia", *Environmental History* 23, 4 (2017): 627–31. See also Oksana Nagornaia, "A Fluid Enemy, Economic Resource and Bacteriological Hazard: Galician Rivers in Anthropological Constructs and Occupation Practices of the First World War", *Vestnik Permskogo Universiteta. Istorya,* 61, no. 2 (2023): 188–199. doi: 10.17072/2219–3111-2023–4-189–199.

21 David Moon, "The Environmental History of the Steppe in a Global Perspective", in *Ekologicheskaya istoriya v Rossii: etapy stanovleniya i perspektivnye napravleniya issledovaniy*, ed. E. E. Merzon (Elabuga: izdatel'stvo Elabuzhskogo instituta KFU, 2014), 8–31; Peter Coates, "Borderland, No-Man's Land, Nature's Wonderland: Troubled Humanity and Untroubled Earth", *Environment and History*, 20 (2014), 499–516.

22 Edmund Russell, *War and Nature: Fighting Humans and Insects with Chemicals from WWI to Silent Spring* (Cambridge: Cambridge University Press, 2001).

23 Charles E. Closmann, *War and the Environment: Military Destruction in the Modern Age* (College Station: Texas A&M University Press, 2009).

24 Tucker and Russell, *Natural Enemy, Natural Ally*.

agriculture, etc.). In these works, World War I is situated within a wider chronological and geographical framework, which firstly confirms its global nature and secondly allows us to see the connection between very remote processes in time and space, which, nevertheless, turn out to be the causes and consequences of this military conflict.

A second group of works is represented by specific case studies on the environmental history of the First World War, including on the destruction of natural resources, recycling of ammunition, and the reclamation of territories, as well as the transformation of landscape perception under the influence of war and in the post-war period. Dorothee Brantz stresses that in the course of military operations the *Schicksalsgemeinschaft*, i.e. literally the "common fate", of man and nature was established, observing that they "threatened each other during the daily practices of war, but merged into a new symbolic unity born of their mutual annihilation".[25] Tait Keller, in his encyclopaedic article "Destruction of the Ecosystem", notes that the hostilities of the First World War changed ecological systems on all fronts, and nature was the main victim of the blow of the first industrial war. Like other scholars before him, Keller focuses on the devastating impact of military operations on the environment of the countries participating in the battles on the Western Front. One of the promising, but not yet elaborated, theses of Keller's article is the assumption that the main catastrophic consequences for local ecosystems the war gave rise to were on the European periphery—in colonial possessions and the occupied territories.[26]

The innovative argument of the editors of the collection *Environmental Histories of the First World War* is a statement on the disproportionate environmental impact of the First World War and the insufficient attention that research has so far paid to this issue. In their opinion, in order to compensate for the existing imbalance, as well as to reconstruct complex processes and their duration productively, it is necessary first of all to extend the chronological framework beyond the direct hostilities. The specifics of the Eastern Front are not reflected in any of the articles in this edition.[27]

The first global experience with chemical weapons during the First World War led to a major waste management problem. National and territorial strategies for a solution to this in the countries of the Western Front attract unflagging

25 Dorothee Brantz, "Environments of Death", in *War and the Environment: Military Destruction in the Modern Age*, ed. Charles E. Closmann (College Station: Texas A&M University Press, 2009), 68–91, here 84.

26 Tait Keller. "Destruction of the Ecosystem".

27 Tucker, Keller, McNeill, and Schmid, *Environmental Histories,* 312.

attention from modern researchers,[28] which is, among other factors, a result of the urgency of the issue: even a hundred years after the end of military operations on the sites of former battles, there are cases of shell detonation and environmental pollution in the locations of the storage, burial, and processing of weapons.[29] Due to the fragmentation of sources and the complexity of isolating the First World War from the context of the subsequent civil wars and local conflicts of the inter-war period, this issue is poorly developed in the successor countries of the Eastern Front.[30]

The key work on landscapes of the First World War to date is the collection *Landscapes of the First World War*, published on the basis of a conference of the same name. In the introductory article, Selena Daly, Martina Salvante, and Vanda Wilcox, editors of the volume, emphasize the decisive role of the Great War landscapes in the soldiers' experience, which was shaped by different terrains (glaciers, deserts, forests etc.). It is not only about the battlefields, though, but also about the front-line and rear spaces, where new landscapes were created under conditions of shortages of raw materials and other resources. An important conceptual remark by the authors of the collection is the thesis of multi-layeredness: the same landscape became the basis for completely different group identities.[31]

A third group of works includes a few publications on the history of occupation policies and practices of the Austro-Hungarian and Russian Empires on the Eastern Front. Environmental issues are not the central subject of research here; what is important are descriptions of plans, specific activities, and, sometimes, their consequences for territories in Eastern Europe.

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28 Hugh D. Clout, *After the Ruins: Restoring the Countryside of Northern France after the Great War* (Exeter: University of Exeter Press, 1996); Jean P. Zanders, "The Destruction of Old Chemical Munitions in Belgium", in *The Challenge of Old Chemical Munitions and Toxic Armament Wastes*, ed. Thomas Stock and Karlheinz Lohs (Oxford: Oxford University Press, 1997), 197–230; Daniel Hubé, "Industrial-Scale Destruction of Old Chemical Ammunition near Verdun: A Forgotten Chapter of the Great War", in *First World War Studies* 8, no. 2–3 (2017): 205–34.

29 "A Gas Leak from World War I Bombs Was Discovered at Sea", Lenta.ru., last modified 2 May 2019, https://lenta.ru/news/2019/05/02/snovagaz/; "The Beach of American Town Was Covered with Sand Mixed with Shells", Lenta.ru., last modified 6 August 2007, https://lenta.ru/news/2007/08/06/beachbomb/.

30 Brian Bonhomme, "Russia's Forests, War and Revolution: Resources, Impacts, Plans, and Realities", in *Russia's Home Front in War and Revolution 1914–22,* book 3: *National Disintegration and Reintegration,* ed. Christopher Read, Peter Waldron, and Adele Lindenmeyr (Bloomington, IN: Slavica Publishers, 2018), 179–206.

31 Selena Daly, Martina Salvante, and Vanda Wilcox "Landscapes of War: A Fertile Terrain for First World War Scholarship", in *Landscapes of the First World War* (London: Palgrave Macmillan, 2018), 1–14.

A pioneering work in this thematic field was the monograph by Vejas Gabriel Liulevicius published in the early 2000s, *War Land on the Eastern Front: Culture, National Identity, and German Occupation in World War 1*.[32] The author analyses the ambitious aspirations of the German occupation authorities (the *Ober Ost* administration) to establish total control over a vast and heterogeneous territory through an infrastructure and an extensive cultural programme that sought to change the identity of the indigenous people. At the same time, the development of the landscape meant not just the restoration of structures destroyed by the retreating Russian army but a complete transformation of them according to the German model. The image of landscapes in the occupied territories played an important role in the Weimar Republic. It was the exploitation of ideas about "German hard work" in the East, as a result of which long-term seeds were supposedly sown, as well as pictures of vast expanses of land in the East, that became the basis of inter-war expansionist propaganda. Processing of experience led to a reduction in the perception of diversity of cultures and peoples in these territories, reduced to the impersonal notion of *Raum*, simply to be conquered and mastered in terms of resources, despite the sacrifices made by the local populations.

While recognizing the undoubtedly innovative nature of this research, it is worth noting some gaps to be filled through the expansion of the chronological and geographical scope, as well as a comparative perspective. Describing the policy of German administration, the work of Liulevicius is most often limited to the discursive level—analysis of plans and policy decisions, paying little attention to the specifics of their implementation in particular territories. He reconstructs the long-term effects of occupation practices, again on the basis of inter-war discussions in Germany, without analysing the real transformation or conservation of landscapes in newly formed states. A comparative analysis—placing the German occupation policy in the context of Austria and Russia's practices of dealing with occupied territories—would allow us to draw conclusions about the impact of World War I on the relationship between man and nature in the states of Eastern and Central Europe in the 20th century as a whole.

Among the latest publications devoted to the occupation practices of 1918 on the Eastern Front, we can mention the book by Leonty Lannik.[33] Although the environmental aspect is not particularly emphasized here, the author

32 Vejas Gabriel Liulevicius, *War Land on the Eastern Front* (Cambridge: Cambridge University Press 2000).

33 Leonty Lannik, *Posle Rossiiskoi imperii. Germanskaia okkupatsia 1918 g.* [After the Russian Empire. German occupation 1918] (Moscow: Evrasia, 2020).

focuses in some detail on the economic development of the vast territory that German and Austro-Hungarian troops were granted after the Treaty of Brest-Litovsk. Economic exploitation of the territories of the former Russian Empire required solving not only the relevant political but also demographic and environmental issues. Thus, the practice of landscape development, typical of the front, was extended to the former hinterland.

The subject of the cities occupied during World War I on the Eastern Front is touched upon in the collection *Cities of the Empire during the Great War and Revolution*. Despite the fact that Russian cities are analysed here mainly through the prism of the communities that inhabited them (social, political, ideological), the authors rarely consider the city as an organism and ecological entity.[34]

Discussion here on the potential of comparative studies of the Austro-Hungarian military experience on the Eastern Front begins with the collection by Wolfram Dornik, Julia Walleczek-Fritz, and Stefan Wedrac on "front change".[35] Analysing the state of research, the editors of the collection emphasize that the recent recognition of the First World War as a global event has led to an expansion of the spectrum of comparative perspectives towards synchronous, diachronic, and transnational perspectives. Putting the first industrial war in the context of longer trends makes it possible to assess it not only as a "generic trauma of the century" or the final act of the (Austro-Hungarian) empire, but also as an accelerant of developments that emerged in the 19th century.[36] In his theoretical reflections on the potential and limits of comparative analysis as applied to World War I, Hannes Leidinger aligns with the position of modern sceptics who reject pure comparative analysis in favour of studying the transfer of ideas, discourses, and practices. In addition, he stresses the importance of taking into account regional specificities, for example, the fact that, unlike in the well-studied contexts of the Western Front, for the countries of Southern Europe, the Russian Empire and the Austro-Hungarian Empire, the murder of the Austro-Hungarian heir in Sarajevo which triggered World War I was in fact the beginning of a new phase of the Balkan Wars, which lasted until 1923.[37] However, the Russian Empire has not yet been set in a

34 Alexei Miller and Dmitrii Chernyi, eds., *Goroda imperii v gody Velikoi voiny i revolutsii* [Cities of the Empire during the Great War and Revolution] (Moscow: Nestor-Istoria, 2017).

35 Wolfram Dornik, Julia Walleczek-Fritz, and Stefan Wedrac, eds., *Frontwechsel: Österreich-Ungarns "Großer Krieg" im Vergleich* (Vienna: Böhlau Verlag, 2014).

36 Dornik, Walleczek-Fritz, and Wedrac, *Frontwechsel*, 9–29.

37 Hannes Leidinger, "Vergleichende Weltkriegsforschung—Analyse eines Trends", in *Frontwechsel: Österreich-Ungarns "Großer Krieg" im Vergleich*, ed. Wolfram Dornik, Julia Walleczek-Fritz, and Stefan Wedrac (Vienna: Böhlau Verlag, 2014), 37–49.

global perspective, or used as a comparison, as has been done, for example, with regard to the Western Front. Only recently have individual works appeared exclusively on the Russian military experience.[38]

When assessing existing scholarship, Stephan Lehnstaedt's article about the possibilities of comparative analysis of the German, Austro-Hungarian, and Nazi occupations in Poland during the First and Second World Wars is very inspiring. Lehnstaedt demonstrates the potential of the analysis of sustainable consequences of various practices in front-line landscapes of the First World War. In making a preliminary assessment, the author has to tackle the problem of taking into account the transformations of territories and ways of management that take place under conditions of war. In his opinion, the devastation of landscapes in the course of military operations inevitably led to a decrease in productivity immediately after the invasion, and resulted in an increase in productivity under occupation.[39] This makes statistical indicators relative and suggests the need for more detailed and in-depth studies of the reciprocal influence of occupation practices on the actual environmental and economic situation.

2 Embattled Landscapes: Environmental and Spatial Lenses on Modern Military History

The argument that warfare during World War I fused natural and anthropogenic landscapes into a new entity known as "war landscape" (*Kriegslandschaft*) was first postulated by Kurt Lewin, who had fought on both the Western and Eastern Fronts and taken part in the campaign in Austrian Galicia. In his

38 Bonhomme, "Russia's Forests"; Anthony Heywood, "Climate, Weather, and Tsarist Russia's Great War, 1914–17: The Wartime Winters", in *Russia's Great War and Revolution, 1914–22*, volume 11, *Science, Technology, Environment, and Medicine,* ed. Anthony J. Heywood, Scott W. Palmer, and Julia A. Lajus (Bloomington, IN: Slavica, 2022), 283–331; Alexander B. Astashov, "Mobilization and Ecology in the Russian Theater of War (1914–17)", in *Russia's Great War and Revolution, 1914–22*, volume 11, *Science, Technology, Environment, and Medicine*, ed. Anthony J. Heywood, Scott W. Palmer, and Julia A. Lajus (Bloomington, IN: Slavica, 2022), 353–80; Oksana Nagornaya and Yaroslav Golubinov, "Embattled Nature: Men and Landscapes on the Eastern Front of WWI", in *Russia's Great War and Revolution, 1914–22*, volume 11, *Science, Technology, Environment, and Medicine*, ed. Anthony J. Heywood, Scott W. Palmer, and Julia A. Lajus (Bloomington, IN: Slavica, 2022), 333–51.

39 Stefan Lehnstaedt, "Besatzungen vergleichen. Methodische Überlegungen zur Okkupation Polens im Ersten und Zweiten Weltkrieg", in *Frontwechsel: Österreich-Ungarns "Großer Krieg" im Vergleich*, ed. Wolfram Dornik, Julia Walleczek-Fritz, and Stefan Wedrac (Vienna: Böhlau Verlag, 2014), 283–303.

article, published during the war in the journal *Angewandte Psychologi*e (1917), Lewin emphasized the phenomenological nature of the war landscape as perceived, imagined, and "directed" (*gerichtet*).[40] According to Lewin, the areas near the front line functioned according to their own laws: as the combatants moved from the rear towards the front, the position of the last friendly trench became for them an imaginary boundary with an unknown and dangerous "nothing" lying beyond. However, the territory near the engagement area was also structured by the logic of war: it incorporated danger zones, such as the villages kept under fire or the crossroads visible to the adversary. Under mobile warfare, danger zones consolidated to form a single space of mortal peril; in trench warfare, this space was broken down into separate islets of endangerment. The structure might vary depending on the combatants' branch of service or the actual situation on the battlefield.[41]

In the current literature, heuristic tools have been developed to describe the emergence of new spaces in a militarized environment. Nicholas Saunders ultimately defines "a conflict landscape" as a "hybrid of the original geographical location, geological nature, the cultural landscape at the time of the military event, that event itself, and the various ways in which it lives on in memory and is physically reconfigured so that real worlds and memory worlds are brought into alignment".[42] Simo Laakkonen introduces another term, *polemosphere* (from the Greek name for the divine embodiment of war), which refers to "those aspects of the environment and society that have been affected by warfare".[43] Johannes Renes argues that our understanding of the First World War as a phenomenon could be made more productive by identifying several types of time layers in compound landscapes: vertical (cultural layers in the usual geological and archaeological understanding of the term); horizontal (geographical, relating to river basins or soil type); palimpsest (traces of various historical periods present on the same stratum); intellectual (landscapes

40 Kurt Lewin, "Kriegslandschaften", *Angewandte Psychologie*, no. 12 (1917): 440–47.

41 Lewin, "Kriegslandschaften", 440–47. See also Wolfram Dornik, "Kultureller Raum und Bewegungskrieg. Raumerfahrungen und Raumdeutungen zu Osteuropa in Selbstzeugnissen deutschsprachiger Kriegsteilnehmer der k.u.k. Armee", *Militärgeschichtliche Zeitschrift* 73 (2014), 367–88.

42 Nicholas J. Saunders, "The Dead and their Spaces. Origin and Meanings in Modern Conflict Landscapes", in *Conflict Landscapes: Materiality and Meaning in Contested Places,* ed. Nicholas J. Saunders and Paul Cornish (London, New York: Routledge, 2021), 3–32, here 6.

43 Simo Laakkonen, "Polemosphere: The War, Society, and the Environment", in *The Long Shadows: A Global Environmental History of the Second World War,* ed. Simo Laakkonen, Richard P. Tucker, and Timo Vuorisalo (Corvallis: Oregon State University Press, 2017), 15–37, here 15.

in art which visualize anthropological constructs); and layers of symbolic meaning (landscapes and objects which have changed their functions due to shifts in dominant discourses and historical narratives).[44] The last few decades have brought an understanding that layered landscapes did not constitute life-worlds for people only but included animals as well as other organisms—a realization which sparked a turn in historical animal studies.[45]

Environmental history methodology, which has been actively advanced in recent years, regards the study of the natural world as a force engaged in the processes of creation and destruction rather than a simple backdrop for human activity.[46] Simultaneously, the natural environment is placed among the key cultural and anthropological constructs encompassing ideas of landscapes and wildlife, practices of exploitation of natural resources by humans, and the conflict between nature and societies.[47] Natural phenomena like the permanent or changing states of the climate, the climatic zones, and natural landscapes are foregrounded as factors moulding the development of communities, as a phenomenon "and a circumstance that has shaped daily life, science, and culture".[48] While accepting the unfeasibility of recreating the history of nature without human presence, environmental historians discriminate between "nature" and "environment", acknowledging the intertwinement of "nature" with human history as a key factor: historical understanding

44 Johannes Renes, "Layered Landscapes. A Problematic Theme in Historic Landscape Research", in *Landscape Biographies: Geographical, Historical and Archaeological Perspectives on the Production and Transmission of Landscapes,* ed. Jan Kolen, Hans Renes, and Rita Hermans (Amsterdam: Amsterdam University Press, 2015), 403–21.

45 Kathleen Kete, ed., *A Cultural History of Animals in the Age of Empire*, vol. 5 (Oxford: Berg Publishers, 2007); Gesine Krüger, Aline Steinbrecher, and Clemens Wischermann, ed., *Tiere und Geschichte: Konturen einer Animate History* (Stuttgart: Franz Stein Verlag, 2014); Rainer Pöppinghege, "Einleitung", in *Tiere im Krieg: von der Antike bis zur Gegenwart,* ed. Rainer Pöppinghege (Paderborn: Schöningh, 2009), 7–14.

46 Oksana Nagornaia and Yaroslav Golubinov, "Ekologicheskaya istoriya Pervoj mirovoj vojny na vostochnom fronte: lakuny istoriograficheskogo landshafta i issledovatel'skie perspektivy" [Environmental History of WWI on the Eastern Front: Lacunas of Historical Landscapes and Research Perspectives], *Vestnik Permskogo universiteta.* Istoriya. 53, no. 2 (2021), 5–16.

47 Andy Bruno, "Russian Environmental History: Directions and Potentials", *Kritika: Explorations in Russian and Eurasian History* 8, no. 3 (2007), 635–50; Brantz, "Environments of Death", 84.

48 Julia Herzberg, Andreas Renner, and Ingrid Schierle, "Introduction. The Russian Cold", in *The Russian Cold: Histories of Ice, Frost, and Snow*, ed. Julia Herzberg, Andreas Renner, and Ingrid Schierle (New York: Berghahn, 2021), 3–18, here 6.

transforms "nature" into "environment".[49] The terms "environment" and "landscape" form another conceptually significant binary which absorbs various combinations of objects and resources as well as diverse social practices associated with their use.[50]

The spatial turn is of special significance for military history research as the era of world wars had an intense transformative impact on all three dimensions of space—physical, social, and mental. Crucial to understanding the potential for the historification of spaces is the assertion that physical spaces, which appear stable and monolithic by definition, must in fact be perceived as fluid and dynamic.[51] The use of the spatial approach in studies of combatants' military experiences means that the geographical space with its supposedly objective characteristics (flat, hilly, mountainous or forested) is perceived by combatants through a certain horizon of expectations.[52] According to Christoph Nübel, spatial military history is concerned with three subject fields: first, the interconnection between armies, military engagement, and the geophysical space; second, pre-war spatial orders and their transformation under military conflict; third, the perception and interpretation of spaces during and after the war. Naturally, the boundaries between these research fields are permeable.[53] As Daniel Marc Segesser notes: "The analysis of the interrelationships between people, the environment, the military and war not only makes it possible to achieve new insights into the history of the First World War, but also shows what effects forms and instruments of war, such as warfare, the organisation and structure of armed forces, as well as efforts to tame or disinhibit war, have on both people and the environment."[54]

Social spaces constructed by a shared framework of existence are filled with new social statuses, roles, and behavioural strategies. Works by Wolfgang Sofsky, Jörg Baberowski, and other researchers of Stalinism and Nazism refer to spaces of violence, or territories where individual social groups identified by

49 Julia Lajus, "Okruzhayushchaya sreda" [Environment], in *Vse v proshlom. Teoriya i praktika publichnoj istorii* [All in the Past. Theory and Practice of Public History], ed. Vera Dubina and Andrey Zavadskij (Moscow: Novoe izdatel'stvo, 2021), 19–32, here 24.

50 Brantz, "Environments of Death", 84; see also Christoph Nübel in this book.

51 Pieter Lieb and Christoph Nübel, "Raum und Militärgeschichte", *Militärgeschichtliche Zeitschrift* 73 (2014), 77–83.

52 Saunders, "The Dead and their Spaces", 7.

53 Christoph Nübel, "Raum in der Militärgeschichte und Gewaltgeschichte. Probleme, Ergebnisse und neue Felder der Forschung", *Militärgeschichtliche Zeitschrift* 73 (2014): 285–307.

54 Daniel Marc Segesser in his conference report "Embattled Nature", published 14 June 2023, https://www.portal-militaergeschichte.de/segesser_nature, accessed 16 September 2023, doi: https://doi.org/10.15500/akm.16.09.2023.

ethnicity, class, or other characteristics were assigned the roles of the victims, executioners, or onlookers. Additionally, these spaces became focal points for new survival strategies based on utmost coercion, or the avoidance thereof.[55] Specifically, the former Eastern Front, where after 1918 "imperial debris" conditioned the radicalization of the war's violent practices, evolved from a "borderland"[56] to the "spaces of terror"[57] and ultimately to the "bloodlands" for totalitarian dictatorships.[58] As the latest research and also the contributions to this volume demonstrate, the First World War irrevocably changed natural and human habitats, especially at the Eastern Front.[59]

Mental spaces entail the creation of imaginary frameworks and continuity, which impact behavioural practices of social groups and political communities. Jennifer Peeples uses the metaphor of "contaminated landscapes", which describes, on the one hand, the visible and tangible environmental aspect of pollution, and on the other, the negative signification of human impact on the environment in specific locations, which results from the dominant societal beliefs.[60] Martin Pollack invokes the term "contaminated landscapes" (*kontaminierte Landschaften*) to refer to the phenomenon of memorial culture whereby the sites of mass murders are marked on the mental maps of a national or global community.[61] One type of mental landscape, which serves as an epistemological strategy describing the interdependence of "place" and "memory", of mythical narratives and spatial materiality while creating new meanings, is the "memoryscape".[62] Memoryscapes shape and maintain hybrid identities of

55 Wolfgang Sofsky, *Zeiten des Schreckens: Amok, Terror, Krieg* (Frankfurt am Main: S. Fischer Verlag, 2002); Jörg Baberowski, *Verbrannte Erde: Stalins Herrschaft der Gewalt* (Munich: C. H. Beck, 2012).

56 Mark L. von Hagen, *War in a European Borderland: Occupations and Occupation Plans in Galicia and Ukraine, 1914–1918* (Washington: University of Washington Press, 2007).

57 Felix Schnell, *Räume des Schreckens: Gewalt und Gruppenmilitanz in der Ukraine 1905–1933* (Hamburg: Hamburger Edition, 2012).

58 Timothy Snyder, *Bloodlands: Europe between Hitler and Stalin* (New York City: Hachette Book Group USA, 2022).

59 Anthony J. Amato. *The Carpathians, the Hutsuls, and Ukraine: An Environmental History* (Pennsylvania: Lexington Books, 2020), 314. In this volume, see the chapters by Golubinov, Zherdeva, and Zhvanko.

60 Jennifer A. Peeples, "Toxic Sublime: Imaging Contaminated Landscapes", *Environmental Communication* 5, 4 (2011), 373–92.

61 Martin Pollack, *Kontaminierte Landschaften* (Vienna: Rezidenz-Verlag, 2014).

62 Alexei Bratochkin, "Gorodskoe prostranstvo" [City space], in *Vse v proshlom. Teoriya i praktika publichnoj istorii* [All in the Past: Theory and Practice of Public History], ed. Vera Dubina and Andrey Zavadskij (Moscow: Novoe izdatel'stvo, 2021), 35–53, here 42.

various social (ethnic) groups. In doing so, the same memoryscape may produce diametrically opposed self-representations (i.e. winner or victim).[63]

3 Structure of the Volume

This volume marks the 110th anniversary of the beginning of the Great War. It is based on the conference "Embattled Nature: Men and Landscapes on the Eastern Front of WWI", which took place at the University of Vienna on 9–10 March 2023, organized by the FWF-funded project "Great War and Anthropocene: Empire and Environment in Eastern Europe".[64] The authors of the volume critically examine the heuristic potential of the concepts of the Anthropocene and belligerent landscapes, the approaches of military archaeology and anthropology, the spatial turn, the history of technology, medicine, and animals, and the perceptions of this destruction by civilians. The less explored Eastern Front, with its war of manoeuvres that spanned all sorts of climates and ecosystems during the four years of struggle, and its scorched earth policy, as well as the declining empires and their toxic debris, is contextualized in this volume through the environmental catastrophes on the Western and Italian fronts, and on the Arab peripheral front. The focus of most of the articles on the Galician theatre of war allows clear parallels to be drawn with the (environmental) catastrophe of modern warfare which is currently taking place in Eastern Europe.

The initial argument of **Christoph Nübel (Contested Landscapes, Manifold Spaces: Analysing the Warscapes of the First World War)** is a conceptual critique of the too broad and too bold understanding of landscape in current academic publications, also in relation to war. Drawing on the concepts of the spatial turn in the study of the relationship between humans and nature, the author insists on a strict categorization of research tools in a balance between anthropological constructions of the environment and its often neglected materiality. The universal research matrix he proposes distinguishes three levels of

63 Anna I. Zalewska and Jacek Czarnecki, "Conflict Gas-Scape. Chemical Weapons on the Eastern Front, January 1915", in Nicholas J. Saunders and Paul Cornish, eds., *Conflict Landscapes: Materiality and Meaning in Contested Places* (London, New York: Routledge, 2021), 66–84, here 79.

64 FWF funding, project No. 3505-G, *Great War and Anthropocene: Empire and Environment in Eastern Europe* (duration: 2021–2024). See website for details: https://konfliktlandschaften-galizien.univie.ac.at/. We would like to thank Erika Stiller-Lanz, Nike Kirnbauer, Paolo Marshyn and Sophie Wenkel for helping with preparing the layout for the manuscript. A special thanks goes to our invaluable copy editor Marianne Noble.

combatants' perception of war spaces: environment—terrain—landscape. Each of these categories presupposes a specific combination of the mutual influence of "warlike man" and nature. Overall, Nübel places the First World War within the dynamics of modernity and highlights the essential difference between the focus on the maximum exploitation of resources in the industrial age and their senseless destruction in the First World War. The author argues for the transition from viewing the military conflict as a special phenomenon of the Anthropocene to its classification as part of the development of "man as a geological being", as well as for the historicization of the perception of these existential changes on the part of the bearers of experience themselves.

Tomasz Kargol (Destruction of the Nature through Warfare in (Austrian) Galicia during the First World War) identifies and analyses the extent of the damage caused to the nature of Galicia by the First World War and the Russian occupation. The author draws on the documents of specialized commissions and experts who had noted the state of the soil, forests, beekeeping, hunting, and fish farming. An important research perspective is the identification of the role of local residents not only as unconditional victims but also as active agents in changing environmental practices in the province. While the Russian armies cut down forests for infrastructure and deliberately set them on fire during their retreat, both the Austrian artillery and the defenders of Przemyśl caused significant forest damage (see also the article by David Novotny in this volume). Against the backdrop of the collapse of the system of nature management caused by the military, the local population felt entitled to share in the natural wealth and started uncontrolled logging of the forests and even the urban parks of Lviv. And while agronomists in professional publications did not note any significant impact on soil conditions, but rather pointed to the lack of infrastructure and materials, estate owners hoping for state compensation reported huge losses and complained that it would be impossible to recultivate the land in the long term. Another actor in the article is nature itself—an invasion of forest pests (caused by the lack of forest maintenance during the war) had no less destructive an effect on the condition of the trees than artillery fire, and the animals and birds frightened by them changed their habitat, continuing the change in the ecosystem as a whole.

Using the example of the treatment of the oil fields in Galicia and Romania captured by the Russian and British armies, **Yaroslav Golubinov (Oil as a Resource and Element of Defence: The Cases of Galicia in 1915 and Romania in 1916)** notes that during the First World War the attitude of military commanders toward natural and infrastructural resources had changed, and the maximum destruction of these resources without regard to the consequences was now the main focus. In fact, calculated economic and ecological

damage became the goal of the measures taken. Another line of development described by the author is the inclusion of both military and civilian objects in the concept of militarized terrain. This understanding was fostered by the experience of the First World War, in which objects and resources had their usual functions reversed. Accordingly, the forward planning of resource practices was revised in favour of the indiscriminate destruction of anything and everything. And the enemy to be exterminated was no longer segregated from its environment—it too had to be destroyed.

As **Oksana Nagornaia** points out in the article **Animal Fighters, Animal Victims: The Animal Dimension on the Russian-Austrian Front of the First World War**, the First World War on the Eastern Front not only caused environmental destruction but also made certain animal species combatants and direct victims of the battles. The concentration of millions of horses and herds of cattle from the imperial territories on a narrow strip of the front, the highest mortality rate of exhausted and emaciated animals, and the fluctuation in numbers of horses due to their trophy status fundamentally changed the biodiversity in the two collapsing empires of the Russian-Austrian front. The fated fusion of humans and animals as mobilized living beings led to the expansion of practical humanitarian medicine, rehabilitation, and war invalidization to include horses and dogs. The Russian and Austrian reports of experience ranged from cheery reports of successes at certain sections of the front to testimonies of a general collapse of the food supply. In the Austro-Hungarian army, there was already a discussion before the end of the war about whether the organic force at the front should finally be replaced by a mechanical one. Apart from the technocratic cynicism of the military command, the individual and visual narratives about the animals at the front fitted into the literary canon of romanticized nature and emotional mourning for the (four-legged) comrades on the battlefield.

In the article **"Dangerous Experiment" vs. "Great Blessing": Vaccination and Healthcare Narratives of the Imperial and Royal Army on the Eastern Front (1914–16), Andrea Rendl** uses the example of the Imperial and Royal Army to show that perceptions of climate, landscape, and population directly determined the "learning process" of military doctors on the Eastern Front. The colonial stereotypes spread in the military command about the high epidemiological risk of the eastern territories of the empire (Galicia, Bukovina) were based, among other things, on socio-ecological and socio-cultural constructions of the harsh climate and the uncultivated environment in which the ethnically foreign and hygiene-illiterate population lived. The military command's refusal to vaccinate combatants who were deployed at high risk of cholera epidemics was justified by the lack of expert knowledge about the effectiveness of

vaccination and the certainty of its debilitating effect on the soldiers' bodies. Controlled and engineered measures in militarized landscapes (disinfection, boiling of water, waste disposal) were considered more effective compared to preventive (and potentially debilitating) measures in human organisms. The radicalization of this position coincided with the transfer of the bulk of the armies to the occupied territories of the Russian Empire. The foreign local population, defined as an integral part of the conquered and mobilized landscapes, was subjected to forced vaccination regardless of its potential effects.

Gwendal Piégais (Macedonia as a Challenge to the Medical and Humanitarian Efforts of the Allied Armies on the *Front d'Orient*, 1915–18) writes about the Entente Allies' war on the Oriental Front, placing it within the tradition of the colonial wars of the 19th and early 20th centuries. In Macedonia, the French and Russian armies were primarily challenged by the environment, with malaria swamps posing the greatest threat. The author notes that the state of the environment worsened in the areas that were not demilitarized after the Balkan Wars (1913–14). Stagnant water and uncultivated farmland became favourable breeding grounds for infected insects. The medical statistics from this theatre of war confirm that the environment claimed more human victims than the armed enemy itself. The French and Russian armies here confronted a different kind of warfare compared to the other fronts of the First World War. On the other hand, this type was well known from the centuries of colonial conquest and the Allies here moved to other models of military terrain development. This was facilitated by the personal continuity of experience of soldiers, commanders, and medics. Large-scale measures to rehabilitate the space (drainage, purification of water sources) were presented as a civilizing mission of France or Russia in the region. However, the show hospitals on display in the visual propaganda were only the tip of the iceberg, below which structural and professional deficits were hidden. The final defeat of the armies in the face of environmental threats led to a rapid politicization of the medically used spaces, and the rebel soldiers demanded evacuation from this conflict landscape.

A particular case of secondary militarization of a wartime landscape is the subject of **David Novotny**'s article **City, Forts, and the San River—Przemyśl, 1914–15: Militarization of the Landscape and the Question of Environmental Awareness.** The author examines the preparation of Przemyśl—the largest Austrian fortress in the East—for confrontation with the Russian armies, further siege, and surrender through the double prism of official military documents and individual narratives. The cold-blooded calculations of the military command, of which the environment became a victim, entailed the construction of new fortifications and a ruthless clearing of the area in front of the

fortress: forest clearing and burning of the surrounding villages. At the same time, the transformation of the landscape into a military terrain took place under the influence of negative stereotypes relating to the Galician population, especially Greek-Catholic Ruthenians. Total control over the fortress territory and the natural features, such as the San River, the vegetation, and the numerous horses, was enforced through the rigid domination of military objectives. First-person documents, balanced by the author according to gender and profession, portray the perception of the natural landscapes on the part of the forced inhabitants of Przemyśl. Under siege and enemy air raids, the fortification praised by the commanders is perceived by the actors as a hopeless trap. Under the conditions of industrial warfare, the image of nature served for the victims of the siege as an emotional outlet for the longing for a peaceful life, and as an expression of helplessness and fear of death.

Liubov Zhvanko reconstructs Ukrainian refugees' perceptions of the militarized landscapes of Galicia in her article **Landscapes of the Eastern Front of the First World War in Narratives and Survival Practices of Ukrainian Refugees.** The emergence of a militarized terrain destroyed the life-worlds of various pre-war social groups and literally displaced many of them from physical-geographical spaces. The mass of refugees on the Eastern Front forced all warring parties to institutionalize their policies towards these people and create new structures and practices. The deficient or effective development of these social spaces structured by military violence depended on the logic and temporality of war. On the other hand, the refugees—mostly women and children—themselves reshaped and constructed urban and rural spaces and embedded their militarized everyday lives in them. Barracks for temporary accommodation, evacuation points at railway stations, and signposts in other languages emerged in parallel with the strictly militarized structures. The author also reconstructs a mental map of the refugee landscapes on the Eastern Front, from railway stations to camps to schools, hospitals, and individual graves.

Alexandra Likhacheva (Galician Landscapes through the Camera Lens: Visualizing Combat Spaces of the First World War) works with Russian war photographs, which are poorly served in terms of precise and detailed attribution. Despite this heuristic limitation, the source base allows us to explore the visual construction of wartime landscapes on the Austro-Russian front and in occupied Galicia. Strict control over the production of visual interpretations of the war and poor technical equipment of armies with portable private cameras led to the dominance of institutional appropriation of space through photography in the early stages of the war. Images of Galicia's natural resources, destroyed or constructed infrastructure, and demolished

or perfectly functioning equipment became propaganda codes, an object of military communication, and a mental mobilization tool of the front and rear. The few private photographs are part of military travelogues that romanticized or demonized the journeys through the death landscapes in literary canons. Beyond the potential for reconstructing visual narratives described above, the photographs become important testimonies for contemporary researchers not only of the imaginary but also of the material environmental impact of the war. The deforested Carpathian Mountains, the inadequately buried remains of people and horses, and the local people recruited for the construction of infrastructure projects, including women, are also pictured victims.

Yulia Zherdeva states in her article **Toxic Heritage of the War: Demilitarization of Eastern Front Landscapes** that it is difficult and even impossible to draw a clear chronological line between the emergence of conflict landscapes and their demilitarization on the Eastern Front, considering the further development of these "spaces of terror" (Felix Schnell). The author defines demilitarization as a complex set of orders to minimize the impact of war on the front line through sanitary, hydrological, and disinfection measures. The technocratic approach that dominated the military institutions of the Russian army as a legacy of the industrial age freed the command from ethical norms and emotional feelings regarding the environment. However, the destruction of landscapes due to the war and the increasing epidemiological threat made it necessary to develop procedures for sanitzing, recultivating, and decontaminating the front-line terrain while the war was still in progress. The concentration of weapons, unburied human corpses, and animal remains, as well as the effects of gas attacks, presented an insurmountable challenge to the Russian armies on the Eastern Front, according to the author. It was, nevertheless, the attempt to create a kind of system that defined the First World War as a precursor to the ecological turn and set important trends in the post-war development of discourses and structures. Rather, the individual experience of encountering a mobilized environment contributed to a more sustained mental demilitarization that manifested itself in the romanticization of nature and the humanization of the treatment of animals at the front.

A memorial dimension of the Galician military landscape and thousands of casualties on all sides is explored in **Kamil Ruszała**'s article **Conceptualizing the Post-Battle Landscape: The First World War Military Cemeteries and Monuments in Galicia**. After the breakthrough at Tarnów/ Gorlice in 1915 and the reoccupation of the province, the Austro-Hungarian army needed not only an epidemiological solution but also military monuments to the fallen soldiers. Therefore, parallel to the ongoing military operations in the east, intensive work was carried out in western Galicia on the construction of cemeteries

and memorials. The magnitude of the task and the presence of the dead of different nationalities created a competing interpretive space, in the making of which Austro-German, Slavic, and (following the intervention of the German emperor himself) German architects and sculptors were involved. Each of them was authorized to adapt the commemorative landscapes of Galicia to the style of the national schools and to personal preferences. Materiality of burials, e.g. standardized cast-iron crosses on graves, served as unifying elements. The climax of glorification was the design of a memorial in Gorlice, which was deliberately set apart in its pathos from the local graves as a place of mourning for the fallen. The author concludes that even after the end of the war and the collapse of multinational empires, the monuments erected during the war persist as illustrations of "imperial debris" and testify to the commonality of interpretations of the cult of the fallen in the successor states.

The emergence of First World War memorial landscapes in postwar Ukraine is explored by **Hanna Bazhenova** in her article **First World War Memorialization in Ukrainian Lands (Late 1910s to 1930s)**. On the one hand, the resting places of the fallen constituted demilitarized spaces, as they were constructed to regulate the hastily created and scattered war graves along the Eastern Front. Their concentration in specially designated places, their arrangement according to sanitary requirements, and architectural solutions designed to fit into the existing natural or urban landscapes implied the exhumation and reburial of remains. On the other hand, with the end of the war, the territorial divisions of former multi-ethnic empires led to a reburial of military conflicts in a symbolic dimension. The marking of the graves of soldiers and officers of the First World War as Ukrainian remained a sign of the openness or closedness of the memorial spaces of the successor states to the presence of ethnic minorities in the interwar period. The national variations described by the author (especially the situation in Poland) are a clear example of the persistence of conflict landscapes.

Nicholas J. Saunders in his contribution **Conflict Landscapes at the Edge of Empire: Archaeology and Environment of a Desert Insurgency—the Arab Revolt, 1916–18** takes the reader away from the Eastern and even Western Fronts of the First World War into the Jordanian desert and the realities of Bedouin and British guerrilla warfare against the collapsing Ottoman Empire. From the perspective of recent archaeological excavations, he reconstructs the specific interweaving of traditional military practices and new technologies of destruction under the extreme conditions of the desert landscape. The peripheral location of the theatre of war and its only indirect connection to the main conflict and front lines of the First World War nevertheless allows for an effective research matrix for the comparative analysis of different

models of human–environment interaction (traditional, industrial, belligerent). The objects of guerrilla warfare were anthropogenic rather than natural landscapes—rapid raids are concentrated in the stations along the Hejaz railway. In turn, these valuable forest areas were cleared to run the railway, plunging the region into ecological disaster. Modern archaeological investigations of the stratified landscapes of Arabia, which are horizontal rather than the usual vertical, mean identifying palimpsests of materiality and separating them from written narratives and film images.

4 Conclusion

The phenomenology of belligerent landscapes of the First World War makes it necessary to enrich our research lenses and methodology with approaches derived from environmental history and the spatial turn. The contributions presented in this volume show how fruitful it is to shift the research focus of the spatial and environmental history of the First World War from the Western Front to other theatres of war. This includes the development of debates on the beginning of the Anthropocene and the role of the First World War as a catalyst for trends that had been in development since the industrial age in the relationship between humans and the environment. It is important that another, hitherto little studied, dimension emerges in the texts presented: the impact of the war on civilians and interaction with militarized nature and anthropogenic spaces on the part of the "little people", and refugee agency. This perspective is important precisely because it also connects us to the tragic events of today and the armed conflict in Ukraine, where we sadly witness similar techniques being used to destroy life-worlds and the environment in these lands again.

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PART 1

Environment as the Battlefield

CHAPTER 1

Contested Landscapes, Manifold Spaces: Analysing the Warscapes of the First World War

Christoph Nübel

The First World War was a war against nature. Shelling and trench building ruined entire regions. But the war brought massive changes beyond the front lines as well. The consequences of excessive exploitation of resources—the cutting down of forests, the intensification of agriculture, the expansion of mining—left their mark all over the world. In this respect, the First World War was part of developments that had gained massive momentum in the 19th century. Industrialization had already made it clear that man was capable of profoundly changing his environment.[1]

For this reason, some historians recognize in this epoch the beginning of a new earth age, the Anthropocene. On the one hand, the destruction of the landscape on the fronts since 1914 represented a continuation of the logics of industrialization, as Tait Keller has rightly noted.[2] On the other hand, however, it differed fundamentally from this because the destruction was not aimed at the extraction of new resources, but rather considerable resources were used here to destroy the enemy's capacities. This military logic, further condensed in matériel battles and positional warfare, was fundamentally different from the processes of civilian life. This gap gave rise to the topos of senseless destruction, which added to the idea of the futility of the war, which already shortly after its end became popular in Great Britain, and in other states as well.[3]

1 Charles E. Closmann, ed., *War and the Environment: Military Destruction in the Modern Age* (College Station: Texas A & M University Press, 2009); Richard P. Tucker, Tait Keller, John R. McNeill, and Martin Schmid, eds., *Environmental Histories of the First World War* (Cambridge: Cambridge University Press, 2018).

2 Tait Keller, "Mobilizing Nature for the First World War", in *Environmental Histories of the First World War*, ed. Richard P. Tucker, Tait Keller, John R. McNeill, and Martin Schmid (Cambridge: Cambridge University Press, 2018), 1–16, here 5.

3 "The land was abused", writes Nicholas J. Saunders, "Material Culture and Conflict: The Great War, 1914–2003", in *Matters of Conflict: Material Culture, Memory and the First World War,* ed. Nicholas J. Saunders (London: Routledge, 2004), 5–25, here 8.

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The transformation of landscapes during the war is interpreted as a central feature of the years 1914–18.[4] With the emergence of everyday and cultural history, these landscapes have become the focus of research. Cultural memory studies were quick to point out the central role of landscapes in the culture of remembrance of the First World War.[5] Like the war as a whole, they were essentially described as "apocalyptic".[6] Closely related to this research are studies in art history, which, however, often focus on elite discourses.[7] Meanwhile, the spatial experience of ordinary soldiers has been identified as a core feature of wartime life and a key to analysing the war experience in general.[8] Environmental history has pointed to the profound transformations that war brought about across the globe.[9] Research on the conflict landscapes of the First World War has also been fruitful. Emerging from battlefield archaeology, it focuses on material culture and thus representational relics, but also includes interpretations of the battle and its spatial narratives in the analysis.[10] Conflict landscapes are open to an interdisciplinary approach, which is indeed particularly

4 Jay Winter, *Sites of Memory, Sites of Mourning: The Great War in European Cultural History* (Cambridge: Cambridge University Press, 9th ed. 2008), 178.

5 George Mosse, "War and the Appropriation of Nature", in *Germany in the Age of Total War*, ed. Volker R. Berghahn and Martin Kitchen (London: Routledge, 1981), 102–22. More recent examples are Jay Winter and Antoine Prost, *The Great War in History: Debates and Controversies, 1914 to the Present* (Cambridge: Cambridge University Press, 2005), 173–91; Mark Connelly and Stefan Goebel, *Great Battles: Ypres* (Oxford: Oxford University Press, 2018).

6 Winter, *Sites of Memory,* 178.

7 Annegret Jürgens-Kirchhoff, *Schreckensbilder: Krieg und Kunst im 20. Jahrhundert* (Berlin: Reimer, 1993); *Great War Modernism: Artistic Response in the Context of War, 1914–1918*, ed. Nanette Norris (Lanham: Fairleigh Dickinson University Press, 2015).

8 Dorothee Brantz, "Environments of Death. Trench Warfare on the Western Front, 1914–1918", in *War and the Environment: Military Destruction in the Modern Age*, ed. Charles E. Closmann (College Station: Texas A & M University Press, 2009), 68–91; Wolfram Dornik, "Kultureller Raum und Bewegungskrieg: Raumerfahrungen und Raumdeutungen zu Osteuropa in Selbstzeugnissen deutschsprachiger Kriegssteilnehmer in der k.u.k. Armee", *Militärgeschichtliche Zeitschrift* 73 (2014), no. 2, Special Issue: Raum und Krieg, ed. Peter Lieb and Christoph Nübel, 367–88; Christoph Nübel, *Durchhalten und Überleben an der Westfront: Raum und Körper im Ersten Weltkrieg* (Paderborn: Schöningh, 2014); Ross Wilson, *Landscapes of the Western Front: Materiality during the Great War* (London: Routledge, 2011).

9 Keller, "Mobilizing Nature for the First World War".

10 Nicholas J. Saunders and Paul Cornish, *Conflict Landscapes: Materiality and Meaning in Contested Places* (Milton Park: Routledge, 2021); Christoph Rass and Mirjam Adam, eds., *Konfliktlandschaften interdisziplinär lesen* (Göttingen: Universitätsverlag Osnabrück, 2022).

suitable for an analysis of historical spaces.[11] What becomes clear is that spatial studies can "deepen our understanding of the totalizing and globalizing dynamics of the first global conflict".[12]

These publications significantly increased our knowledge of the First World War. Nevertheless, there is still a need for clarification and further research. This concerns, firstly, terminology. Numerous books on the First World War bear the term "landscape" in their title. A closer look, however, shows that they are less about landscapes themselves than about examining different spaces of the war. Topics include regional effects of the war on the cultivation and extraction of resources, the construction of transport routes, and the legacies of war on former battlefields.[13] In some cases, landscapes are even referred to in a more metaphorical sense, for example, when the spatial distribution of infrastructures is described.[14] This way of dealing with the concept of landscape proves that the term is used to cover many, predominantly spatial, objects of research. However, it becomes problematic when individual understanding of space, as well as contemporary and later interpretations, are not sufficiently separated from each other and landscape thus becomes an undefined catch-all term for historical spaces. As early as the 19th century, Johann Gustav Droysen, one of the founders of modern history, called for saying not only *that* space is, but *what* space is.[15] This essay, therefore, proposes to dismiss the overburdened concept of landscape and to speak instead of spaces or, as the term proposed here is, the warscapes of the First World War.

Secondly, it remains worthwhile to examine the spatial experiences of the time more closely and to find out how combatants created the spaces of war, changed them, lived in them, and perceived them. George L. Mosse was one

11 Adam Izdebski et al., "L'émergence d'une histoire environnementale interdisciplinaire. Une approche conjointe de l'Holocène tardif", *Annales* 77 (2022), no.1, 11–58.

12 Olivier Compagnon and Pierre Purseigle, "Geographies of Mobilization and Territories of Belligerence during the First World War", *Annales* 71 (2016) no.1, 37–60, here 42.

13 One example of many is Selena Daly, Martina Salvante and Vanda Wilcox, eds., *Landscapes of the First World War* (Cham: Palgrave Macmillan, 2018).

14 Oliver Wilkinson, *British Prisoners of War in First World War Germany* (Cambridge: Cambridge University Press, 2017), 77, speaks of a "capitvity landscape". Another example is Jay Winter, "Commemorating Catastrophe: 100 Years On", *War & Society* 36 (2017), no. 4, 239–55, here 252.

15 Johann Gustav Droysen, *Historik. Vorlesungen über Enzyklopädie und Methodologie der Geschichte*, ed. Rudolf Hübner (Munich, Berlin: Oldenbourg, 2nd ed., 1943), 473. A similar assessment is made by Compagnon and Purseigle, "Geographies of Mobilization", 42–43. On historiographical concepts of space, see Christoph Nübel, "Was ist neu am 'spatial turn'? Potentiale und Grenzen deutscher geschichtswissenschaftlicher Raumkonzepte vom 19. Jahrhundert bis heute", *Historische Mitteilungen* 27 (2015), 160–85.

of the first to address these questions. His influential thesis that "myths of nature became part of the war experience after and not during the war" had far-reaching consequences for research on the First World War.[16] While nature played a dominant role in the analysis of the culture of remembrance of the war, for example, when looking at cemeteries, monuments, or literature, hardly anyone asked about the experience of nature during the war itself. When this question was asked, literary testimonies such as Henri Barbusse's *Le Feu*, Robert Graves's *Good-Bye to All That*, or Ernst Jünger's *In Stahlgewittern* were often used to answer. Following this approach, some researchers have concluded that the war created an "unrecognisable landscape of total destruction" that would not have been understood by those involved.[17] In some accounts, even the distinction between contemporary perceptions and the author's interpretations is lost in the process.[18]

In fact, however, numerous soldiers, publicists, and visual artists were already dealing with the destruction of the landscape during the war. Among them were not only members of bourgeois elites but also soldiers from the peasant classes. "No one can imagine how much the war has devastated at all who has not seen it", wrote a soldier, who in civilian life was a woodworker and farmed, to his wife in 1915.[19] The extent of the devastation increased even further in the matériel battles of the following war years, of which the soldiers took careful note. Lieutenant Jünger described the "landscape" on the Somme in 1916 as "unforgettable": "Every millimetre of ground overturned and overturned again. The houses shot down … mountains removed, in short, everything made into a desert."[20]

Warscapes were an omnipresent theme in the sources. However, the extraordinarily diverse forms of description and perceptions make it a challenge to analyse them historically. In the following, I propose a model with which the myriad faces of warscapes can be analysed without neglecting their complexity. In doing so, I refer to the Western Front, because I have already examined this front more comprehensively elsewhere.[21] However, the model can also be

16 Mosse, "War and the Appropriation of Nature", 120.

17 Brantz, "Environments of Death", 78.

18 Cf. in the otherwise stimulating analyses of Saunders, "Material Culture", 9; Wilson, *Landscapes of the Western Front*, 1.

19 Martin Sickert, letter, 9 October 1915, Württemberg State Library (WLB), Schüling Collection no. 90.

20 Ernst Jünger, diary, 28 August 1916, Ernst Jünger, *Kriegstagebuch* 1914–1918, ed. Helmuth Kiesel (Stuttgart: Klett–Cotta, 2010) 176–77.

21 This paper is based on Nübel, *Durchhalten und Überleben*.

applied to other fronts, and other wars as well, as can perhaps some of the main research findings.

1 The Warscapes Model: Re-Reading the Spatiality of the First World War

Usually, historians tend to privilege time over space. Space has long been regarded as a static part of the earth's surface and was therefore of little interest to historians primarily concerned with change over time—Fernand Braudel and Lucien Febvre were important exceptions here. When talking about space, the main aim was to explore the history of places or regions in interaction with social change and to record what happened where. This sometimes led to a geographical determinism, that is to say, the assumption that spaces determined the fate of people, for example, in the form of geopolitics.[22] In recent years, however, more and more studies on historical spaces have asked different questions. Spaces are now seen as man-made, relational, and dynamic entities rather than as containers in which history takes place.

These spatial approaches have also found their way into military history. Now, it is not as if space had not played a role in military history before. Actually, war can be conceived as a large-scale spatial encounter. The German geographer Friedrich Ratzel had already described war at the end of the 19th century as "a large school of spatial mastery".[23] Taking this basic insight into account, dozens of studies have dealt with the role of maps in war, geography and military operations, or the influence of weather on the course of war. Constructivist spatial research, however, has opened the door to new questions.[24] The idea that spaces are man-made already existed in rudimentary form before the First World War, but was only taken up comprehensively by historians at the end of the 20th century. The best-known author of this movement is Henri Lefebvre, who stated that "every society … produces … its own space".[25] Lefebvre's aim was to continue researching material space, but also to look at the historically highly significant representations and symbolisms of space and to

22 David Blackbourn, *A Sense of Place: New Directions in German History. German Historical Institute. The 1998 Annual Lecture* (London: The German Historical Institute, 1999), 7.

23 Friedrich Ratzel, *Politische Geographie* (Munich, Leipzig: Oldenbourg, 1897), 337.

24 Christoph Nübel, "Raum in der Militärgeschichte und Gewaltgeschichte: Probleme, Ergebnisse und neue Felder der Forschung", *Militärgeschichtliche Zeitschrift* 73 (2014), no.2, Special Issue: Raum und Krieg, ed. Peter Lieb and Christoph Nübel, 285–307.

25 Henri Lefebvre, *The Production of Space*, trans. Donald Nicholson-Smith (Oxford, UK/ Cambridge, MA: Blackwell, 1991), 31.

analyse the conditions that determine the production of space.[26] In addition, it is important to ask how these spaces have had an impact on societies, for example, during conflicts or in the setting of boundaries.[27] Lefebvre and other authors made clear that space-making is a changeable social practice and that notions of space have historically played at least as important a role as the old question of the living conditions of people on the surface of the earth.

The idea of what all space can be has thus multiplied in historical scholarship; there are physical-geographical, mental, or even social spaces. The inflation of the concept of space, however, makes Droysen's plea to define space all the more urgent. A historical concept is needed to arrive at further insights. This is especially true for the First World War, which is examined primarily with a rather broad understanding of landscape. In order to be able to examine this conflict in a more differentiated way beyond abbreviations and omissions, a model is helpful that makes it possible to analyse the transformation of spaces during the war, on the one hand, and leaves room for the spatiality of contemporary experiences, on the other. For this, it is necessary to reduce the scope of the term landscape and to place other spatial models alongside it, with which it is possible to capture the conditions of war.

In order to solve these problems, the myriad faces of space should be divided into spatial layers and examined separately. For the study of the Western Front, I propose a model that could contribute to an analysis of the spatial conditions and experiences of war. In doing so, three spatial layers can be distinguished: environment, terrain, and landscape.[28] They refer to the immediate front-line area, that is, a danger zone about 15–20 kilometres wide that could be shelled by artillery.

The special feature of this area was that it brought with it a "new orientation".[29] Attentive observers, such as Kurt Lewin, a German artilleryman and later an

26 Cf. Nübel, "Was ist neu", 175.

27 David Blackbourn and James Retallack, "Introduction", in *Localism, Landscape, and the Ambiguities of Place: German-Speaking Central Europe, 1860–1930,* ed. David Blackbourn and James Retallack (Toronto, Buffalo, NY, London: University of Toronto Press, 2007), 3–35, here 20.

28 The value of this model for research is also emphasized by Roger Chickering, "Deutschland im Ersten Weltkrieg: Betrachtungen zur Historiografie des Gedenkjahres", *Archiv für Sozialgeschichte* 55 (2015), 395–444, 418–19; Christoph Cornelissen and Arndt Weinrich, "German Historiography on World War I, 1914–2019", in *Writing the Great War: The Historiography of World War I from 1918 to the Present*, ed. Christoph Cornelissen and Arndt Weinrich (New York/Toronto: Berghahn, 2021), 147–91, here 169.

29 Wilhelm August Luz, "Schlachtenlandschaft", in *Flandrische Erde in Stimmungen und Bilder von Soldaten der 4. Armee. Des "Kriegsbuches der 4. Armee" zweiter Teil* (Stuttgart, Berlin: Deutsche Verlagsanstalt, 1917), 18–22, here 20.

influential Gestalt psychologist, or Wilhelm August Luz, also deployed in the field artillery, noticed that the space at the front did not extend uniformly, but knew a "front and rear" that pointed in the direction of the enemy and the hinterland. Luz even spoke of a "'frontality' of the landscape" that determined the alignment of the positions, the bodies and the supply routes.[30] The concept of the "front" therefore saw an enormous spread during the First World War period and was later applied not only to weather phenomena but also to political parties.[31] When analysing the environment, terrain and landscape, this "frontality" must therefore be taken into account.

The *environment* encompassed the basis of life in the front-line area and was only partially congruent with the environment studied by environmental history.[32] While the latter is primarily concerned with the exploitation of resources and its consequences, the focus here is on the living conditions that the physical-geographical space offered to those in the front-line area and in the trenches themselves. People's lives have always depended on their environment. However, in peacetime they could rely on infrastructures such as houses, roads, and supply facilities so as not to be directly exposed to the rigours of climate, weather, and geography. At the front, these were often missing or repeatedly destroyed. Protection from the environmental factors that impaired well-being and even threatened health was therefore a high priority. In some cases, it even took precedence over measures intended to provide security against the enemy.

This explains why some soldiers associated the worst experiences of war not with the relatively infrequent battles, but with the environmental conditions at the front. Environmental factors, such as constant wetness in wintry Flanders or snow and cold in the southern section of the front in the Vosges, were sometimes feared more than the enemy because they made themselves felt on a daily basis and thus had a more gruelling effect. When constructing trench systems, it was therefore necessary to ensure that they were not only tactically sound and protected against shelling but also that they provided protection against the environmental conditions in the front area. For this reason, they were partly equipped with drainage systems, which, however, regularly collapsed due to rain or shelling. The disposal of rubbish, excrement, or even corpses was also necessary, not least from a medical point of view, to prevent

30 Kurt Lewin, "Kriegslandschaft", *Zeitschrift für angewandte Psychologie* 12 (1917), 440–47, here 441; Luz, "Schlachtenlandschaft", 21.

31 John Horne, "Le front", in *Vu du front: Représenter la Grande Guerre* (Paris: Musée de l'Armée, 2014), 17–28.

32 On the following, see Nübel, *Durchhalten und Überleben,* 27–98.

the spread of disease. However, this could hardly be guaranteed in a time of intense fighting, which was reflected in the rapidly increasing number of soldiers who fell ill.

The *terrain* was a genuinely military space that came into being through spatial practices related to combat and that had no equivalent in peacetime except in exercises and imagination.[33] What it meant to judge the surroundings solely from a military point of view can be illustrated with an anecdote that is reported about Generaloberst Alfred Graf von Schlieffen. Sometime in the pre-war period, the chief of the German General Staff had gone to East Prussia. His adjutant wanted to start a conversation and drew the taciturn general's attention to the beauty of a river. Entirely committed to the military assessment of the terrain, the latter is said only to have expressed his view of it as "an obstacle of no importance".[34] The terrain is thus a space that was perceived primarily in terms of military considerations. It was structured through the use of a wide variety of weapons systems and the application of increasingly elaborate tactics. During the First World War, these military practices changed, mainly because of the increased firepower on the battlefield. For this reason, the terrain also changed profoundly, and with increasing speed.

As a result, the trench system had to be constantly modified. Even though the term "war of position" tends to evoke a static image linguistically, it was a highly dynamic war in terms of tactics and position construction.[35] The positions of 1914 bore little resemblance to those of 1918. Whereas in the first year of the war, regularly only one battle trench was constructed, which could be reached through a few communication trenches, from 1915 onwards the soldiers built an elaborate system of trenches, with one trench staggered behind another. There were fire, supervision, and support trenches as well as strongpoints and reserve lines. Defence in depth created a vast battle zone that was divided into forefield and main combat zone. In these separate spaces, the soldiers had different missions: while the forefield was defended flexibly, the enemy's advance was to be stopped in the main combat zone at the latest. These spatial dynamics had a significant impact on the military operations and the soldiers, forcing them to constantly learn. The military mode of perception and a behaviour adapted to the terrain were part of the military training, which constantly tried to keep up

33 Nübel, *Durchhalten und Überleben,* 99–206.

34 Hermann von Kuhl, *Der deutsche Generalstab in Vorbereitung und Durchführung des Weltkrieges* (Berlin: Mittler, 2nd. ed. 1920), 127. This view was decisively shaped by maps, see Oliver Kann, *Karten des Krieges: Deutsche Kartographie und Raumwissen im Ersten Weltkrieg* (Paderborn: Schöningh, 2020).

35 The image of a static war of position is often evoked in the literature and can be found, for example, in Wilson, *Landscapes of the Western Front*, 66–69.

with the changes. However, since not all soldiers could be constantly trained, they ultimately had to rely on their own experiences and the advice of their comrades in order to be familiar with the latest tactics.

The terrain was therefore completely different from the *landscape*, which was not perceived for the purpose of warfare, but which was "aesthetically present in sight to a feeling and sentient observer".[36] Landscape was an image of the outside world, reflected in and related to the experience of historical actors. It was enormously diverse and complex, as the features of the landscape, made up of components of geography, landforms, bodies of water, vegetation, settlements, and infrastructures, formed a large whole. Landscape viewers were faced with the challenge of assessing and understanding this unity. This proved to be all the more challenging as the war added hitherto unknown or destroyed elements to the peacetime features of the landscape. They had to be integrated into the visual landscape narrative as well. However, front-line soldiers not only faced war landscapes with clear traces of fighting, but also experienced at least three other types of landscape: classical landscapes that bore no traces of the war and thus resembled peace landscapes in which the war experiences could be processed; landscapes of the homeland that existed in the memory or could even be imagined at the front and that served to stabilize emotions; and landscapes of war theatres with which images of the nation, identities, and the unknown far from home were thematized.

Landscapes were powerful symbols, highly charged with meaning. For this reason, they can be understood as a medium for the creation of meaning in war. In fact, during the war, those involved engaged extensively with the landscape and were even able to spin a meaningful narrative out of images of destruction. Some welcomed the war as an opportunity to master nature, others complained about the devastation. These different points of view already show that inclusion of landscapes in the analysis of the First World War extends the scope of research. They make it possible to understand the war experiences and to place them in the mentalities of the era.

These three spatial layers might be considered as helpful tools for historical analysis because they refer to the fundamental dimensions of the war experience. They were of particular importance to the soldiers because they had a decisive influence on their everyday lives. As environment and terrain deeply affected their conditions of survival, landscapes presented the visible life-space

36 Joachim Ritter, "Landschaft. Zur Funktion des ästhetischen in der modernen Gesellschaft (1963)", in *Landschaftswahrnehmung und Landschaftserfahrung*, ed. Gert Gröning and Ulfert Herlyn (Münster: Lit, 1996), 28–68, here 35. On the following Nübel, see *Durchhalten und Überleben,* 207–354.

and mirrored their efforts to make sense of the war. The three spatial layers demonstrate that the war constantly created and profoundly transformed space, which made the problem of adjusting to space a perennial challenge.

Environment, terrain, and landscape are only three of many spatial layers that can be used to analyse the First World War, or even other conflicts. Depending on the object of research, it might be helpful to explore other spaces as well. These could be made up of the vast networks of war in which people, goods, or information flowed. It would also be possible to study spaces such as the hinterland, the occupied area, the homeland, or sea, air or mountains, analysing local microstructures or regional and global contexts. Finally, social spaces could be looked at, asking how they interacted with geographies and mental spaces. In this context, it would even be useful to consider the particularities of the different types of military branches or to ask about the experiences of the military leadership, prisoners of war, people from other continents, or women and men at home. It is therefore important to understand the spatial dimensions proposed here not as a new orthodoxy but as a toolkit with which to study the First World War.

Since space is a self-evident dimension of the life-world, references to the warscapes of the First World War can be found in numerous sources. However, this often happens implicitly rather than explicitly. Research on historical spaces must therefore consider a wide variety of sources. For a spatially inspired history of war experiences, it is important not to rely on the first-person documents of war participants only but to analytically link them with military records and publications. It is these groups of sources that allow conclusions to be drawn about the institutional framework of soldierly life as well as contemporary patterns of interpretation of the war. Without these, the varied individual war experiences cannot be adequately classified.[37]

The various spaces of war together form the warscapes of the First World War. With this neutral collective term it is unnecessary to conceive all spaces of the war as "landscapes", thus hiding rather than using the analytical potential of the concept. The advantage of the warscapes approach is that it makes it possible to bridge the divide between materiality and representation that is always debated in spatial historiography. David Blackbourn has warned that "we limit our historical imagination when we place the cultural and the

37 Cf. the reflections of Klaus Latzel, "Vom Kriegserlebnis zur Kriegserfahrung: Theoretische und methodische Überlegungen zur erfahrungsgeschichtlichen Untersuchung von Feldpostbriefen", *Militärgeschichtliche Mitteilungen* 56 (1997), 1–30.

material in separate boxes".[38] Indeed, researchers should not fall either into a spatial determinism that says it is spaces that decide the fate of people. Geopolitics, for example, made this mistake in the 1920s and 1930s, and drew the fateful conclusions from the First World War. It inspired the National Socialists in their criminal programme of conquering "Lebensraum" in the east. Nor should historians assume from a constructivist view alone that spaces exist only in the imagination, forgetting their material and tangible territorial dimension.

Overall, the warscapes approach assumes that societies have always dealt with the material world in practice and discourse and thus created dynamic spaces that manifested themselves physically and were at the same time charged with meaning and significance. It is therefore necessary to do justice to the double role of space between materiality and imagination. On the one hand, space becomes a methodological approach because it is the researchers who define historical spaces in order to recognize things that were not visible before. The sources are ordered and analysed according to the respective definition, without contemporary interpretations having to dictate the structure of study. By subordinating the sources, which are only representations of space, to an analytical concept of space, it is also possible to include the materiality of space in the research. Historical spaces, on the other hand, become the object of analysis. In this case, the aim is to work out the spatial images in the sources themselves. Sources are thus understood as representations that provide information about contemporary spaces. With the help of voices from the past, it is possible to bring to light spatial concepts, practices, and ideas of the First World War.

2 First World War Landscapes

In this chapter, one of the three spatial layers is analysed in more detail: the landscape. It was chosen because landscapes, then as now, decisively shape the representations of the First World War.[39] The devastation of landscapes was already seen during the First World War as a sign of the destructive power of modernity. The war had left a clear "trace … on the face of the earth", a German magazine noted in 1915. In "the vastly extended areas of operation", "the landscape has been completely changed" and "countless natural beauties and

38 Blackbourn, "Sense of Place", 25. On the following in detail, see Nübel, "Was ist neu", 177–84.

39 Christoph Nübel, "Kriegslandschaften und die Anthropologie des Soldaten, 1914–1933", *Historische Anthropologie* 24 (2016), 50–71, here 50–53.

historical natural monuments have been destroyed". "Here, the horror of war will rest over the landscape for generations to come, and dark legends will weave around the site where the world war dug its traces."[40] In the course of the 19th century, the military acquired a massive destructive potential, especially through the development of artillery. Whereas regions had previously been permanently destroyed mainly during siege warfare, this could now be done by a single battle—especially since battles in any case increasingly extended in time and space. The war no longer took place on the landscape, but in the landscape, and left deep marks here. For example, in preparation for the Somme offensive in 1916, British and French batteries fired 37,500 shells per kilometre of front during only one week.[41] Extensive shelling created vast war landscapes, which is why established ways of perceiving and describing landscapes had to be adapted or even newly developed.

War landscapes existed only as long as they were seen in the context of the war. Lewin described this phenomenon in 1917. He noted that shell craters or trenches marked a clear difference between wartime and peacetime landscapes.

> If the battlefield is specially adapted to its military purposes by means of trenches, dugouts, etc., as in the war of position, the character of this part of the landscape as an emplacement is securely preserved even during pauses in the fighting, and its demarcation in the landscape remains particularly sharp. … The whole position is perceived as a very special zone, separate from the rest of the landscape.

However, if no more fighting occurred in the described section, then "the danger zone character … is removed".

> The zone where one had to remain constantly crouched and ready to defend oneself has become part of the stretch of land that one will now have to cross [in the war of movement]. Without having experienced an actual change, a field, a meadow, or the like, has suddenly taken the place of the combat things, which now show scenic connections on all sides, to the fields and forests all around.[42]

40 "Die Spur des Krieges im Antlitz der Erde", *Der Türmer. Monatsschrift für Gemüt und Geist* 17 (1914/15), 634–35.

41 Nübel, *Durchhalten und Überleben*, 295.

42 Lewin, "Kriegslandschaft", 444, 446.

With great sensitivity and scientific precision, Lewin described the difference between war landscapes and peaceful landscapes—a change that hundreds of thousands of war participants had registered since 1914. War landscapes were ephemeral landscapes: as soon as the reference to the war ended, the war landscape also disappeared. This observation shows that landscape perceptions were structured by contrasts and were extremely fluid. For this reason, it was even possible to discover peaceful classical landscapes directly at the front, which had an important compensatory function for the soldiers and served as spaces of recreation. These moments often lasted only a short time, however, as one soldier wrote in a letter: "When I look above me, I see the most beautiful sky, and as soon as I want to rejoice in it, some shrapnel with lightning and smoke drive in between."[43]

During the war of movement that characterized operations in the west in 1914 and 1918, on the Alpine Front in 1917/18 and on the Eastern Front in all years of the war, landscapes were highly heterogeneous, depending on geography, topography, and the ferocity of the fighting. In the long phase of the war between November 1914 and spring 1918, when the war of position dominated in the west, certain images and patterns of description of the war landscape consolidated. These patterns can be found in first-person documents, such as letters and diaries, as well as in trench newspapers, war reports, travelogues, and even popular science works. In private and public sources, war landscapes were often described in similar terms, but different conclusions were drawn. One reason for the similarity in some accounts is that the war experiences were often of such complexity that they could hardly be rendered linguistically. Right at the very beginning of the war, a soldier noted in his diary that one "cannot describe the effect" of combat "on paper at all".[44] This was all the more true for those who stayed at home and did not know the war from their own experience. Thus it was helpful if the authors could fall back on familiar linguistic patterns in order to be able to write about the war.

An analysis of German first-person documents and public sources shows that the war landscape was by no means uniformly perceived during the First World War. Rather, four different modes of perception can be found, which very likely also existed in other nations: the war landscape as a natural landscape, as a mythical landscape, as a wilderness, and as a cultural landscape. Each of these four landscapes was a way in which the external world could be

43 August Bader, letter, 12 May 1915, WLB, Bader estate.

44 Heinrich Latz, diary, 4/5 September 1914, WLB, Latz estate. On this see Eric J. Leed, *No Man's Land: Combat & Identity in World War I* (Cambridge: Cambridge University Press, 1979), 74.

meaningfully described. They were by no means mutually exclusive. Instead, the same soldier could describe his surroundings from different perspectives at different times.

1. The *natural landscape* existed seemingly without human intervention. The war raged here without anyone saying who fired the shells or dug the trenches. War had become a natural state and shaped the landscape with its destructive power. The front-line area resembled a space that bore hardly any evidence of human habitation or landscape features known from peacetime, but appeared literally extinct. The fighting had given it an alien, sometimes impressive "gigantic appearance", as one soldier wrote to his father.[45] Most descriptions blamed this on the artillery. The shell crater therefore developed into the "circular icon of the war landscape".[46] In drawings, cartoons, and also texts, they were made the central feature of the landscape, since they were indeed to be found almost everywhere and at the same time referred to the state of constant danger to life in which the soldiers hovered (Figure 1.1). One soldier tried to give his parents an impression of the multitude of craters when he wrote: "Look in the starry sky and think that every star is a shell hole, then you have about an idea".[47]

Since descriptions of the destroyed natural landscape mainly referred to shell craters, it seemed obvious to situate them in well-known contexts of meaning in which craters also played a major role. During the First World War, lunar landscapes and volcanoes were therefore invoked for this purpose. The description of the front line as a volcanic landscape was widespread because volcanoes played a significant role in popular culture before 1914. In the years before the First World War, Krakatoa (1883), Mont Pelé (1902), and Vesuvius (1906) had erupted. This triggered waves of scientific but also sensationalist reports on volcanoes. It was well known in 1914 that volcanic eruptions were like a destructive elemental force, so it was obvious to equate the destructive power and noise of artillery battles during the war with volcanic eruptions. Educated soldiers who knew about the eruption of Mount Vesuvius in 79 AD even compared the Western Front to the fate of Pompeii and Herculaneum, noting that the war was creating a "wasteland of rubble compared to which Pompeii is well preserved".[48]

45 Walter Pechtold, letter, 12/13 February 1917, WLB, Pechtold estate.
46 Nübel, *Durchhalten und Überleben*, 305.
47 Friedrich Spiegelberg, letter, November 1916, WLB, Schüling Collection no. 4.
48 Adolf Spemann, diary, 5 October 1916, Hauptstaatsarchiv (HStA) Stuttgart, M 660/041, no. 12.

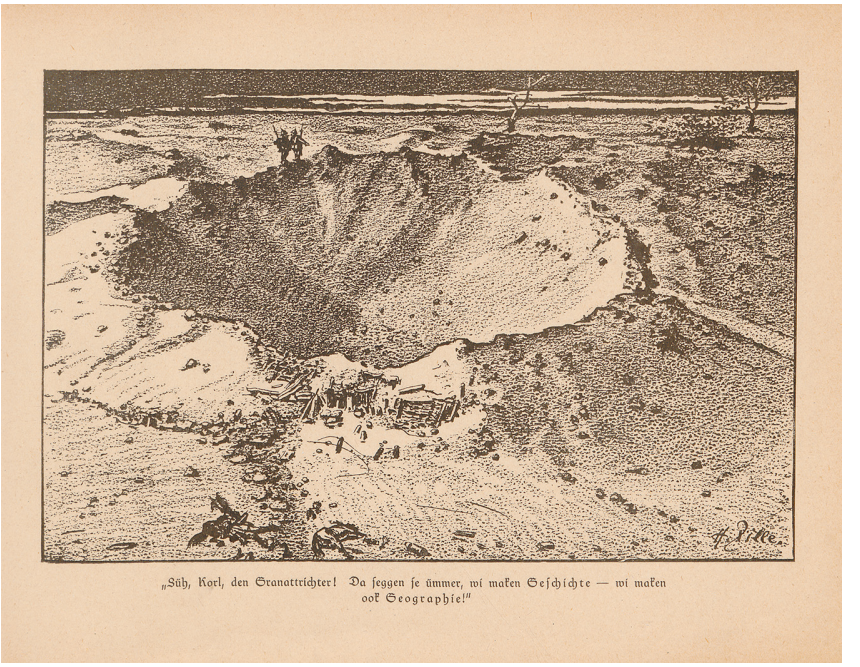

FIGURE 1.1 Heinrich Zille, Vadding in Ost und West
SOURCE: HTTPS://DIGITAL.STAATSBIBLIOTHEK – BERLIN.DE/WERKANSICHT?PPN=PPN717979555&PHYSID=PHYS_0027&DMDID=DMDLOG_0001&VIEW=OVERVIEW-TOC.

2. The war landscape was described as a *mythical landscape* as well. Myths are meaningful narratives which made "the uncanny familiar and addressable"[49] and for this reason lent themselves to the representation of destroyed areas in image and language. While the natural landscape primarily described the state of a landscape, emphasizing the static, mythical landscape narratives focused on dynamics such as the becoming and decay of people, flora, and fauna at the front. Otto Dix took up this motif in a drawing (Figure 1.2). His famous war paintings, which were widely publicly exhibited after 1918, were based on his wartime experiences and the drawings he made as a soldier during the fighting. In one work from 1915, Dix took up the motif of the mythical landscape when he drew a "shell crater with flowers". Even in the midst of the destruction that the crater symbolized, flowers actually bloomed. Nature was obviously capable of healing the wounds inflicted by war. Dix was not the only one to take up this

49 Hans Blumenberg, *Arbeit am Mythos* (Frankfurt am Main: Suhrkamp, 1979), 50.

FIGURE 1.2 Otto Dix, Granattrichter mit Blumen (1915)
SOURCE: AKG IMAGES

idea. Such images have also been handed down from other soldiers or even appeared in the trench newspapers.[50] Trees were also important components of the mythical landscape. They were often anthropomorphized. When shells "bored their steel teeth deep into the body of the trees" and destroyed them, it was obvious to compare their fate with that of people at war.[51]

50 Albrecht Ritz, drawing, 4 July 1917, WLB, Ritz estate; Frühling im Granattrichter, Liller Kriegszeitung no. 107, 15 June 1918. A discussion of Dix's works can be found in Winter, *Sites of Memory*, 159–64.

51 Friedrich Wolfermann, diary, 22 June 1915, Bundesarchiv, PH 12 II no. 40. Cf. Nicholas J. Saunders, "Bodies in Trees: A Matter of Being in Great War Landscapes", in *Bodies in Conflict: Corporeality, Materiality and Transformation,* ed. Paul Cornish and Nicholas J. Saunders (London: Routledge, 2014), 22–38.

This demonstrates that the "eternal coming into being and passing away of nature" was a well-known and widely accepted narrative among the soldiers.[52] Because of the manifold parallels, it made sense to link the reawakening of nature with the death in war. This explains why there were numerous references to nature in almost every military cemetery and why some gravesites were laid out as forest cemeteries. The death of soldiers thus acquired a sense of something not only consoling but also familiar, for it became part of the eternal cycle of nature. Trench newspapers spread the propagandistic narrative that the nation would emerge victorious from the war thanks to the soldiers' efforts and courage, and that they would never forget the fighter's heroic sacrifice: "His death is a seed for future harvest. … Nature and steady life gives birth anew."[53] This argument might well have been understood by the soldiers, as they themselves witnessed the reawakening of nature in the trenches.

3. To some observers, the front-line area resembled a *wilderness* that presented a complete contrast to the peaceful classical landscape which during the First World War was represented first and foremost by the home country. Here, men had created good living conditions for themselves. The descriptive pattern of wilderness, on the other hand, referred to the fact that the blessings of civilization were hardly available at the front. Fields could no longer be cultivated and meadows no longer be mown. Settlements were destroyed. In 1916, a soldier undertook a hike near the front line at Ypres, one of the most devastated stretches of land on the Western Front. The route went "through woods and fields, over trenches and signal wire". The images he saw therefore led him to conclude in his diary that he was in an uncultivated "wilderness".[54] Furthermore, the wilderness referenced the danger to life that threatened at the front. A ravine in the embattled heights near Vimy, where every tree was "wrecked into undergrowth by shells" and the ground was "churned up", reminded the soldiers in its threatening and alienating sight of the "wilderness of the high mountains".[55]

Such descriptions of the war landscape bore similarities to images from popular culture. Before 1914, adventure novels and accounts by world explorers were popular, featuring journeys to the colonies or other areas perceived as exotic and uncivilized, such as the Balkans or the Orient. They described how the protagonists braved numerous dangers in alien lands, demonstrating the

52 This is how an unknown soldier put it, letter, 5 July 1918, WLB, Schüling Collection no.9.

53 "Das Erwachen der Natur", Liller Kriegszeitung no. 84, 8 April 1917.

54 Werner Landerer, diary, 22 October 1916, HStA Stuttgart, M 660/228, no. 26.

55 Alfred Wolff, diary, 22 November 1915, WLB, Wolff estate.

superiority of Europeans over inhospitable spaces, local populations, and wild animals.[56] The description of the war landscape as wilderness made it clear that the soldiers had left civilization behind and crossed over into a space to which they had to adapt and in which they had to develop strategies of survival. For this reason, reports about the march to the front line read like a description of a journey out of the security of civilization and into an unknown and dangerous country where different rules applied. The transition from the rear area, a safe space where there was no threat of artillery fire, to the front zone was like a *rite de passage* during which inexperienced soldiers became real front-line fighters. Indeed, the question of who had served as a front-line soldier in the world war had lasting currency. Adolf Hitler, who served as a messenger with the Bavarian Reserve Infantry Regiment No. 16 at the Western Front, was barely considered a front-line soldier among his former comrades. Wearing his Iron Cross 2nd Class, he nevertheless endeavoured to make political capital out of the reputation of the *Frontkämpfer*. At the same time, the writer Erich Maria Remarque was defamed. Right-wing circles denied that he could speak for the front-line soldiers in the novel *All Quiet on the Western Front* because he had not served in the trenches—which was a lie.[57]

4. The war landscape could also be understood as a *cultural landscape.* Whereas in the three landscapes already analysed it remained mostly unclear who had caused the destruction, the descriptions here focused on the fact that it was man who fundamentally transformed an area. This had already happened before 1914, when natural resources were exploited more and more intensively in the course of industrialization and environmental damage became increasingly visible. The First World War condensed the destructive potential of modernity. During the battles of 1916, a soldier noted: "This is no longer war, but mutual destruction with technical force."[58] The technical means by which man could profoundly alter the landscape obviously

56 See as a case study John P. Short, "Everyman's Colonial Library: Imperialism and Working-Class Readers in Leipzig, 1890–1914", *German History* 21 (2003), no. 4, 445–75. The military-historical reference is made clear by Dierk Walter, "'Indian Country': Der Raum als Feind in der Gewaltgeschichte der europäischen Expansion", *Militärgeschichtliche Zeitschrift* 73 (2014), no. 2, Special Issue: Raum und Krieg, ed. Peter Lieb and Christoph Nübel, 309–32.

57 Thomas Weber, *Hitler's First War: Adolf Hitler, the Men of the List Regiment, and the First World War* (Oxford: Oxford University Press, 2010); Thomas F. Schneider, "'The Truth about the War Finally': Critics' Expectations of War Literature during the Weimar Republic: The Reception of Erich Maria Remarque's Im Westen nichts Neues [All Quiet on the Western Front], 1928–1930", *Journalism Studies* 17 (2016), no. 4, 490–501.

58 Hugo J. Frick, letter, 3–4 October 1916, WLB, Frick estate.

marked a profound break. This is shown in a sketch by the Berlin graphic artist Heinrich Zille published in 1916 (Figure 1.1). In the middle of a plain showing clear traces of wartime destruction, two soldiers stand at the edge of an enormous shell crater and murmur to each other: "They always say we make history—we also make geography!"[59] Zille's sketch became famous during the war and was picked up, for example, by trench newspapers as evidence that "man … had proved himself to be a 'geological facture'". In 1916, an interim summary stated that during the war, man had already moved 100 million cubic metres of earth and thus permanently changed the face of the earth.[60] Even if the term for this did not yet exist, these texts show that contemporary observers now imagined themselves in the age of the Anthropocene, fuelled by the First World War.

Some historians assume that the fighting and life in the devastated landscape created a "harsh and brutal 'sense of place'" among the soldiers, which culminated in a desire to dominate and further devastate the surroundings.[61] The sources analysed here, however, do not provide such a judgement. Rather, they show that the human work of destruction was neither unanimously welcomed nor rejected, but that its reception was marked by a profound ambivalence. The caption of Zille's sketch, for example, can be read as a sign of pride, which, however, was clearly mixed with the horrors of war. This is indicated not least by the dead trees, the flock of crows, and the horse carcasses in the foreground of the picture. The landscape drawn by Zille made perfectly clear that man was capable of lastingly transforming geography, thereby creating a space in which death and destruction prevailed.

3 Conclusion: Warscapes in the Era of the Anthropocene

It has become clear that the First World War profoundly transformed existing spaces, but also created specific spaces of war. Contrary to what research had long assumed, there was already a lively debate about the manifold military spaces of war dating from 1914. Warscapes were interpreted as a specific feature of the "Great War". Therefore, space is an omnipresent issue in the sources. These sources invite us to use a spatial research approach to uncover social orders, practices, and discourses that are otherwise not visible.

59 Heinrich Zille, *Vadding in Ost und West* (*Vaddingserie III. Folge*) (Berlin: Verlag der Lustigen Blätter, 1916).

60 "Geologie und Schützengrabenkrieg", *Der Meldereiter im Sundgau* no. 25, 7 May 1916.

61 Wilson, *Landscapes of the Western Front*, 144 (quote); Leed, *No Man's Land*, 114.

In contemporary first-person accounts, reportages, and pictorial representations, transformation of the landscape was referred to in detail. It was seen as a visible sign that this war was fundamentally different from previous conflicts and thus marked a historical break. This rupture was identified with the profound transformation of space during the First World War. This enabled "the emergence of geopolitics as both a field of study and a factor in political decision-making".[62]

Moreover, this rupture was interpreted in a way similar to today's Anthropocene interpretation. Indeed, the First World War can be understood as a particular part of the Anthropocene. On the one hand, it accelerated the tendencies towards permanent geological interventions by humans that became apparent during industrialization. On the other hand, since 1914, at least at the front, these did not follow the logic of resource extraction, in which the devastation of whole swathes of land was an unintended but widely accepted side effect. Here, on the contrary, the protection of one's own resources and the destruction of enemy matériel were central driving forces for the profound transformation and devastation of large areas. However, war has been treated rather marginally in works on the Anthropocene.[63] The reasons for this may be found in the fact that resource use in war followed different logic than in peacetime and, more generally, that war is still understood as a special affair rather than as "an indelible part of human society".[64] This may also be why destruction is regularly judged to be senseless in wartime, while in peacetime it is sometimes regarded as unavoidable collateral damage. In this respect, future research on the Anthropocene which includes war more than has been the case so far would be fruitful. Here, it is probably not very helpful for historians to line up the debates of the sciences and to search for the actual point in time when humans became a lasting shaping factor.[65] What is more relevant to historical research is whether and when combatants reflected on their actions which changed the face of the earth, as was clearly the case during the First World War.

62 Compagnon and Purseigle, "Geographies of Mobilization", 59.

63 Instead, the consequences of climate change are now conceptualized as "violence", Susanne Krasmann, "Die Situation der Zerstörung. Gewalt im Anthropozän", *Mittelweg 36* (2022/2023), no. 6, 33–50.

64 Margaret MacMillan, *War: How Conflict Shaped Us* (New York: Random House, 2020), xi.

65 Simon L. Lewis and Mark A. Maslin, "Defining the Anthropocene", *Nature* 519 (2015), 171–80. For a critical discussion of the concept, see Helmuth Trischler and Fabienne Will, "Die Provokation des Anthropozäns", in *Provokationen der Technikgeschichte. Zum Reflexionszwang historischer Forschung*, ed. Martina Heßler and Heike Weber (Paderborn: Schöningh, 2019), 69–105.

The warscapes approach offers a possibility to explore the transformation of spaces and societies during war. Because of the multiformity of space, which can be understood physically-geographically, mentally, or socially, this text has argued for differentiating the term "landscape", which is omnipresent in research. Instead, it argues for defining more precisely which layers of space are to be studied. Spatial analyses of war offer useful approaches because they allow spatial and social dynamics to be examined. They are particularly fruitful when spaces are not conceived as static containers but when space-making is understood as a versatile social practice. This also means that research into historical spaces should not be limited to geography alone but include the people who lived in these spaces and shaped them.

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CHAPTER 2

Logistics and Transformation of the Landscape for Mountain Warfare: the Plateaus of Lavarone and Folgaria, 1866–1918

Gustavo Corni

The wars of the 20th century were characterized by the vastly greater number of men deployed in the field by the various armies and by the simultaneous increasing technicalization of weapons and essential aids to warfare; consider as just one example the introduction of vehicles equipped with internal combustion engines—trucks, cars, tractors—which gradually replaced the animal traction that had hitherto dominated. In this new context, war logistics became increasingly important, i.e. the complex organizational machinery for getting men and weapons to where they were needed and at the exact time they were needed. The importance of this is not generally matched by the level of attention given to it in the historiography, if we exclude specific studies, which are only read and studied by specialists. Certainly, it is more appealing to write and publish books dealing with great generals and great battles.

The mountain war, which represents a page in itself of the story of the Great War 1914–18, has its own peculiarities that make it unique.[1] Firstly, the geographical context in which it took place is the Alps. We are therefore in the framework of the war between Italy and Austria-Hungary, in which troops of the respective coalitions took part only marginally. At the same time, the historiography on that theatre of war has always been considered secondary and "regional", and is not comparable with the extraordinary flourishing of publications on the war on the Western Front or even the war on the Eastern Front, against Russia. Secondly, in mountain warfare, modernity and the atavistic nature of a natural-geographical context intersect, in which the combatants had to be at the same time expert climbers, tireless walkers, and ready to face

1 The case study presented here is the synthesis of research carried out in 2018–19 by a group of young researchers coordinated by the writer, who for the first time investigated the archives to analyse the issue of logistics before and during the war in the Valsugana area. Their contributions are collected in Gustavo Corni, ed., *Preparare la guerra: Logistica e militarizzazione del territorio in Alta Valsugana* [Preparing for war: Logistics and militarisation of the territory in Alta Valsugana] (Trento: Curcu & Genovese, 2019).

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the most extreme weather: from snow to ice, avalanches, and extremely low temperatures.[2]

This essay examines a small territorial cross-section, which presents some aspects of mountain warfare, but also included elements of "plain" warfare, so to speak. The territory examined is the south-eastern corner of Trentino: the Valsugana, where the Brenta River flows towards Venice, together with the plateaus of Lavarone, Folgaria, and Luserna that flank it to the south, and which represented the state border between Italy and Austria-Hungary in those years.

1 The Trentino Region in the New Strategic Situation after 1866

The cession of Venetia to the Kingdom of Italy, after the Austro-Prussian War of 1866 (best known in Italy as the Third War of Independence), brought the southern part of the Land Tirol, the Trentino, inhabited by a large majority of Italian-speaking people, to the forefront of the confrontation between Austria-Hungary and Italy.[3] The Viennese government began to devote special attention to the strengthening of the region—geographically a sort of wedge into the Italian territory—in a double perspective: to defend the empire but also in view of an attack against the traditional enemy. [Figure 2.1]

Although they were both members of the Triple Alliance, a diplomatic invention (1882) by Chancellor Bismarck, Italy and Austria were not able to overcome the pre-existing strategic and political divide between them. In particular, the opposing nationalisms conjured the spectre of "irredentism" of the Italian-speaking populations, and respectively the national homogenization of that small linguistic-cultural minority. In the region, especially from the beginning of the new century, a real war of words, gestures, and images was fought between the opposing nationalist groupings.[4]

2 Diego Leoni, *La guerra verticale: uomini, animali e macchine sul fronte di montagna, 1915–1918* [Vertical warfare: men, animals and machines on the mountain front, 1915–1918] (Torino: Einaudi, 2015). See also Mark Thompson, *The White War: Life and Death on the Italian Front 1915–1919* (New York: Basic Books, 2009).

3 Still fundamental today is the monograph on regional geography written in the years immediately preceding the war by the socialist Cesare Battisti, *Il Trentino: Cenni geografici, storici, economici* [Trentino: Geographical, historical, economic background] (Novara: De Agostini, 1915). Battisti, a volunteer fighter in Italy, was captured in the summer of 1916 and executed after a brief summary trial in Trento on 12 July.

4 On the peculiar case of sport in this regard, see Elena Tonezzer, *Il corpo, il confine, la patria: Associazionismo sportivo in Trentino* [Body, border, homeland: Sports clubs in Trentino] (1870–1914) (Bologna: Il Mulino, 2012).

FIGURE 2.1 Borders

SOURCE: CESARE BATTISTI, IL TRENTINO, ISTITUTO GEOGRAFICO DE AGOSTINI, NOVARA, 1919.

After 1906, the new Supreme Commander of the Austro-Hungarian army, General Franz Conrad von Hötzendorf, issued a new strategy based on the preventive war against (alternatively) Russia, Serbia, or Italy. All of the scarce military resources of the empire had to be devoted to this task. In the context of the Conradian strategy, the relevance of Trentino at the southern border grew ever greater.[5]

A deep-going militarization of the region had to be pursued, concentrating resources in building a new and more effective infrastructure system in order to prepare for an inevitable war. In the forefront, a series of new fortresses was to be constructed at the borders, with fortifications built on the western side of the border, towards Lombardy, in the high mountain areas of Ortles, Adamello, and Tonale, to the northern shore of Lake Garda but also on the plateaus of Folgaria and Lavarone, and in the eastern part of Trentino, as well as in the Dolomites, always on the eastern side of the border.[6] [Figure 2.2]

Here, we will focus our attention on a small, but important, portion of this very long border. The Valsugana was a valley with a west–east/south–east orientation that started from the area of Lakes Caldonazzo and Levico, immediately east of the regional capital, Trento. It was marked by the course of the River Brenta, which gushed from Lake Caldonazzo; this, bending south over the border with the Kingdom of Italy at Tezze/Primolano, flowed 174 kilometres into the Venice lagoon. The valley was thus one of the points of access, or connection, between Italy and Austria-Hungary. It was an easy access, as had been shown by the war of 1866, the so-called Third War of Independence from the Italian point of view, which had seen Italian troops move up the valley almost to the immediate vicinity of Trento.

The southern edge of the upper part of the Valsugana Valley was represented by the so-called plateaus of Lavarone, Folgaria, and Luserna, a mountainous and rugged area, which served as the southern border with the Kingdom of Italy. While it was relatively easy to block the bottom of the Brenta Valley with fortified barrages, the defence of the border on the highlands was more delicate and difficult.

5 Lawrence Sondhaus, *Franz Conrad von Hötzendorf: L'anti-Cadorna* [Franz Conrad von Hötzendorf: The anti-Cadorna] (Gorizia: Libreria Editrice Goriziana, 2003).

6 Gian Maria Tabarelli, *I forti austriaci del Trentino* [The Austrian forts of Trentino] (Trento: Temi, 1988). More recently, Willibald Rosner, *Fortificazione e operazione: Lo sbarramento degli altipiani di Folgaria, Lavarone e Luserna* [Fortification and operation: The barrage of the Folgaria, Lavarone and Luserna plateaus] (Trento: Curcu & Genovese, 2016).

FIGURE 2.2 Fortifications

SOURCE: GRANDE GUERRA + 100, WWW.TRENTINOGRANDEGUERRA.IT /GG+100.

2 The Fortress Region

Beginning in the last third of the 19th century, the government of Vienna started planning a defence system based on forts built on top of the highlands. From this point of view, the Valsugana was to represent the immediate logistical hinterland for the fortified system. At the same time, the military authorities had conceived and partially realized a concentric system of fortifications that was to protect the "Trento fortress" (Festung Trient) from the west, south, and east; in parallel, a similar fortified system was planned and partially realized about 100 kilometres further north—the so-called Festung Brixen, which was to block the junction between the Isarco Valley and the Pusteria Valley.

The Valsugana, lying immediately behind the plateaus, had therefore to play a major role at the rear of the fortresses to be built, from the beginning of the new century, close to the border with Italy. It should be mentioned that the same policy was pursued by the Italian counterpart. In the last decades of the 19th century, the construction of fortifications, fortified barrages, and other

military works had characterized the first, long phase of the militarization of the region on both sides.[7]

At the beginning of the 20th century, a qualitative leap was made. On the Austro-Hungarian side, seven major forts were erected in the years immediately preceding the war on the plateau, at an altitude of between 1100 and 1900 metres. The fortifications were constructed according to the most modern techniques, using concrete, iron, rotatable iron domes for the artillery, and with forts partially excavated from caverns. It was a very expensive and powerful war machine, apt both for defence and for attack. Italians did the same in the same years, in a sort of "race to fortification".

The planning for a coming war, between the end of the 19th century and the first decade of the 20th, magnified the role of logistics, based on transport and communications. Railways were central to this.[8] In Europe they were considered infrastructure to serve also, if not primarily, for military purposes. The modern railway lines were able to transport large quantities of men, and all other items necessary for the military, close to the front in a very short time. In the Austro-Hungarian Empire, the whole railway system was planned in the second half of the century following a military vision. The Brenner line was realized between 1853 and 1867 under the pressure of strategic necessity, namely to improve the military defence against the Italian enemy.[9] The Valsugana railway line, too, from Trento to Venice, was completed between 1894 and 1896 according to both military and economic (fostering tourism) imperatives. In truth, the Austrian line stopped at Tezze, before the border, and the connection of the tracks with the section on Italian territory was only completed in July 1909.[10]

As a spin-off from the railway, in the same period, a network of routes connecting the Valsugana and the plateaus of Lavarone and Folgaria was planned and accomplished, or existing routes were modernized, to function as a crucial supporting element for the construction of the above-mentioned line of

7 A monographic study on Forte Colle delle Benne (Werk Colle delle Benne), which was constructed during the 1880s, is Davide Allegri's *Colle delle Benne* [Bucket Hill] (Levico: Associazione Culturale Forte delle Benne, 2017).

8 Romano Vecchiet, "Le ferrovie e la guerra sul fronte orientale" [Railways and the war on the Eastern Front], in *La Grande guerra e le ferrovie in Italia* [Great War and the railways in Italy], ed. Andrea Giuntini and Stefano Maggi (Bologna: Il Mulino, 2017), 61–106.

9 Andrea Leonardi, *Un innovatore nell'ingegneria dei trasporti del XIX secolo: Luigi Negrelli* [An innovator in 19th century transport engineering: Luigi Negrelli] (Bologna: Il Mulino, 2021).

10 Gian Piero Sciocchetti, *La ferrovia della Valsugana* [The Valsugana railway] (Pergine: Amici della storia, 1998).

FIGURE 2.3 Road under construction
SOURCE: KRIEGSARCHIV VIENNA.

new forts at the border. [Figure 2.3] In parallel, a network of telephone cables was buried along the new routes. The first line to be completed was the one that connected Trento, the seat of the Austro-Hungarian headquarters, and the forts being built on the Altipiani, in 1907. This was a buried and armoured line, so as to be protected from artillery bombardment. The roads under construction were also equipped with minefields and armoured bunkers in case of attack. [Figure 2.4]

The old roads that connected the valley floor with the highlands were not adequate for the transport of heavy armament parts, such as the steel domes made by Skoda for the new forts and other pre-constructed concrete and steel parts. The Kriegsministerium in Vienna estimated that almost 3,000 transports were required to cover the needs for the construction of the forts. The existing roads were widened, the gradients reduced as far as possible, and new ones were built: the Fricca pass road and, foremost, the road from Caldonazzo to Monterovere, built between 1901 and 1912.[11] The latter was named

11 One of the oldest roads, the Valcaretta, was also widened and made passable by military transports, see Nirvana Martinelli, ed., *La strada della Valcaretta: Cartoline dalla collezione*

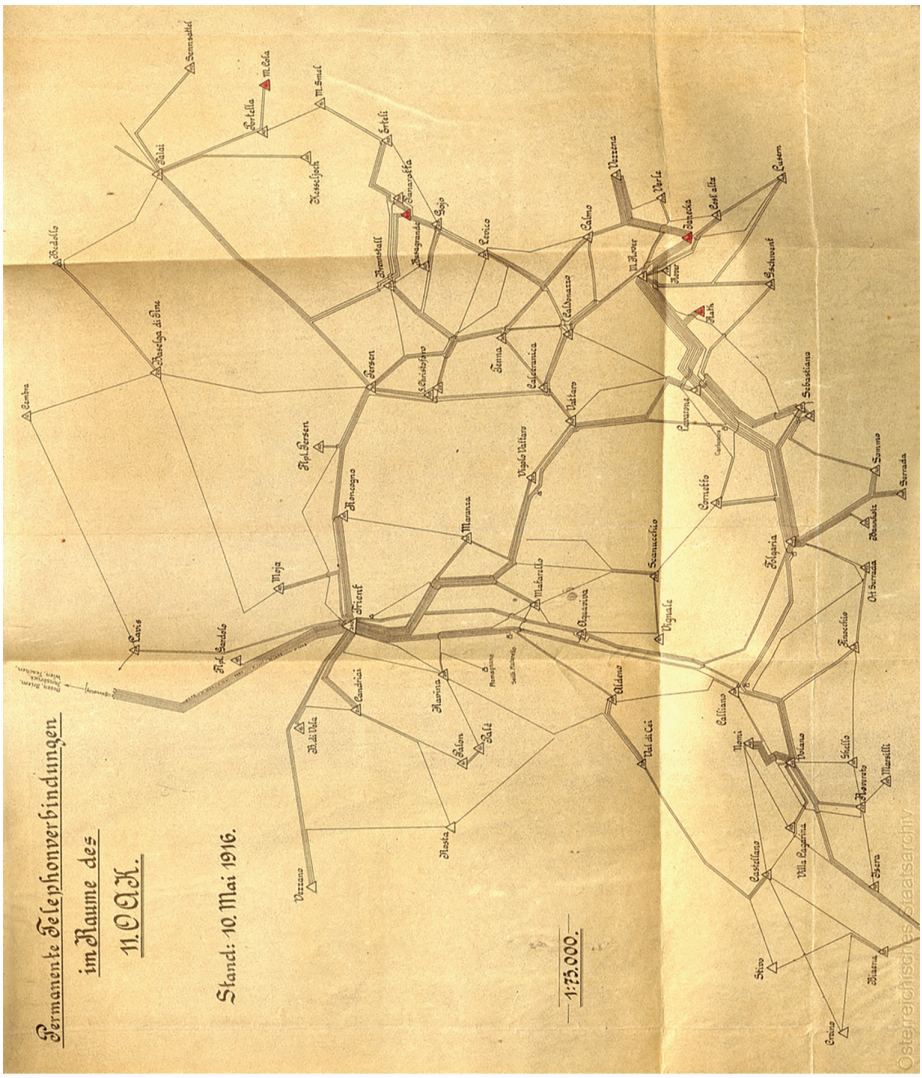

FIGURE 2.4 Map of telephone cables
SOURCE: KRIEGSARCHIV VIENNA.

"Kaiserjägerstrasse" because it was built by Kaiserjäger units stationed in Caldonazzo for the purpose. It is still called by this name and is a masterpiece of construction ingenuity. The construction of this network of roads entailed a cost problem, the Kriegsministerium's budget being perpetually insufficient. In addition, there was constant conflict with the municipalities, onto whom Vienna had to pass at least part of the costs. The official justification was that the new roads also served the needs of civilian life.[12]

In the same years, at the beginning of the century, the Valsugana railway line was equipped with new tracks and platforms in some stations, in particular Caldonazzo, and with new warehouses and stores for military purposes. Since the construction of the railway, the village of Caldonazzo had been equipped with a small station on the railway line, which was located in an important strategic position, as the village is directly below Monterovere (1,200 metres above sea level), the gateway to the highlands. Not only that, but thanks to the protected location, the construction of the Kaiserjägerstrasse as well as the construction of a cableway from Caldonazzo to the summit of Monterovere would have run less risk of being under fire from Italian artillery, which in the event of war might have been located in the valley floor east of Borgo Valsugana.

The planning and construction of the routes to the plateaus was a matter of frequent discussion and disagreement between the central state authorities and the local ones, who tried to defend their privileges and traditions, such as the communal woods. Seen from another perspective, the construction of routes demanded a large civilian workforce on the spot as well as transport facilities through carriages hired from the civilian population. These needs secured a new income source for a population largely consisting of poor peasants and small artisans.[13]

In general, the priorities of the central authorities always took precedence over those of the communes, which also had to bear a partial amount of the costs for constructing the new routes. Otherwise, the military had to fight with

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di Luigi Matuella [The Valcaretta road: Postcards from Luigi Matuella's collection] (Levico: Associazione Forte Colle delle Benne, 2017).

12 A fundamental reconstruction of the region's fortification policy, with its consequences for the relationship between the military and the political and social spheres, is the study of Nicola Fontana, *La regione-fortezza: Il sistema fortificato del Tirolo* [The Fortress-Region: The Fortified System of Tyrol] (Rovereto: Museo storico italiano della guerra, 2016).

13 Gerd Pircher, *Militari, amministrazione e politica in Tirolo durante la prima guerra mondiale* [Military, administration and politics in Tyrol during the First World War] (Trento: Società Trentina di studi storici, 2005).

the civilian ministries for authorizations, but above all to obtain the budget necessary for the new constructions.

Another pillar of the development of logistic facilities is represented by the ropeways, a system of cables, hung from towers (in this case made of wood) from which carriers are suspended, aimed to transport materials specially in hilly and mountain areas. These could be built easily and in a relatively short time, using in large part materials present on site (trees, in particular). Ropeways, developed specially by German engineers and firms, could transport a huge number of items (up to many hundreds of tons per day) over hundreds of metres (up to one kilometre) of difference in height. [Figure 2.5]

Obviously, the high wear and tear on cables and moving parts required constant monitoring and careful maintenance. Specially trained departments of technicians were set up to cover these needs. At first, the cableways were privately or communally owned and served mainly for economic purposes, to quickly transport timber and other agricultural goods. For example, the cableway from Levico to Cima Vezzena (1908 metres above sea level) was designed to transport timber from municipal forests downstream. With the approach of

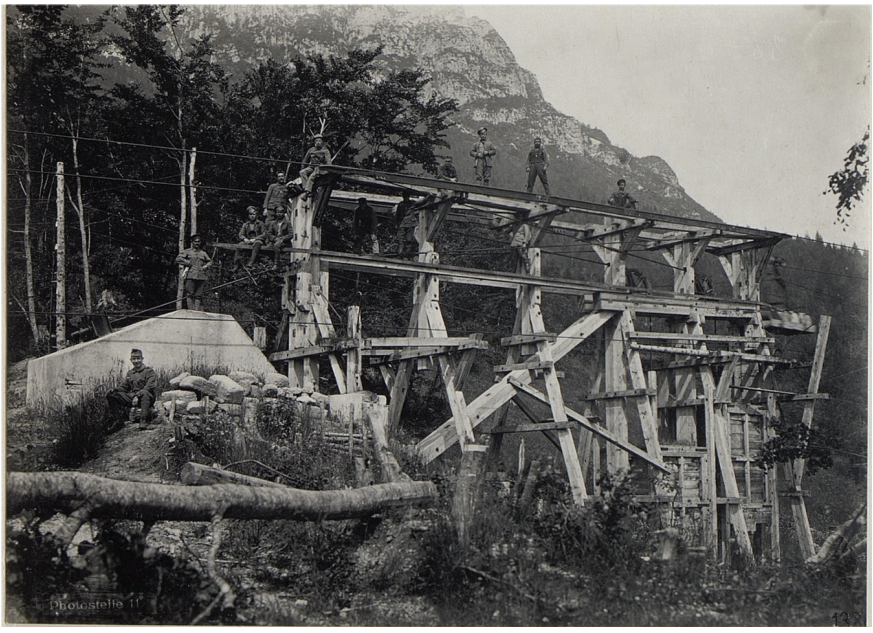

FIGURE 2.5 Ropeway under construction
SOURCE: PRIVATE COLLECTION.

war, the state assumed direct control. From that moment on, the purpose of transport by cableway became exclusively military.

The frenetic building activity of fortifications came to an abrupt end with the entry of Italy into the war in May 1915. Some forts and other military installations remained unfinished. Instead, other sectors boomed; this is the case in particular for the construction of ropeways. [Figure 2.6]

The war, and in particular the preparation in early 1916 of the so-called *Maioffensive* (best known in the Italian tradition as the *Strafexpedition*) increased the transformation of the Valsugana as a crucial area of the immediate rear front for amassing reserves of military items, such as munitions and food rations. To give one example, the freight transported by railway on the Valsugana line increased by 600 per cent, confronting the war year 1916/17 with the average of the decade before.

As a second example, not far from Pergine, near to the northern shores of Lake Caldonazzo, in the marshy and only recently reclaimed area of San Cristoforo, a gigantic logistics centre was built in early 1916, in order to prepare for the offensive. It consisted of 15 tracks (each 500 metres long) and 28 large buildings. One of these was equipped as a military hospital with 2,000 beds. The location was chosen firstly because it was a wide plain, but also because it was out of the firing range of the Italian artillery, which was able to disturb the loading and unloading activities at the other logistical hub, the aforementioned Caldonazzo station.

As previously mentioned, the construction of ropeways, too, boomed in the years after 1915.[14] Hundreds of so-called light ropeways (short and with a limited transport capacity) were built by the belligerent armies, with the help of large numbers of civilian workers, in a very short time. But heavy ropeways, longer and with a much higher transport capacity, were also constructed from the valley to the heights of the plateau. The three parallel ropeways built at different times from the logistics centre of Caldonazzo to Monterovere had a total (potential) capacity of more than 1,000 tons daily. At their mountain station, they were connected with a network of other smaller ropeways to supply the whole front line on top of the plateaus.

14 For a comprehensive work on the cableways on the western side of the front, see Luigi Longhi and Antonio Zandonati, *Teleferiche dell'11ª Armata austro-ungarica dall'Adige al Brenta (1915–1918)* [Ropeways of the 11th: Austro-Hungarian Army from the Adige to the Brenta (1915–1918)] (Rovereto: Museo storico italiano della guerra, 2013). For the eastern sector, I refer to the essays in Corni, *Preparare la guerra*.

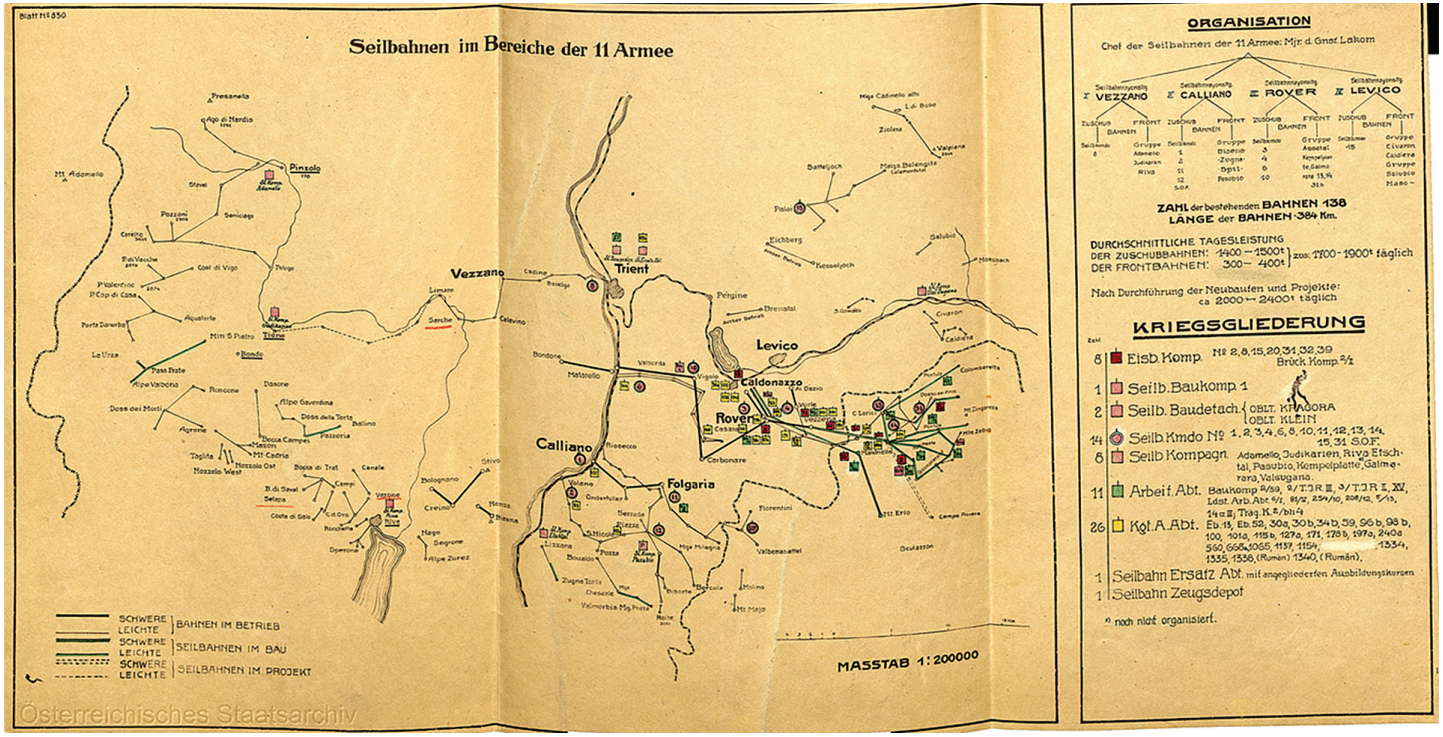

FIGURE 2.6 Map of ropeways
SOURCE: KRIEGSARCHIV VIENNA.

3 Military and Civilians

The increasing dynamic towards a militarization of the region, from the last decades of the 19th century, involved an intricate, partly conflictual relationship between military and civilian populations. It should be noted that the Italian part of Tyrol was one of the poorest of the entire Habsburg Empire.[15] The rural economy was characterized in general by large peasant families cultivating small plots. Manufacture was almost absent, except for some isolated factories in Trento and Rovereto and the first modern water power plants. The incipient touristic development was limited to small parts of the territory, in particular the northern shore of Lake Garda (Arco and Riva) and the spas in Valsugana (Levico Terme and Roncegno). The rural male population was therefore forced to migrate, in large part as seasonal migrants to the north (Austria and Germany). But since the late 19th century, lifelong migration had also increased. It has been calculated that from 1850 to the beginning of the war, almost 10 per cent of the population had permanently emigrated, mostly to the Americas.

The arrival of the military brought some incentives, in particular in the form of workers (and animals) hired in large numbers for labour on the new roads and railroads, but also to build forts and other military instalments. [Figure 2.7] Female workers did chores for the military dislocated in the villages, for example, cooking, washing, and ironing.[16] The construction of aqueducts and other infrastructure (electricity, telephone, sewers, etc.) benefitted not only the military but also the civilian population.

However, the fortification and militarization of the territory involved its deep-going transformation, which damaged the local economy. Examples of this include rigid laws and rules issued to block any form of construction, even agricultural works, in the areas surrounding the forts. The so-called Festungs-Rayongesetz (first issued in 1856, but later rigorously amended) involved

15 In addition to the contemporary assessments of Cesare Battisti, see Antonio Bonoldi and Maurizio Cau, eds., *Il territorio trentino nella storia europea IV: L'età contemporanea* [The Trentino region in European history IV: The contemporary age] (Trento: FBK Press, 2011), p. 71ff.

16 Many women workers were also employed in the construction of forts, roads, and other infrastructure. See Nicola Fontana, "L'impiego di manodopera femminile nei lavori di fortificazione sul fronte trentino", in *Donne in guerra 1915–1918: La Grande guerra attraverso l'analisi e le testimonianze di una terra di confine* [Women at war 1915–1918: The Great War through analysis and testimonies from a borderland], ed. Paola Antolini et al. (Tione: Centro studi Judicaria, 2007), 47–68.

FIGURE 2.7 Civilians at work
SOURCE: PRIVATE COLLECTION.

limitations on manufacture and exploitation of the territory surrounding the forts, primarily for reasons of security.

These prohibitions created permanent tensions between the municipal authorities and the military. The capital city of the province, Trento, was transformed into a fortress (the previously mentioned Festung Trient) which meant, among other limitations, that 10 per cent of the urban area was subject to the prohibitionist legislation of the Rayongesetz. One of the consequences of the law was the depreciation of the areas in and around the city. Controls and restrictions on freedom of movement and in particular on taking pictures also represented a limitation for tourists, who liked to wander or hike in the mountains.[17]

It should also be added that the military authorities in the region were inclined to treat civilians with mistrust, fearing that in the event of war they would take Italy's side. This attitude determined the worst consequences after May 1915, when the military decided to deport en masse the inhabitants of the

17 Luca Filosi, "Amministrare una città in guerra: Trento 1914–1918" [Administering a city at war: Trento 1914–1918] (Thesis, University of Trento/University of Verona, 2016–17).

border region to the interior of the empire, considering them to be a fifth column of the enemy. Immediately after Italy's entry into the war, in fact, on the basis of long-prepared plans, the military authorities evacuated the areas closest to the front in a great hurry, and in particular numerous towns and villages in the Valsugana valley, which we have discussed in the previous pages, including Levico and Caldonazzo among others. There was deep mistrust regarding the loyalty of the local population. The evacuated civilians were partly concentrated in large barrack camps—the "cities of wood", as they were then called—and partly redistributed in small groups in the interior areas of the empire, mainly in rural villages in Bohemia and Moravia. Their total number was over 75,000, mostly women, children, and the elderly. Another 30,000 or so were evacuated by the Italian army, who occupied areas of southern Trentino and eastern Valsugana in the first phase of the war. The living conditions of both these groups were generally very difficult, and their return journey took place amidst many obstacles and ended only when hostilities had long since ceased.[18]

A second negative consequence of the militarization was the massive destruction of the woods, both for use of materials for military purposes and in order to clear the firing lines for the artillery all around the forts. As a consequence, the peasant families and the communal authorities lost an important source of income. The slopes of the mountains underwent dramatic changes: excavation of tunnels, levelling of uneven surfaces, canalization and rectification of torrents, and many other radical changes in the landscape. [Figures 2.8 and 2.9] Part of the agricultural area was sacrificed for military work. The works resulted in frequent incidents, which caused losses or injuries among the civilian workers.[19]

This militarization process also became a major factor in the political discourse. In Trentino, the urban elites were divided between a small liberal party

18 Essential for the topic is Francesco Frizzera, *Cittadini dimezzati: I profughi trentini in Austria-Ungheria e in Italia (1914–1919)* [Citizens halved: Trentino refugees in Austria-Hungary and Italy (1914–1919)] (Bologna: Il Mulino, 2018). See also the work of Paolo Malni, *Gli spostati: Profughi, Flüchtlinge, Uprchlíci. 1914–1919* [The displaced: Refugees, Flüchtlinge, Uprchlíci. 1914–1919], vol. 2, *La storia* [History] (Rovereto: Laboratorio di Storia, 2015). The first of the two volumes is a collection of largely unpublished photographs.

19 The available photographic images testify to the radical transformations induced in the landscape by its militarization, before and during the conflict, as well as by the events of the war itself. See the richly illustrated book edited by Fabrizio Rasera and Anna Pisetti, eds., *Paesaggi di guerra: Il Trentino alla fine della prima guerra mondiale* [Landscapes of war: Trentino at the end of the First World War] (Rovereto: Museo storico italiano della guerra, 2010).

FIGURE 2.8 Barbed wire
SOURCE: KRIEGSARCHIV VIENNA.

FIGURE 2.9 Landslide
SOURCE: PRIVATE COLLECTION.

representing the urban bourgeoisie, a popular (Catholic) party which was backed by the influential Church, and a small socialist party. The region was characterized by very modest industrialization; as a result, the working class was numerically scant and poorly organized. The majority of the rural population supported the Catholic party and was largely conservative and loyal to the Habsburg emperor. There was no radical nationalist ideal among the large majority of the population. Being "redeemed" by the Italian state was an objective limited to a minority. The majority was in favour of obtaining greater autonomy within Tyrol and the monarchy. Irredentism had a very limited success before 1914; it was mainly imported from the Italian kingdom. It should be added that the Italian-speaking population was one of the smallest in the multinational monarchy, comprising about 1.5 per cent of the total.

Together with the request for an Italian university in the Dual Monarchy, which provoked a harsh reaction from the Austro-German nationalists at the beginning of the 20th century,[20] and the general question of school and education,[21] the militarization of the region, with the extension of rules, limitations, and obligations for the civilian sphere, was a third motivation for tension. The members from Trentino of the Diet of Tyrol and of the Parliament in Vienna gave voice to supposed unrest among the civilian population, but in vain.[22] The military priorities of the Dual Monarchy in the wake of the July crisis had achieved supremacy over all other aspects of social life. To offer just one example, the new building destined by the municipality of Levico for the schools in 1914 was transformed by order of the authorities into a military hospital.

In the years following the end of the conflict, many of the elements introduced into the landscape by the Austro-Hungarian military authorities, to prepare for the conflict and then to fight it, underwent a gradual transformation to civil uses, allowing the start of a process of tourism development that has marked the destiny, and the present, of the Trentino-Alto Adige/Südtirol region since that time: from roads to cableways, to communication and urbanization

20 Michael Gehler and Günther Pallaver, eds., *Università e nazionalismi: Innsbruck 1904 e l'assalto alla Facoltà di giurisprudenza italiana* [Universities and nationalism: Innsbruck 1904 and the assault on the Italian Faculty of Law] (Trento: Fondazione Museo storico del Trentino, 2010).

21 Quinto Antonelli, *Storia della scuola trentina: Dall'umanesimo al fascismo* [History of schools in Trentino: From humanism to fascism] (Trento, Il Margine, 2013).

22 Leo Toller, "La fine di un Kronland. Ricerche sui verbali della Dieta tirolese (1912–1914) e sui protocolli dell'Assemblea e del Consiglio Nazionale tirolese (1918) [The End of a Kronland. Research into the minutes of the Tyrolean Diet (1912–1914) and the protocols of the Tyrolean Assembly and National Council (1918)]" (Master's thesis, University of Trento, 2016–17).

networks.[23] Once again, militarization and modernization end up intersecting in a paradoxical but indisputable way.

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23 Patrick Gasser, Gunda Barth-Scalmani, and Andrea Leonardi, eds., *Krieg und Tourismus im Spannungsfeld des Ersten Weltkrieges* [War and Tourism in the Tension of the First World War] (Merano/Meran: Touriseum, 2013).

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CHAPTER 3

Destruction of Nature through Warfare in (Austrian) Galicia during the First World War

Tomasz Kargol

The First World War, due to its duration, scope, and enormous commitment of human and material resources, was a unique event in the history of armed conflict up to that point which left a strong mark on the social, economic, and political life of European nations.[1] It was not only the millions of soldiers who were affected by the fighting; civilians were forced to flee their homes, suffered from hunger and infectious diseases (typhoid, dysentery, influenza), and experienced violence at the hands of soldiers. Losses caused directly by military action included destroyed or damaged residential buildings, outbuildings, public structures, industrial plants, bridges, railway lines, and roads. Material losses were mainly in industry, trade and agriculture, and transport. The war did not spare monuments, such as churches, palaces, and historical old towns, either. Another consequence of warfare was the devastation of the natural landscape.[2]

The main combat theatre was the European continent. Three fronts formed on its territory: western (Belgium, north-west France), southern (Serbia, northern Italy) and eastern. The Eastern Front saw the heaviest fighting in East Prussia, the Kingdom of Poland,[3] and Galicia.[4] Through the lands of the Austrian partition, the front line moved twice between 1914 and 1915. In 1914, the

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2 The natural landscape—a component of the Earth's space that includes land forms, soils, bodies of water, rocks, vegetation, and animals.

3 The Kingdom of Poland was a state established by the provisions of the Congress of Vienna in 1815 as a monarchy in a personal union with Russia. After the fall of the November Uprising in 1831, it lost the status of a separate state and became a constituent part of the Russian Empire and unified with Russia in the following decades. Finally, the separateness of the Kingdom of Poland was abolished after the failure of the January Uprising in the years 1863–64.

4 Galicia is a colloquial, shorthand term for the Kingdom of Galicia and Lodomeria, i.e. the Polish lands which, as a result of the partitions of the Polish-Lithuanian Commonwealth in 1772 and 1795, found themselves within the borders of the Habsburg Monarchy (the Austrian Empire). Galicia was within Austrian borders until 1918.

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Russian army occupied a large part of the territory, including its capital, Lviv, and reaching the outskirts of Kraków. The garrison of the fortress at Przemyśl capitulated in March 1915. In the spring of 1915, a counter-offensive by the Central Powers led to the breaking of the front and the liberation of much of Galicia from Russian occupation. In 1916, another offensive by the Tsar's army, this time unsuccessful, took place, which nevertheless led to intensified fighting in eastern Galicia. Much of this territory was under Russian occupation for a shorter (1914–15) or longer (1914–17 and even up to 1918) period of time.

The history of Galicia at the time of the Great War has already been the subject of a number of studies on military operations,[5] the political situation,[6] the damage suffered and the rebuilding of the country,[7] migrants,[8] and the social situation.[9] Of lesser interest, although present on the margins of the above studies, were issues of environmental history. This paper is an attempt to synthesize the impact of the war on the natural environment in the Kingdom of Galicia and Lodomeria in the years 1914–18, namely on the soil, orchards and forests, beekeeping, wild animals, and ponds and rivers (fish).

The text is based on different types of sources. Most importantly, these include materials produced by the state institutions set up to assess war losses and their liquidation, headed by the National Headquarters for the Economic Reconstruction of Galicia,[10] and landed estates. Journalistic publications and

5 Juliusz Bator, *Wojna galicyjska: Działania armii austro-węgierskiej na froncie północnym galicyjskim w latach 1914–1915* [The Galician War: Austro-Hungarian Army operations on the northern Galician front 1914–1915] (Kraków: Libron, 2008).

6 Mateusz Drozdowski, *Naczelny Komitet Narodowy 1914–1918: Polityczne i organizacyjne zaplecze Legionów Polskich* [The Supreme National Committee 1914–1918: The political and organizational background of the Polish Legions] (Kraków: Towarzystwo Wydawnicze "Historia Iagellonica", 2017).

7 Tomasz Kargol, *Odbudowa Galicji ze zniszczeń wojennych w latach 1914–1918* [Reconstruction of Galicia from war damage between 1914 and 1918] (Kraków: Towarzystwo Wydawnicze "Historia Iagellonica", 2012).

8 Kamil Ruszała, *Galicyjski eksodus: Uchodźcy z Galicji podczas I wojny* światowej *w monarchii Habsburgów* [The Galician exodus: Refugees from Galicia during World War I in the Habsburg monarchy] (Kraków: Towarzystwo Autorów i Wydawców Prac Naukowych Universitas [Society of Authors and Publishers of Scientific Works Universitas], 2015).

9 Jerzy Pająk, *Wojna a społeczeństwo Galicji w latach 1914–1918* [War and society in Galicia between 1914 and 1918] (Kielce: Wydawnictwo UJK, 2020).

10 The National Headquarters for the Economic Reconstruction of Galicia (after 1918 known as the National Reconstruction Office), a body of the governorate in Galicia, established in 1916 to assess and liquidate war damage, was divided into three sections: the buildings section, the agriculture and forestry section, and the crafts, industry, and commerce section. It was headed by a special official appointed by the governor, with an advisory body, the members of which were appointed by the National Department and the governor.

the daily and professional press were also used, namely agricultural (*Tygodnik Rolniczy*, *Rolnik*), forestry (*Sylwan*), fishing (*Okólnik Rybacki*), and beekeeping (*Bartnik Postępowy*) periodicals. The above sources focused on human, material, and economic losses. The destroyed or damaged buildings of various types were enumerated and assessed in detail, the regions and localities affected by the war were documented, and agricultural and industrial losses were analysed. Information on the natural landscape appeared as a component of the analysis of the implications of the war for forestry, agriculture, horticulture, beekeeping and fishing, and hydraulic engineering.

Galicia was an agricultural region, with the vast majority of its population making a living from farming, so the destruction of farmland was crucial from an economic, and therefore environmental, point of view. This issue was closely linked to the economic impact of the war (in terms of food shortages), but it also had its ecological side—soil degradation.

Fields were damaged by the construction of trenches, firing ditches, and field fortifications, as well as by artillery fire. Cannon and howitzer shells, especially those of large calibre, gouged enormous holes in the ground, 2 to 15 m wide and up to 3 m deep. Artillery shelling and firing ditches exposed the barren soil layer, especially on sandy land.[11] As a result, arable land became unsuitable for cultivation, soil fertility declined, and weed infestation of fields developed (poppies, cornflowers, couch grass, and other plants became widespread, depriving cultivated plants of water and nutrients).[12] The weed problem is illustrated by a request from Władysław Michałowski, owner of the Połowce estate in the Czortków district of eastern Galicia, who asked the authorities for a mower, "without which the overgrown weeds cannot be removed before ploughing".[13]

The greatest soil damage was recorded in areas of trench warfare, where thousands of kilometres of firing ditches, trenches, and other earthen fortifications were constructed and heavy artillery was used to break through them, e.g. along the front line in the years 1914–15.[14] This damage decreased the value

11 Paweł Zawiłowicz, "Z pobytu Rosjan w Nisku i okolicy" [From the stay of Russians in and around Nisko], *Piast,* no. 31 (1915): 10.

12 Kazimierz Miczyński, "Szkody w gospodarstwie rolnym przez rowy strzeleckie" [Farm damage by shooting ditches], *Rolnik,* no. 6 (1917): 75.

13 The Central State Historical Archives of Ukraine, city of Lviv, fond 191, description 2, case 685, p. 8, W. Michałowski do Starostwa w Czortkowie, Połowce 28 VIII 1917.

14 Stanisław Biały, "Z Krakowa do Brzozowa" [From Krakow to Brzozów] *Piast,* no. 27 (1915): 3; Marceli Handelsman, ed., *Polska w czasie wielkiej wojny* (*1914–1918*) [Poland during the Great War (1914–1918)], vol. 3, *Historia ekonomiczna* [Economic history] (Warszawa: Towarzystwo Badania Zagadnień Międzynarodowych, 1936), 9–10.

of the land. For example, in the Tarnów area, in the estates of the Sanguszko family, the firing ditches in the fields were 3 m or 8 m wide. In total, they covered 7780 m^2 of land. The depreciation of the land was estimated at 87 hellers per 1 m^2.[15] The management of the estate of the Potocki family of Łańcut estimated that the destruction of meadows by the digging of firing ditches meant a loss of 2–3 years' worth of income.[16] In the district of Cieszanów in north-eastern Galicia, by 1919, uncovered firing ditches measured 458,523 m long, excluding other trenches and entrenchments.[17] In the districts of Myślenice and Nisko, the trenches remained until 1917, as the military authorities opposed their backfilling.[18]

From analysis of articles, correspondence from individual districts and other information published in the agronomic press, i.e. the Kraków-based *Tygodnik Rolniczy* and the Lviv-based *Rolnik*, it can be concluded that the deterioration of soil quality nevertheless did not significantly affect crop sowing, harvests, and the general situation of agriculture. The main problems faced were shortages of labour, draft animals, agricultural tools and machinery, natural and artificial fertilisers, and grain for sowing and seed potatoes. In addition, accounts from peasants and landowners at the time emphasized the strong impact of weather conditions on the agricultural situation (droughts, frosts), but these phenomena were not related to the war, although the state of war made it difficult to combat their consequences. In the areas liberated in 1915, the so-called "war fallows" were present in 1915/1916, but by the following year (1916/1917), depending on the region, there were far fewer or none at all. The soil and fields

15 The National Archives in Kraków, Archiwum Sanguszków, signature 255 A, formularz zgłoszenia szkód wojennych na obszarze dworskim Skrzyszów oraz załącznik nr 22 "Wykaz zniszczonych budynków gospodarskich". [Archive of the Sangusko family, signature 255 A, the form for the declaration of war damage in the manor area of Skrzyszów and Annex No. 22 "List of destroyed farm buildings".]

16 The Central Archives of Historical Records, Archiwum Potockich z Łańcuta, signature 998, Zgłoszenie roszczeń z tytułu świadczeń wojennych w gminie Sarzyna [Archive of the Potocki family of Łańcut, signature 998, Notification of claims for war benefits in the municipality of Sarzyna], 361.

17 The National Archives in Kraków, Archiwum Urzędu Wojewódzkiego w Krakowie, signature 48, Odpis pisma oddziału cieszanowskiego Galicyjskiego Towarzystwa Gospodarskiego do Wydziału Rolnego Komisji Rządzącej [Archive of the Provincial Office in Kraków, signature 48, Copy of a letter from the Cieszanowski branch of the Galician Farming Society to the Agricultural Department of the Governing Commission], [Cieszanów 1919].

18 Józef Froń, "Stan rolnictwa w powiecie myślenickim" [State of agriculture in the Myślenice district], *Tygodnik Rolniczy* [Farmers Weekly], no. 32 and 33, (1917): 341; A. Zaremba, "Stan rolnictwa w powiecie niżańskim" [State of agriculture in the Nisko district], *Tygodnik Rolniczy* [Farmers Weekly], no. 34 (1917): 360.

in the eastern districts bordering Russia (Tarnopol, Brody), where the occupation and fighting lasted the longest—until the beginning of 1918—were in the worst condition. According to Oktawia Ożarowska's account, there were uncultivated fields there, criss-crossed by firing ditches, entanglements, dug-outs, telephone poles, and artificial ponds that were created in the meadows in place of the dug-out earth.[19] These areas therefore needed to be recultivated in order to be used for farming again.

The second component of the natural environment, after the soil, that was closely linked to the war economy and thus exposed to damage, was orchards and forests. Information on the extent of damage to gardens and orchards is provided by official statistics. In the summer of 1916, orchard and horticultural inspector Antoni Wróblewski inspected 377 orchards in 53 villages and 3 country estates. Almost half of them were heavily damaged, the others, although not devastated, were heavily neglected.[20] In the territory's 37 western districts, the demand for fruit trees was estimated at 425,252, or about 85 fruit trees per morgen (per 0.58 hectare),[21] and nationwide the demand for fruit trees was calculated at 680,403. The area of ornamental gardens destroyed amounted to 1,578 morgen (about 908.1 hectares), and the value of the destroyed trees and shrubs was estimated at 1,078,938 crowns, or about 683 crowns per morgen (per 0.58 hectare). The demand for ornamental trees and shrubs was calculated at 126,811 units in 37 districts and 202,897 units countrywide.[22] The damage affected domestic orchards and gardens, as well as city and palace parks.

From an economic and environmental point of view, the destruction of forests was a much more dangerous practice. Its scale was influenced by the course of the front line and the directions of army movements. Forest damage can be divided into direct and indirect damage. The direct losses arose as a result of the war effort and preparations for it. This consisted of the felling of trees to clear firing lines or for other purposes (e.g. the construction of entanglements); the injury or destruction of trees by artillery shells (the shells broke the trees) and rifle bullets (in the case of older trees, the damage was

19 Oktawia Ożarowska, "Zniszczenia gospodarcze w powiecie brodzkim" [Economic devastation in the Brody district], *Tygodnik Rolniczy* [Farmers Weekly], no. 14 (1917): 186–87.

20 *Sprawozdanie Komitetu c.k. Galicyjskiego Towarzystwa Gospodarskiego we Lwowie za lata 1914, 1915, 1916* [Report of the Committee of the c.k. Galician Farming Society in Lviv for the years 1914, 1915, 1916] (Lwów: Galicyjskie Towarzystwo Gospodarskie [Galician Farming Society], 1917), 60.

21 Statistical sources of the time operated with two units of area, the morgen and the hectare, 1 morgen = 5755 m^2, or 0.5755 ha.

22 Kazimierz Brzeziński, "Ze statystyki ogrodniczej" [From horticultural statistics], *Ogrodnictwo* [Horticulture], no. 2 (1918): 51–52.

insignificant, while much greater damage occurred in young trees); the felling of timber for the construction of field fortifications and roads; and bark gnawing by military horses.[23] Another breakdown of wartime losses in forests included damage to the stands themselves and soil damage. Damage to forest soil was caused by the digging of firing ditches and dugouts, and the explosions of artillery shells and grenades. Trenching and explosion craters caused trees to topple, exposed tree roots and thus reduced tree growth, and made it difficult to clean up the damaged stands and protect them from theft.[24] Fires were a great threat to forests. Their incidence and spread in the summer of 1915 was facilitated by drought and the "scorched earth" tactics used by the Russians retreating from Galicia, which involved the deliberate setting on fire of forests.[25]

In terms of indirect damage, losses in forestry were exacerbated by the exploitative policy of the occupying Russian authorities and the troops of the Central Powers, as well as the civilian population. The armies of both warring sides used the wood to build field fortifications and barracks, rebuild roads and bridges, and for fuel. Thinner trees from among young specimens were cut down to repair roads, and thicker specimens were used to build bridges, which led to a thinning of tree stands.

The war also interrupted rational forest management. Forest owners were forced to carry out additional work (the clearing of burnt areas, removal of trenches and field fortifications, maintenance or removal of trees damaged by shells, control of forest pests, elimination of soil infestation by weeds) and to change their economic plans and prematurely cut down stands, consequently leading to a shrinking of forest areas and a reduction in the technical quality of the stands.[26]

In the wake of these developments, Galician forests suffered qualitative (loss of the best trees) and quantitative losses. These losses affected the tree

23 Jan Kosina, "Szkody wojenne w lasach Beskidu" [War damage in the Beskydy forests], *Sylwan,* no. 1–2 (1916): 24.

24 Jan Fijałkowski, "Szkody wojenne w lasach Ordynacji Poturzyckiej" [War damage in the forests of the Poturzyca Ordinance], *Sylwan,* no. 1–6 (1916): 54–56; Stanisław Sokołowski, "Szacowanie świadczeń i szkód wojennych" [Estimation of benefits and war damage], *Sylwan,* no. 7–9 (1916): 122.

25 "Korespondencja Adama Kozłowieckiego z Huty Komorowskiej" [Correspondence of Adam Kozlowski from Huta Komorowska], *Sylwan,* no. 7–12 (1915): 123; Jan Fijałkowski, "Szkody wojenne w lasach Ordynacji Poturzyckiej" [War damage in the forests of the Poturzyca Ordinance], *Sylwan,* no. 1–6 (1916): 56–57.

26 Jan Kosina, "Szkody wojenne w lasach dóbr Miżyniec" [War damage in the forests of the Miżyniec estate], *Sylwan,* no. 1–6 (1916): 42–43; Józef Szymusik, "Lasy krasiczyński kiedyś a dzisiaj" [Krasiczyn forest in the past and today], *Sylwan*, no. 1–3 (1917): 7–10.

stands located in areas directly impacted by warfare the most: the Sandomierz Forest,[27] forests between the San and Bug Rivers, Subcarpathian forests, and those in the eastern part of the country.[28] In 1916, the area of burnt forests up to 10 years of age in Galicia was estimated at 5,600 ha and for forests between 10 and 30 years of age at 6,000 ha.[29] In 1916, Zdzisław Tarnowski, president of the Kraków Agricultural Society, estimated losses in the Sandomierz Forest alone at 35,000 morgen (17,265 hectares).[30] In the Nisko district, just short of 20,000 morgen (11,510 hectares) were lost due to warfare and deliberate arson by the Russians.[31]

To illustrate the nature and scale of the damage done to forests, one can cite accounts in the pages of the journal *Sylwan*. The observations of forester Stanisław Winiarski, who described the destruction of forests near the town of Baligród in the Sanok district of the Bieszczady Mountains, are interesting. This area saw several months of local fighting in late 1914 and early 1915. One of the mountains, which was covered with fir, spruce, and beech trees aged 40–90 years old, was occupied by Russian troops and shelled by Austro-Hungarian artillery, which completely devastated a forest several hundred metres long and about 200 m wide. Artillery fire destroyed around 100 yew trees, many of which reached a height of 4 m and had a trunk diameter of 20 cm.[32]

As another example, the situation in the forests belonging to the Order of St. Benedict monastery in Staniątki in the Bochnia district can be cited. It had four forest complexes, of which the first forest was the least affected, as no public road ran through it and therefore there were no army movements or stops there. The other three forests suffered from felling, burning, the construction of

27 Sandomierz Forest is a large, dense forest complex located in the Sandomierz Basin, in the fork of the Vistula and San Rivers. In the 19th and 20th centuries, it suffered as a result of human economic activity (cattle grazing, timber industry, heavy industry expansion, pollution by sulphur compounds). Currently, part of the forest is covered by Natura 2000, a nature conservation programme within the territory of the European Union.

28 "Korespondencja Adama Kozłowieckiego z Huty Komorowskiej" [Correspondence of Adam Kozlowski from Huta Komorowska], *Sylwan,* no. 7–12 (1915): 124–25, Stanisław Sokołowski, "Teraźniejszość i przyszłość naszych lasów" [Present and future of our forests], *Sylwan,* no. 7–9 (1916): 86.

29 *Sprawozdanie ck. Namiestnictwa Centrali krajowej dla gospodarczej odbudowy Galicji* [Report of the ck. Governorate of the National Headquarters for the Economic Reconstruction of Galicia] (Kraków: c. k. Namiestnictwo Centrala Krajowa Dla Gospodarczej Odbudowy Galicji [c. k. Governorate Central for the Economic Reconstruction of Galicia], 1917), 128.

30 "Z podróży pp. Ministrów po Galicji" [From the travels of the Ministers in Galicia], *Tygodnik Rolniczy* [Farmers Weekly], no. 8 and 9 (1916): 50.

31 Lasocki Zygmunt, "Z tragicznego trójkąta" [From the tragic triangle], *Piast*, no. 34 (1915): 5.

32 Stanisław Winiarski, "Z Karpat" [From the Carpathians], *Sylwan*, no. 1 (1918): 28–29.

field fortifications, and artillery shelling. The losses were estimated at around 1,500 trees.[33]

In the estate of Zarzecze,[34] owned by the Dzieduszycki family, 350 morgen (about 201.4 hectares) of forest were cut down and another 265 morgen (about 152.5 hectares) burnt.[35] In the Krasiczyn forests[36] in the Przemyśl district, 864.21 ha of the total area of 1876.22 ha, or 40%, were felled or destroyed in the three forest sectors[37] located in the fortress strip during the battles for the Przemyśl fortress. In the aforementioned sectors, surviving stands lost between 10% and 60% of their canopy through felling. Other sectors, outside the fortress defence line, suffered lesser losses. The most affected was sector no. IV in the municipality of Wapowce (898.17 ha), where 40.94 ha were destroyed and between 10% and 65% of the stands were damaged over an area of 182.75 ha, and the least affected was sector no. II, the furthest from the fortress, where clearings covered 32.45 ha of its total area of 544.44 ha and nowhere exceeded 40% of the original canopy.[38]

As a result of the exploitative, uncontrolled, and indiscriminate felling carried out by the inhabitants of the Lviv area, urban forests there suffered significant losses. In one village, the losses were estimated at around 300 morgen (about 172.7 hectares), in another village 30-year-old pine and spruce plantations fell victim to civilians, and in another two forest complexes 100 morgen (about 57.6 hectares) of stands were fully cleared.[39]

The forests between Brody and Zabłotce in the Brody district on the eastern border with Russia[40] were completely cleared. The two villages are approximately 18 km apart.

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33 "Korespondencja Józefa Stronera ze Staniątek" [Correspondence of Józef Stroner of Staniątki], *Sylwan*, no. 7–12 (1915): 120–22.

34 Zarzecze is a village in the Jarosław district. It featured a palace complex that belonged to the Dzieduszycki family.

35 Kazimierz Karolczak, *Dzieduszyccy: Dzieje rodu* [The Dzieduszyckis: The history of the family] (Kraków: Wydawnictwo Naukowe Akademii Pedagogicznej, 2000), 205.

36 Krasiczyn forests refers to forests included in the landed estates belonging to the Sapieha family, the capital of these estates was the town of Krasiczyn, which boasted an impressive castle.

37 Forest sector—an area of forest supervised by a forester.

38 Józef Szymusik, "Lasy krasiczyński kiedyś a dzisiaj" [Krasiczyn forest in the past and today], *Sylwan*, no. 1–3 (1917): 5–7.

39 "Najnowsze wiadomości ze Lwowa" [Latest news from Lviv], *Gazeta Krakowska*, no. 254 (1915): 2.

40 Oktawia Ożarowska, "Zniszczenie gospodarcze w powiecie brodzkim" [Economic destruction in the Brody district], *Tygodnik Rolniczy* [Farmers Weekly], no. 13 (1918): 171.

One consequence of warfare was the growth of forest pest insect populations. Due to clearing and felling, damage caused by rifle and artillery fire, and fires and natural disasters,[41] enormous amounts of damaged and charred stumps and branches accumulated in the forests, which were not controlled, managed (fallen trees were not debarked), and removed, and thus provided an excellent breeding ground for forest pests, which then attacked healthy trees. In 1916, the area infested by forest pests was estimated at around 208,000 ha of forest, including 12,000 ha completely destroyed, mainly in the San and Bug River basins in northern Galicia and in the Carpathian foothills and the Carpathian Mountains themselves.[42] Ludwik Sitowski[43] estimated the area of the Sandomierz Forest destroyed by the bordered white moth larvae at 1,500 morgen (about 683.3 hectares) of forest in the area of the village of Mokrzyszów alone.[44] Forests in the Tatra Mountains were attacked by the European spruce bark beetle.[45] This invasion was not a direct result of military action, as fighting was not taking place in the area, but the state of war indirectly influenced the spread of this pest because adequate countermeasures were not taken due to the lack of qualified foresters, people to do the work, and wagons.[46] In 1921, it was estimated that the area affected by the bark beetle covered some 30,000 morgen (17,265 hectares), and several hundred forestry workers and an enormous number of carts were needed to effectively control the forest insect

41 In April 1916, a snowstorm (with snow frozen to branches, hanging from them in the shape of grape bunches) and hurricane winds destroyed tens of thousands of cubic metres of trees. In the autumn of 1916 and the winter of 1917, the wind wrought further damage to the forests in the Podhale region.

42 *Sprawozdanie ck. Namiestnictwa* [Report ck. Governance], 128; "W sprawie sanacji zniszczonych wypadkami wojennymi lasów w zachodniej części kraju" [On the sanitation of forests in the western part of the country destroyed by war accidents], *Tygodnik Rolniczy* [Farmers Weekly], no. 9 (1916): 82–83.

43 Ludwik Sitowski (1880–1947)—a Polish researcher, zoologist, entomologist, head of the experimental station for the study of animal pests on plants at the Institute of Zoology of the Jagiellonian University in the years 1916–18, rector of the University of Poznań in the interwar period (1925–26).

44 Ludwik Sitowski, "Walka ze szkodnikami" [Pest control], *Tygodnik Rolniczy* [Farmers Weekly], no. 19 (1917): 182–84; Ludwik Sitowski, *Z biologii poprocha cetyniaka* (*bupalus piniarius*) *w Puszczy Sandomierskiej* [From the biology of the cetacean (bupalus piniarius) in the Sandomierska Forest] (Poznań: Drukarnia Uniwersytecka, 1922), 1–8.

45 The European spruce bark beetle (*Ips typographus*) is a species of beetle in the bark beetle family, which lives under the bark of trees where it burrows corridors, a dangerous pest that attacks coniferous forests.

46 "Inwazja kornika w Tatrach" [Bark beetle invasion in the Tatras], *Tygodnik Rolniczy* [Farmers Weekly], no. 20 (1918): 263.

infestation.[47] It is worth mentioning that during the First World War the spruce bark beetle attacked forest complexes in other regions of the Polish lands, especially in the eastern districts of the Second Republic (the Białystok, Sokółka, Bielsk Podlaski, Szczuczyn, and Suwałki regions).[48] However, in the district of Nowy Targ, in the years 1917 to 1918, a May beetle infestation appeared,[49] contributing to the economic impoverishment of the local population, who made their living from agriculture and horticulture. This insect destroyed cereal crops and attacked potatoes and legumes. The May beetle plague in the region can be indirectly linked to the war, as over its course there was a shortage of fertilizers, especially phosphate fertilizers, which reduced the population of this pest. In their place, natural manure was used, which encouraged the pest's growth, especially in dry and sunny soils (there was a drought in Galicia in the summers of 1917 and 1918). Thus adverse economic (war, economic crisis), natural (drought), and natural (plant pest infestation) conditions overlapped.[50]

Currently, one of the key threats to the ecosystem is the decline in bee populations caused by the extensive use of plant protection products in agriculture. During the First World War, bees in the Galician area suffered greatly as a result of the fighting, theft, and economic crisis. The destruction of beekeeping and bees took place in stages. In the years 1914–15, destruction was wrought by masses of soldiers that swept across the country. Further damage to the bee farms was contributed to by the absence of beekeepers who had been drafted into the army, as well as forced evacuations of the population, instances of sacking, disastrous weather conditions, especially in the years 1916–18 (cold and dry springs), and the destruction of beekeeping equipment, especially

47 Karol Kwaśniewski, "W sprawie ochrony lasów tatrzańskich" [On the protection of the Tatra forests], *Sylwan*, no. 4–6 (1921): 55–60, "Okólnik okręgowej inspekcji leśnej w Nowym Sączu do właścicieli lasów, zarządów, zarządów lasów, zwierzchności gmin i posterunków policji państwowej" [Circular of the district forest inspectorate in Nowy Sącz to forest owners, boards, forest managements, communal authorities and state police stations], *Sylwan,* no. 4–6 (1921): 60–61.

48 Stefan Kałuba, "Monografia kornika-drukarza" [Monograph of the woodworm-printer], *Las Polski* [Polish Forest], no. 5–6 (1921): 199.

49 The May beetle (*Melolontha melolontha*) is a species of beetle that feeds on the leaves of deciduous trees, including fruit trees, whose larvae feed on the roots of herbaceous plants, shrubs, and trees, making the species a threat to fruit farming, horticulture, and forestry.

50 Ludwik Sitowski, "Klęska chrabąszczy w powiecie nowotarskimi" [A disaster of beetles in the Nowy Targ district], *Tygodnik Rolniczy* [Farmers Weekly], no. 21 (1918): 273–74, "Wieści z kraju. Z ziemi sądeckiej" [News from the country. From the land of Nowy Sącz], *Tygodnik Rolniczy*, no. 32 (1918): 407.

apiaries and bee sugar.[51] Before the war, the number of bee colonies[52] was estimated to be around 350,000. The war effort destroyed around 200,000 of them. As many as 50,000 were saved in western Galicia, and 100,000 in eastern Galicia. The 1916 statistics for the 37 western districts showed the following losses: 6,143 hives, 2,637 swarms, and 4,009 colonies.[53]

Data for districts, municipalities, and individual beekeepers is available, and giving these, contrasted with the state of affairs before the start of the war, allows us to underline the extent of the damage done to beekeeping. In the Tarnów district alone, according to calculations by the District Council and municipal offices, 1,367 bee hives were destroyed.[54] In the 13 municipalities of the Tarnopol district surveyed by beekeeping instructor Józef Biernat in July 1918, there were 5,706 colonies owned by 144 beekeepers at the outbreak of war. As a result of warfare and looting, 4,937 colonies were destroyed, completely ruining 27 farmers who did not own a single colony by 1918. At the time of the inspection, the number of colonies in the municipalities mentioned was 2,881, owned by 117 beekeepers.[55] The situation of individual beekeepers is illustrated by an account by Mikołaj Boruch from the village of Wygoda in the Pilzno district from April 1916, published in the trade journal *Bartnik Postępowy*. Boruch had been keeping bees for forty years, but on a small scale. In 1914, he owned three hives of his own and looked after his son and daughter-in-law's bee farm, which consisted of eight hives. One hive was destroyed by a Hungarian soldier and the rest buried in the ground in November 1914. In mid-April 1915, Boruch dug them up. Most of the bees had survived, and only one hive did not survive the winter. Other beekeepers protected their bees in a similar way.[56] Thus, thanks to Mikołaj Boruch and thousands of other beekeepers, Galician beekeeping survived the wartime crisis. Contemporary sources did not report on the threat to agriculture and horticulture caused by the lack of bees, which pollinate plants.

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51 *Bartnik Postępowy*, no. 8 (1918): 131, "Kilka uwag wobec spóźnionej wiosny" [Some comments on the late spring], *Tygodnik Rolniczy* [Farmers Weekly], no. 19 (1917): 182, "Posucha a uprawa roli" [Drought and tillage], *Tygodnik Rolniczy* [Farmers Weekly], no. 24 (1917): 244–45.

52 A bee colony includes the hive and the honeycombs.

53 Kazimierz Brzeziński, "Ze statystyki ogrodniczej" [From horticultural statistics], *Ogrodnictwo* [Horticulture], no. 2 (1918): 52.

54 Michał Bartosz, "Plan odbudowy pszczelnictwa" [Beekeeping recovery plan], *Piast,* no. 34 (1917): 11.

55 Józef Biernat, "Sprawozdanie okręgowego instruktora pszczelnictwa" [Report of the district beekeeping instructor], *Bartnik Postępowy* [Progressive Bartnik], no. 10 (1918): 161–63.

56 Mikołaj Boruch, "Wieści z pasiek" [News from the apiaries], *Bartnik Postępowy* [Progressive Bartnik], no. 4 (1918): 68–69.

Estate owners and tenants suffered losses in fish farming. These consisted of the destruction of or damage to pond facilities (dikes, weirs, levees), direct damage resulting from the draining of ponds and the harvesting of fish, and indirect damage caused by the lack of stocked fish. It was common practice for Austrian, Hungarian, and Russian soldiers to stun fish with grenades and explosives. In the western part of Galicia (Oświęcim district), ponds were destroyed by the flooding of the Vistula in 1916. It was estimated that it would take 4–6 years to rebuild fish farming in Galicia.[57] The exploitative harvesting of fish also extended to rivers. The fishing was carried out by soldiers and local people, with no one in control of this practice, as many of the guards of the fishing sectors had been drafted into the army. Large expanses of flowing water were left unattended and unchecked, and thus there was a fear of rivers being left without fish, although this did not happen.[58]

The war had a strong impact on the fauna in Galicia. Above all, poaching, practised by soldiers and civilians alike, became widespread over its duration. This affected roe deer, hares, and partridges. The Russians, having mostly military rifles at their disposal, were more effective at hunting roe deer than other smaller game.[59] Roe deer and hares also died as a result of attacks by stray dogs and cats, and lack of access to food in the form of winter cereals that were not sown, especially in 1914/1915.

Warfare and illegal hunting contributed to changes in the populations of certain animal species and their migrations. Forests near major cities and railway lines suffered the greatest losses of wildlife. In contrast, in areas where hostilities and Russian occupation lasted for a shorter period, such as in the western part of Galicia (Kraków, Podgórze, and Wieliczka regions), the losses were lower. These geographical differences led to a press polemic in 1915 about the situation of wild animals in the first months of the war. Cezary Kochanowski argued in the pages of the *Österreichische Forst-Zeitung* that the situation of

57 *Rolnik,* no. 6 (1916): 69; "Szkody wyrządzone przez wojnę w gospodarstwach rybnych kraju, tak stawowych jak i rzecznych" [The damage caused by the war to the country's fish farms, both pond and river], *Tygodnik Rolniczy* [Farmers Weekly], no. 19 and 20 (1916): 151–53.

58 "Gospodarstwa rybne po inwazji" [Fish farms after the invasion], *Czas* [Time], no. 649 (1915): 2–3; "O ochronę naszych ryb" [For the protection of our fish], *Tygodnik Rolniczy* [Farmers Weekly], no. 11 (1915): 101. The State Archive in Rzeszów, Archiwum Zarządu Dóbr Sędziszowskich, signature 275, Odezwa Krajowego Towarzystwa Rybackiego do właścicieli gospodarstw rybnych, Kraków 13 XII 1915, 41–42 [Archive of the Management of the Sędziszów Estate, signature 275, The proclamation of the National Fisheries Society to owners of fish farms, Kraków 13 XII 1915, 41–42].

59 "Zapiski z polowań w sezonie myśliwskim 1915/1916" [Hunting notes for the 1915/1916 hunting season], *Łowiec* [Hunter], no. 9 and 10 (1916): 78.

the animals had not been all that critical, as the general mobilization included many poachers and an order had been given to surrender their weapons, hunting had been forbidden, and casual hunting by soldiers had not been effective as they did not have shotguns. Furthermore, the winter of 1914/1915 was mild. These opinions were disagreed with by the editors of the Galician journal *Łowiec*, who argued that not all poachers had been mobilized and not all had surrendered their weapons, especially "professional poachers", and that the use of snares, traps, and other poaching equipment, as well as hunts organized by Russian officers and soldiers with the setting up of a chase, the use of machine guns etc., were considered more dangerous. The *Łowiec* gave examples of places where wild animal populations had suffered significant losses (Przemyśl region, Lviv, Rozwadów—where deer, roe deer, and pheasants were exterminated, Subcarpathia).[60] The *Łowiec* reporter estimated that in the region of Radziechów, in north-eastern Galicia, the deer population had decreased to one-third of the pre-war stock. In the Radłów Forest (near Tarnów), the deer population was estimated at 800 before the war, and in October 1916 at only about a few dozen.[61] On the other hand, the correspondents of *Łowiec* cited areas where animal populations had not shrunk as a result of the war. This was primarily in western Galicia, which was not affected by the war, but also areas of eastern Galicia, such as the area of the village of Sianki in the Turčan district, and in southern Galicia near the Hungarian border. Stefan Filipowicz's correspondence shows that the war did not affect the state of game in the local region. This may have been due to the terrain (mountainous, difficult to access for civilian and military poachers), lower population density, and lower intensity of fighting. The correspondent accurately estimated the population of each species, i.e. deer—"condition as in previous years (average)"; roe deer—"excellent condition"; hares—"condition generally worse than in previous years due to the proliferation of the fox population"; wolves—"appeared in December 1915 but then disappeared"; hazel grouse—"quite numerous";

60 Cezary Kochanowski, "Wildstand in den vom Feinde gesäuberten Gebieten Galiziens" [State of the game in the areas of Galicia cleared of the enemy], *Österreichische Forst und Jagd Zeitung* [Austrian Forestry and Hunting Newspaper], no. 1708 (1915): 1–2, "Stan zwierzyny w oswobodzonej Galicji" [The state of game in liberated Galicia], *Łowiec* [Hunter], no. 21 and 22 (1915): 173–75.

61 "Co się dzieje w naszych kniejach?" [What is happening in our forests?], *Łowiec* [Hunter], no. 1 and 2 (1915): 9–10; "Korespondencje" [Correspondences], *Łowiec* [Hunter], no. 9 and 10 (1915): 78–80, "Korespondencje" [Correspondences], *Łowiec* [Hunter], no. 21 and 22 (1915): 175, "Korespondencje", *Łowiec,* no. 23 and 24 (1915): 190–91, "Korespondencje" [Correspondences], *Łowiec* [Hunter], no. 9 and 10 (1916): 77–78.

woodcock[62]—a "very weak" population.[63] Concluding the theme of wildlife numbers during the war, it should be stated that, in general, during the first two years of the war (1914–16), the population of roe deer and deer decreased, while that of wild boar, fox, and hawk increased. In the succeeding years, the following phenomena were observed in the areas liberated from Russian occupation: a decrease in the stock of small game (hares) as a result of the proliferation of predators (foxes and wolves); the recovery of the roe deer population due to anti-poaching measures and a reduction in hunting; and the continued proliferation of wild boar, which caused considerable damage to farms.[64] The direct and indirect effects of the war were still being felt in the early 1920s—a decrease in the population of roe deer and deer, and an increase in wild boar. This was later confirmed by correspondence from various areas of former Galicia (Niska, Nadwórna, Gródek, Skole region).[65]

The war was linked to the phenomenon of the distribution change for fauna—the departure and arrival of certain game animals in the areas were there had been fighting or army movements. The sound of fighting forced game to change location, e.g. during the fighting in the Carpathian Mountains, deer moved to areas where they had not been seen before the war, while wolves appeared to follow the turmoil to areas where there were dead horses, waste from field slaughterhouses and kitchens, and battlefields. The hunting press, based on correspondence from hunters, reported that wild boar, foxes, and wolves had appeared near human settlements, and the arrival dates of storks had changed. Observations of animal and bird behaviour in Galicia coincided with the situation on the Western Front, where in the autumn of 1914, during violent fighting, flocks of migratory birds left Belgium and, unable to fly over France, took refuge in England.[66] In 1916, a plague of striped field mice appeared in some areas of Galicia, posing a threat to crops. In October 1916, a regulation was issued to collect information on these pests. The campaign

62 The woodcock, or common woodcock, is a species of medium-sized bird from the Scolopacidae family.

63 "Korespondencja" [Correspondence], *Łowiec* [Hunter], no. 5 and 6 (1916): 44.

64 "Korespondencje" [Correspondences], *Łowiec* [Hunter], no. 19 and 20 (1916): 157, "Z notatek myśliwskich" [From the hunter's notes], *Łowiec* [Hunter], no. 11 and 12 (1917): 92, "Zwierzyna a wojna" [Game and war], *Łowiec* [Hunter], no. 19 and 20 (1917): 155, "Korespondencje", *Łowiec,* no. 5 and 6 (1918): 41, "Z notatek myśliwskich", *Łowiec* [Hunter], no. 9 and 10 (1918): 76.

65 "Korespondencje" [Correspondences], *Łowiec* [Hunter], (1921), no. 2: 6, no. 3: 6, no. 5: 6.

66 "Kronika" [Chronicles], *Łowiec* [Hunter], no. 3 and 4 (1915): 31–32; "Korespondencje" [Correspondences], *Łowiec* [Hunter], no. 5 and 6 (1915): 47–48, "Kronika" [Chronicles], *Łowiec* [Hunter], no. 1 and 2 (1916): 14.

to eradicate them, was postponed until spring 1917 due to a lack of poisonous agents.[67] This was unsuccessful, as field mice attacked crops again that year.[68]

Another consequence of warfare was the destruction of environmental engineering infrastructure. Damage to drainage was divided into four categories. The first comprised losses caused by direct military operations, such as the construction of fortifications. The second type was indirect damage, i.e. caused by siltation, pollution, and lack of maintenance. The third category included land reclamation works started before the war but not completed as a result of the fighting. The last consisted of those drainage facilities that would require modifications after the war and work that would be carried out under changed conditions (e.g. shortage of labour, increased cost of works).[69]

Artillery shelling and trench lines damaged drained and meliorated areas. Indeed, the network of canals and drainage ditches and road ditches was wrecked. Work to regulate river and stream beds was neglected. A few months into the war, the hydrological projects from the last few pre-war years were ruined. The warfare caused damage to the dykes on the Vistula and its tributaries, especially on the Dunajec, Wisłoka and San Rivers, and on the tributaries of the Dniester, especially on the Gniła Lipa (Hnyla Lypa) and Złota Lipa (Zolota Lypa), along which the front line ran in 1915. The embankments were cut up by firing ditches and shelters for officers and soldiers. Dikes and other water and drainage facilities were not blown up during the war, so there was no flooding or inundation caused by this. In the spring of 1916, however, there were floods in the Vistula and Dunajec River basins caused by heavy rains. During the war, no work was carried out on river embankments, with the exception of a section of the Vistula near Kraków, and the repair of damaged structures, primarily the embankments of the Vistula, the Dunajec, the Wisłoka, and the Gniła Lipa and Złota Lipa.[70]

67 *Sprawozdanie ck Namiestnictwa* [Report of the ck governorate], 126.

68 Odo Bujwid, "Groźba myszy polnych" [The threat of field mice], *Tygodnik Rolniczy* [Farmers Weekly], no. 44 and 45 (1917): 458–59.

69 The National Archives in Kraków, Archiwum Dzikowskie Tarnowskich, signature 757, Protokół z Sesji Rady przybocznej Sekcji 11. odbytej dnia 10-go maja 1917 [Archives of the Tarnowski family from Dzików, signature 757, Minutes of the Session of the Adjourning Council of Sec. 11. held on 10 May 1917], 612–13.

70 Andrzej Kędzior, "Naprawa wałów ochronnych nad Wisłą i dopływami" [Repairing the dykes over the Vistula and tributaries], *Piast,* no. 31 (1915): 11; "Regulacja rzek a powodzie" [River regulation vs. floods], *Tygodnik Rolniczy* [Farmers Weekly], no. 21 (1916): 168; Andrzej Kędzior, *Roboty wodne i melioracyjne w południowej Małopolsce wykonane z inicjatywy Sejmu i Wydziału Krajowego, część I. Ogólna* [Water and drainage works in southern Małopolska carried out on the initiative of the Sejm and the National Department, Part 1.

In summary, wartime operations had a significant impact on the economic and natural situation of Galicia (southern Poland after the collapse of the Habsburg Monarchy in 1918). The effects of several years of war carried over into intensive farming (lack of natural and artificial fertilizers, fallow land, weedy fields), into soil erosion, and thus reduced crop yields. There were enormous losses in forest stands; yew trees became endangered, and the planting of conifers, pine and spruce was promoted in place of the destroyed forests. The war brought a sudden imbalance of the organic world in the forests and changes in animal populations. In the aftermath of the warfare, populations of pests (mice) and predators (foxes, wolves) and wild boar, increased, while roe deer and deer populations fell dramatically. Smaller game (hare) and fowl populations were not affected. The war created, either directly or indirectly, favourable conditions for the development of insects harmful to trees and plants, especially in the Sandomierz Forest, where they appeared in 1916 and were still destroying forests in the 1920s. The above phenomena had long-lasting effects, which were evident throughout the interwar period. The situation in Galicia was no different from that in other districts in the Polish lands. The same problems were observed in the Kingdom of Poland and the western governorates of the Russian state, where enormous losses of forests were recorded, especially in the Bialowieża Forest, and the extermination of the European bison became a tragic symbol of the consequences of the war on fauna.[71]

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71 For more, see Łukasz Faszcza, "Eksploatacja i ochrona. Lasy ziem polskich pod niemieckim zarządem okupacyjnym w latach 1914–1919" [Exploitation and Protection. Forests of the Polish lands under German occupation administration 1914–1919] (PhD diss., University of Warsaw, 2022).

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CHAPTER 4

Oil as a Resource and Element of Defence: the Cases of Galicia in 1915 and Romania in 1916

Yaroslav Golubinov

1 Introduction

From the very beginning of the First World War, the Eastern Front had a number of distinct aspects which were defined by the geographical, ethno-cultural, and socio-economic characteristics of the regions lying at the borders of three major empires: Russia, Germany, and Austria-Hungary. The most important of these aspects, in my opinion, was the striking variety of landscapes, ethnicities, and economic practices.[1]

The combatant armies had to adapt to methods of modern warfare, which were to be used both among the forests, mountains, swamps, and steppes nearly untouched by economic development and within landscapes already modified by industrial production, particularly in the oil-producing regions, including Austrian Galicia, with its high concentration of oil wells and refineries near Drohobych and Boryslav, and the Romanian *judeţe*[2] (counties) Dâmbovița, Prahova, and Buzău. Access to oil reserves was particularly important for both the Alliance (Entente) and the Central Powers; however, oilfield exploitation was complicated by the fact that in 1914–15 and 1916, the oil-bearing regions found themselves on the front line of the Great War.[3] As well as being a valuable economic resource, oil and petroleum products such as fuel and lubricants (F&L) were part of the military defence system against the advancing enemy. This chapter will focus on the problem of using non-military industrial facilities in the context of this system.

The use of non-military industrial facilities for defence purposes involved both their regular exploitation (which, on the whole, was typical under military

1 The research for this chapter was funded by the Russian Foundation for Basic Research (RFBR) within the framework of research project No 21–59-14003 "Great War and the Anthropocene: 'Imperial Debris' and Environmental Change in Central-Eastern Europe".

2 A *judeţ* (plural *judeţe*) is an administrative division of Romania.

3 Oliver Gliech, "Petroleum," in *1914–1918-online. International Encyclopedia of the First World War*, ed. Ute Daniel et al., issued by Freie Universität Berlin. Published online 7 January 2015, doi: 10.15463/ie1418.10532.

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occupation) and their intentional destruction in order to inflict the greatest achievable damage to the enemy. The damage could consist of destroying personnel or anything useful to the enemy. The attitude to the combat space (and any features within this space) underwent a change. For example, Russian historian Sergei Nelipovich pointed out that in June 1915 the Russian command decided to resort to the "scorched earth" tactic in the front line territory, irrespective of whether particular areas belonged to Russia or to the enemy.[4] This new attitude to combat space absolved the army of the need to preserve industrial and agricultural facilities or natural sites such as forests, rivers, and swamps. Every asset was now evaluated in terms of its suitability for defence or attack—and was anticipated to be destroyed in either of these scenarios.

This study is based on documents of several types. The first group of sources is the military correspondence (letters and telegrams) exchanged by the Russian commanders and the Entente military officials. The second group consists of reports by officers responsible for the oil well destruction missions in Galicia and Romania; the group also included damage reports submitted by oil-producing companies (this is the first study to use reports by Roumanian Consolidated Oilfields Ltd. and descriptions of the court proceedings initiated by the company to receive compensation from the British Crown). Finally, the third group of documents comprises regimental histories written after World War I, as well as memoirs and diaries of individual combatants.

The chapter will address, firstly, the situation of the Eastern European oil industry prior to World War I, the economic and environmental aspects of mining, and the impact of the war on the oil mining sector. Next, it will analyse two cases of intentional destruction of large oil stocks before anticipated enemy offensives: the first operation was carried out by the Russian army during the Great Retreat of 1915; the second was the mission of an international British–French–Romanian unit supported by the Russian forces during the fast offensive launched in Romania by the Central Powers in 1916. The final section of this chapter will compare these operations and assess their consequences for the Eastern European environment. The chapter concludes by stating that the Great War saw the destruction of major production facilities emerge as a method and means of warfare, something which had been uncommon for any armed conflicts prior to World War I.

4 Sergeĭ Nelipovich, *Russkiĭ front Pervoĭ mirovoĭ voĭny: poteri storon* [Russian front of the WWI: losses by the parties] *1915* (Moscow: Kvadriga, 2022), 376.

2 Exploitation of Eastern European Oilfields before and during the First World War

Oil production in Eastern Europe started in the second half of the 19th century. Over time, oil mining technologies evolved from the digging of primitive wells and raising oil to the surface with buckets to state-of-the-art extraction methods that relied on sophisticated mechanical equipment (primarily the American and Canadian drilling technologies) in both Galicia[5] and Romania;[6] in some oil-producing districts, however, the old technologies remained in use until the mid-20th century. The increase in oil output due to the technological advances, despite having had a positive influence on the economy of the region, resulted in serious hazards to the environment.

Environmental pollution was a serious problem for oil-producing regions at the beginning of the First World War; oil and petroleum products often contaminated water sources and agricultural lands. This problem was hardly a secret for the local authorities. In 1908, the Galician viceroy Michał Bobrzyński had received repeated "alarming complaints from the rural residents in the Tustanowice area about immense damage caused by the flowing of petroleum into the Tyśmienica River", but proved unable to rectify the situation.[7]

This attitude to environmental pollution was mainly linked to the contemporary mining technologies, as well as economic considerations. Fossil fuel was in great demand and had to be cheap in order to make effective market competition in the mining sector possible. In 1913, Galicia and Romania produced 1.1 million and 1.8 million tons of oil, respectively.[8] Joint stock companies and banks from developed European countries and the USA invested heavily in the oil industries; however, after the breakout of the war, all oil and petroleum products irrespective of the industrialists' nationality or location of the companies' head offices were transported from Galicia to the Central Powers. Even

5 Boris Lavskiĭ, "Pol'skaia neftianaia promyshlennost' (istoricheskiĭ ocherk) (nachalo)" [Polish oil industry: a historical sketch. Beginning], *Neftianoe khoziaĭstvo* [*Oil Economy*] 12, no. 1 (1927): 113–19.

6 Gheorghe Ravaş, *Iz istorii rumynskoĭ nefti* [From the History of the Romanian oil], ed. I. D. Koriagin, trans. M. Ia. Lebedeva (Moscow: Gosudarstvennoe nauchno-tekhnicheskoe izdatel'stvo neftianoĭ i gorno-toplivnoĭ literatury, 1958), 62.

7 His report is quoted in Alison Frank, "Environmental, Economic, and Moral Dimensions of Sustainability in the Petroleum Industry in Austrian Galicia", *Modern Intellectual History* 8, no. 1 (April 2011): 178, doi: 10.1017/S1479244311000102.

8 Gliech, "Petroleum".

neutral Romania, where the British and American capitals played a dominant role in the oil market, sold oil and petrol to Germany and Austria-Hungary due to the blockade of the Bosporus and Dardanelles; this arrangement persisted until Romania entered the war in 1916.[9]

The investments stimulated oil and gas extraction (as well as ozokerite mining in Galicia) and boosted profits for oil field owners and company shareholders. On the other hand, early 20th-century technologies were far from perfect: the drills would often break; the wells would collapse and fill with water; oil blowouts caused spills which polluted the soil and groundwater, etc.[10] In many cases, production technologies were designed to prevent risks to the workers' lives rather than the environment;[11] indeed, the development of safety arrangements was mostly driven by the fear of fires, which frequently broke out because of staff negligence or natural disasters such as lightning strikes.[12]

Fires became a real scourge for oil wells. Gradually, the number of accidents decreased, firstly due to the safety policies (including the installation of lightning rods and electrical lighting systems at oil rigs and plants) imposed by the governmental authorities, secondly due to better oil mining technologies which prevented uncontrollable oil blowouts and spills, and thirdly due to the progress made in oil storage and transportation methods (improved oil pipelines, cisterns, and reservoirs). Even then, disasters would sometimes strike; one dramatic example was the fire in Tustanowice in 1908, when it took a whole month to extinguish the burning well that yielded 2,500 tons of oil daily.[13] In a way, these disasters served as a rehearsal for the demolition of the oil industries during the war.

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9 Gheorghe Buzatu, *O istorie a petrolului românesc* [A history of Romanian oil], 2nd ed., revised and enlarged (Iaşi: Demiurg, 2009), 33.

10 Liliia Korytko, "Stanovlennia i rozvytok pryrodookhoronnykh instytutiv v Avstro-uhors'kiĭ imperiï: istoryko-pravovyĭ vymir (na materialakh Skhidnoï Halychyny 1867–1918 rr.)" [Establishment and development of nature protected institutes in Austro-Hungarian empire: historical-legal dimension (on the materials of Galicia)] (PhD diss.: Lviv State University of Internal Affairs, 2017), 285–86.

11 Although much attention was paid to work safety at oil production facilities in Russia, Austria-Hungary, and Romania, occupational injuries among the workers were very common. See Ivan Glushkov, "Burenie skvazhin" [Borehole drilling], in *Okhrana zhizni i zdorov'ia rabochikh v promyshlennosti: sbornik.* [Protection of life and health in industry: a compendium] *Ch. 3: Gornoe delo, Vyp. 2.* (Saint Petersburg: Tip. P. P. Soĭkina, 1913), 25–67.

12 Ivan Glushkov, "Dobycha nefti" [Oil production], in *Okhrana zhizni i zdorov'ia rabochikh v promyshlennosti: sbornik* [Protection of life and health in industry: a compendium] *Ch. 3: Gornoe delo, Vyp. 2* (Saint Petersburg: Tip. P. P. Soĭkina, 1913), 69–105.

13 Piotr Franaszek, "Eksploatacja ropy w Galicji a zagrożenia dla środowiska naturalnego" [Oil exploitation in Galicia and environmental hazards], in *Od regaliów po dobro narodowe: ochrona i wykorzystanie zasobów środowiska naturalnego na ziemiach polskich—aspekt historyczny* [From regalia to national good: protection and use of envi-

The fates of the oil-bearing regions across Eastern Europe during World War I were very similar. Having been the focus of interest on the part of Western European and American monopolies before 1914, Galician and Romanian businesses retained their commercial appeal after the beginning of the conflict, firstly as important elements in the military economic system, and secondly as a valuable resource which could be effectively integrated into the winning economy after the war.

In his review of Galicia's mineral resources, Evgeny Yushkin, engineer and oil industry expert from the North Caucasus, wrote that "Galicia must make, and will make, a contribution to our [i.e. the Russian] economy" and claimed that the areas "where our valiant armies are fighting at present appear to hold great promise with regard to mineral resources; the assessment of their 'mining potential' must be regarded as a task of great urgency".[14] Ever since the beginning of the war, the Russian industrial press (including *Neftianoe delo*, published by the Council of the Congress of Oil Industrialists in Baku) had emphasized the interest exhibited by Russian oil industrialists in Galician resources[15] and reported on the plans of the Russian Ministry of Industry and Commerce to explore, and launch production in, the areas captured by the Russian army in the shortest perspective.[16] The Russian businesses faced strong competition from British and French joint-stock companies, which immediately sent their representatives to the area of the military operations to evaluate the state of their oil production facilities;[17] the Russian Ministry of Foreign Affairs instructed the military command to assist them.[18]

Galicia and Bukovina were parts of Austria-Hungary that in 1914–18 experienced enemy occupation, which had a direct effect on the military, political, and socio-cultural spheres. The new Russian authorities attempted to reorganize the existing governance strategies, public health, education, church life,

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ronmental resources in the Polish lands—historical aspect], ed. Tomasz Głowiński and Marek Zawadka (Wrocław: Wydawnictwo GAJT, 2016), 50.

14 Evgeniĭ Iushkin, *Gornye bogatstva Galitsii* [Mining wealth of Galicia] (1915), 14.

15 *Neftianoe delo* [Oil engineering], 9 September 1914, 34; 23 September 1914, 8; 23 October 1914, 32 etc. Even shortly before the retreat of the Russian army, the Ministry of Commerce and Industry kept receiving requests from Russian businesses wishing to conduct mining operations in Galicia. *Neftianoe delo*, 8 May 1915, 39.

16 *Neftianoe delo*, 8 November 1914, 39.

17 *Neftianoe delo*, 24 November 1914, 32.

18 Moscow, Russian State Military Historical Archive (RGVIA), Fond 2005, Opis' 1, Delo 12, List 260, General Beliaev's telegram to the Russian Supreme Headquarter, 6 (19) February 1915; IAkiv Khonihsman, *Pronyknennia inozemnoho kapitalu v ekonomiku Zakhidnoï Ukraïny v epokhu imperializmu* (*do 1918 roku*) [The penetration of foreign capital into the economy of Trans-Ukraine in the epoch of imperialism (until 1918)] (L'viv: Vyd-vo L'viv. un-tu, 1971), 222.

etc.[19] However, occupation practices also extended to the economic domain, as the Russian administration sought to urgently restart production at the oil wells and refineries that had stopped working because of the war. In this sphere, the interests of the Russian South-Western Front command led in July 1914–March 1916 by General Nikolai Ivanov were closely intertwined with the interests of the civilian government of Galicia headed by Governor-General Georgiy Bobrinsky.

A number of researchers have claimed that "the Russian troops did not pay much attention to the Austrian petroleum facilities when they conquered Galicia"[20] or that the only thing the Russian army could find the time and resources for was destroying the oil fields;[21] this claim, however, is very far from the truth. Governor-General Bobrinsky and specially appointed representatives of the Ministry of Industry and Commerce (first Georgiy Markovsky, then Alexander Ostrogradsky) invested considerable effort to resume regular oil mining and processing operations.

Ostrogradsky's report stresses that the Russian administration primarily focused on the state-controlled oil refinery in Drohobych, which had survived despite considerable damage and looting during the Austrian retreat.[22] From December 1914 to early May 1915, Ostrogradsky was preoccupied with restarting the plant. In his own words, the few remaining workers and engineers had to provide the railway network with an uninterrupted supply of "mazut via the pipeline from Kolpiec to Drohobych, where the fuel was loaded into cisterns"; he also referred to frequent "pipeline blockages and ruptures" due to high temperature and pressure of the fuel. The reconstruction of the plant progressed slowly: it was not until April 1915 that Ostrogradsky finally managed to recruit 200 workers from among the local residents, who were unwilling to return to their workplaces, fearing new battles between the Russian and Austrian forces.

19 Aleksandra Bakhturina, *Politika Rossiĭskoĭ Imperii v Vostochnoĭ Galitsii v gody Pervoĭ mirovoĭ voĭny* [Politics of the Russian Empire in Eastern Galicia during the First World War] (Moscow: AĬRO-XX, 2000).

20 Gliech, "Petroleum".

21 Alison Frank, *Oil Empire: Visions of Prosperity in Austrian Galicia* (Cambridge, MA: Harvard University Press, 2005), 188.

22 Aleksandr Ostrogradskiĭ, *Otchet predstavitelia ministerstva torgovli i promyshlennosti o neftianoĭ promyshlennosti galitsii i kazennom zavode v Drogobyche. Prilozhenie № 9 (k otchetu voennogo gubernatora Galitsii)* [*Report of a represenatitve of the Ministry of Industry and Commerce on the petroleum industry of Galicia and state-controlled refinery in Drohobych. Annex No.9 (to the the report of the military governor of Galicia)*]. (Kyiv: Tipografiia okruzhnogo shtaba, 1915), 6 ff.

TABLE 4.1 Source of the table is Ostrogradskiĭ, *Otchet Predstavitelia* [Report of a representative], p. 11.

	Captured by the Russian troops, kg	Utilized, kg	Residue as of 29 April (12 May) 1915, kg
Oil	143,580,075	7,054,991	136,525,084
Mazut	57,402,532	23,172,721	34,229,811
Kerosene	2,134,537	1,931,598.05	202,938.05
Engine benzine	9,716	9,716	—
Paraffin	46,500	46,500	—

The relaunch of the plant was planned for May 1915; however, the retreat of the Russian troops required urgent evacuation on the scheduled day of opening.

Since the Drohobych refinery (together with many other production facilities) was no longer operational, the Russian administration failed to either process the available oil stock (much to the delight of their Austrian owners, who had fled the country and returned later)[23] or to evacuate it because of problems with the railway transport. However, the stock that could be used by the army and civilians (i.e. kerosene and petrol, which were supplied to hospitals, laundries, the local yeast factory, and other facilities in occupied Lviv) was almost entirely depleted. Ostrogradsky provided the data shown in Table 4.1 on the Drohobych refinery's oil storage, which had been captured by the Russian troops.[24]

In Petrograd, the Ministry of Finance and the Ministry of Industry and Commerce developed plans for the economic development of Galicia by Russian entrepreneurs and transferred a number of Russian administrators and engineers to the region. Nevertheless, the time shortages, the lack of a skilled workforce (which was now composed of Russian engineers, Russian manual workers, and a few remaining Galician oil company employees) and, more importantly, the advancing German and Austro-Hungarian troops during the Gorlice offensive followed by the Great Retreat of the Russian armies in 1915 made it impossible to restore production even at the state-controlled Drohobych refinery. In 1916, the Brusilov offensive led to the second Russian occupation of some oil-bearing regions in Galicia, where oil extraction and processing,

23 Frank, *Oil Empire*, 188.

24 Ostrogradskiĭ, *Otchet Predstavitelia* [Report of a representative], 11.

organized by the Russian Ministry of Finance,[25] continued to a limited extent until the summer of 1917, when Galicia was permanently abandoned by the Russian forces after the German and Austro-Hungarian counter-offensive.

The situation in Romania was different to that in Galicia because the country maintained neutrality until 1916. Romania became the site of competition between state authorities and private companies from the Entente countries and the Central Powers, who bought oil products and grain that could not be shipped by sea (in which case the goods were stockpiled to prevent the enemy from removing them) or transported them by rail to Germany, Austria-Hungary, Bulgaria, and the Ottoman Empire. In this context, oil exports dropped from 1,036,440 tons in 1913 to 440,000 tons in 1915; however, the oil stock grew to 830,000 tons in 1916, resulting in the oil production decrease from 1,810,170 tons in 1914 to 898,994 tons in 1916.[26]

The longer the war lasted, the clearer it became that, firstly, the economies of the neutral nations were inevitably subordinated to the interests of the warring powers, and, secondly, that the victory of some countries and the defeat of others would result in the redistribution of influence among international industrial and banking monopolies in the neutral states. Thus, immediately after Romania entered the war on the side of the Entente, the Romanian Commission of one of Russia's three largest organizations of entrepreneurs, the Council of Congresses of Representatives of Industry and Trade, stressed that Romania "deserved the attentions of the [Russian] trade and industrial sectors", both during the war and in the future, when Russia was anticipated to replace Germany as Romania's principal trade partner.[27]

Nevertheless, in 1916, a significant part of Romania, including its economically crucial oil-producing regions, was occupied by the Central Powers as a result of the successful Austro-German campaign. The German military administration closely monitored oil extraction in the area via the Kommando der rumänischen Ölfelder (Kodöl—Romanian Oil Field Command).[28] Across the front line, however, the Russian command and the Ministry of Industry

25 Near Kolomea and Peczenizyn (south-east of Drohobych), where financial administrator Nikolai Chamov managed to restart the operation of the oil refinery, which in mid-1917 produced up to 2,000 tons of fuel per month. RGVIA, F.2071, Op.1, D.28, L.33, Report on the construction and strengthening of the positions of the Southwestern Front, [1918].

26 Ravaş, *Iz istorii rumynskoĭ nefti*, 75.

27 Saint Petersburg, Russian State Historical Archive (RGIA), F.32, Op.1, D.563, L.48, Journal of the meeting of the Romanian Commission at the Council of Congresses of Representatives of Industry and Trade, 10 (22) September 1916.

28 David Hamlin, *Germany's Empire in the East: Germans and Romania in an Era of Globalization and Total War* (Cambridge: Cambridge University Press, 2017), 220–30.

and Commerce were designing plans to exploit the natural wealth of Romanian Moldavia (still under the control of the Entente) and part of Walachia. The resources which primarily attracted the attention of the Russian government and army were coal and oil, according to the reports submitted to General Vladimir Sakharov,[29] aide to the commander-in-chief of the Romanian Front.[30] Although the Central Powers applied their best efforts to restore oil production in Romania, the pre-war output levels were never achieved by the occupation administration.

3 Adoption of the "Scorched Earth" Tactic in 1915 in Galicia[31]

Plans to erase the oil production infrastructure in Galicia were proposed by the Russian command in May 1915 in response to the famous Gorlice offensive and the rapid onslaught of the German and Austro-Hungarian troops. The Russian army was forced to retreat from the Carpathian Mountains before withdrawing almost entirely from Galicia and Bukovina. As the troops were retiring east, the Russian commanders decided to demolish the most important industrial facilities which could be invaluable to the enemy.[32] Among other things, the headquarters, the governor-general and the commanders of the South-Western Front and the 8th Army argued about the methods and the proposed scale of the demolition as this measure would compromise the business interests of companies from Russia's allied states.[33]

The destruction of the Drohobych refinery, as well as the oil storage facilities and wells at Boryslav and Tustanowice, was delegated to the military engineer Colonel Vsevolod Zashchuk, who had at his disposal two Cossack hundreds, one militia squadron, one infantry militia platoon, and a 20-strong engineering team of the 3rd Railway Battalion.[34] The mission was nothing out of the

29 RGIA, F.37, Op.74, D.952, L.4 ff, Russian Mining Engineer's Report from Jassy to General Sakharov, 20 March (2 April) 1917.

30 Although the nominal commander was the Romanian king Carol I, the actual military command was devolved to the representative of the Russian Staff.

31 The materials of this chapter are partly used in this article: Yaroslav Golubinov, "Oil Fires of the First World War: Military Use and Destruction of Galicia's Fuel Industry," *Quaestio Rossica* 11, no. 2 (June 2023): 586–602. doi 10.15826/qr.2023.2.807

32 General Staff of the Red Army, *Gorlitskaia operatsiia: Sb. Dokumentov* [*Gorlice operation: collection of documents*] (Moscow: Voenizdat, 1941), 365–66.

33 RGVIA, F.2067, Op.1, D.564, L.20–31, Telegrams between Generals Brusilov, Ivanov, Dragomirov etc., from 28 April (11 May) 1915 till 30 June (13 July) 1915.

34 RGVIA, F.2134, Op.2, D.539, L.439, Order to Colonel Zashchuk, 28 April (11 May) 1915.

ordinary as the retreating Russian troops used to burn railway stations and bridges with the remaining fuel to hold up the advancing Austro-Hungarian units wherever possible (as was the case with Rzeszów and Jarosław).[35] In his report about the operation, Zashchuk specifically pointed out that "there were no accidents involving people" and that no harm had been caused to either the civilians or their homes because the "residents of towns and villages near the proposed destruction sites had been alerted a day before the fire by the police and 30 Cossack messengers".

In an extensive report sent on 3 (15) May 1915 to Commander of the 8th Army Alexei Brusilov, Zashchuk gave a detailed account of the tasks he had accomplished in Drohobych and Boryslav: "all the tank cars found in Drohobych were filled with mazut and oil, coupled up and dispatched to Lviv"; "components of the mechanisms and some valuable assets from the governmental oil plant were transported" to the same destination, "the stocks of oil products remaining at the governmental plant were discharged but not burned", and "all oil storage facilities in the Boryslav–Tustanowice–Drohobych area were set on fire"; in the same area, oil reservoirs and rigs whose fire could detain the movement of the troops were not torched.[36]

Zashchuk's report specifically focuses on assets of joint-stock companies since property owned by subjects of the Allied countries had become the focus of special discussions in that period.[37] He reported that the refineries controlled by private companies from Russia's ally states were "intact, apart from some of the instruments collected there for work" because "there was no need to damage them since their oil stock and sources of raw materials had all been destroyed, rendering operations impossible".

The greatest challenge for Zashchuk's unit was not so much the resistance of the local residents, who tried to prevent the incineration of oil rigs and refineries, as the physical demolition of the structures, well protected against all fire risks: the oil rigs had doors which were lined with iron sheets and nailed up; the oil reservoirs, as well as the rigs, were surrounded by fences of barbed wire and 4 m tall earth ramparts preventing the spread of fire. In addition,

35 Lajos Szádeczky-Kardoss, *Przemysltől Breszt-Litowszkig: Harcztéri Élmények És Lengyel-Magyar Történeti Emlékek* [From Przemysl to Brest-Litowsk: Experiences in the battlefield and Polish-Hungarian historical memories] (Budapest: Franklin, 1916), 14, 18.

36 RGVIA, F.13216, Op.1, D.95, L.18–190b, Military engineer Colonel Zashchuk from Lviv to the Commander in chief of the 8th Army, copy of the report, May 3 (16) 1915.

37 P. Dvorkovich, member of a British company operating in Galicia, gave extremely reserved comments on the loss of the oil production facilities, regarding this measure as a military necessity. *Neftianoe delo*, 23 June 1915, 44–45.

Zashchuk referred to "technical difficulties arising during the incineration of various facilities" because "each facility had to be set alight separately as all of them are built in strict accordance with the fire safety rules". He noted further, "The main rule is that none of the structures should catch fire from the buildings located nearby".

Zashchuk's report also contained a detailed description of the destruction methods and emphasized the complexity of the works performed and the efforts required to make simple structures like oil reservoirs unserviceable:

> Before setting a fence alight, several openings must be made to enable persons to escape to safety in different directions. When setting fire to a storage facility, the roof must be dismantled in several places to increase airflow; a group of storage containers or reservoirs must be torched simultaneously because as soon as one of the facilities catches fire, it may be dangerous and often impossible to reach the other structures in the same group.
> [...]
> To set fire to a drilling rig, we needed to open several doors in it and ventilate the interior space. All the rig doors, lined with iron sheets, were found locked and carefully boarded up. Without the ventilation, any attempt to set fire to an oil rig would have been extremely dangerous because almost every well excreted intoxicating oil gas. This gas is heavier than air and may explode upon a single strike of a match.

Zashchuk refers to cases of sabotage on the part of the civilians which he witnessed when performing attacks at the oil rigs, plants, and reservoirs; no arrests were made as Zashchuk was unable to identify the actual culprits. However, some local residents, Zashchuk claimed, did attempt to prevent the withdrawal of the Russian forces by burning the bridges:

> To avoid accidentally setting fire to the pumping station of the governmental refinery in Modrycz, where the first oil storage facility was set alight at 6 pm on 29 April [12 May], the oil from two reservoirs located near the stations was channelled via a ditch towards the storage facility which had to be set on fire. In the morning of 30 April [13 May], it was discovered that the oil had broken through the ditch during the night and was flowing through a different ditch under the bridge of the Tustanowice–Drohobych road; the oil showed no signs of burning. This could be explained by mere coincidence; however, on 30 April [13 May]

> after nightfall, Captain Lupakov[38] noticed that the oil in the ditch under the bridge had caught fire; it turned out that the flame had no contact whatsoever with the burning storage facility. The bridge burned down completely; fortunately, however, it was located away from our march route in an area where I promptly recruited a team of fifty Cossacks, who managed to extinguish the oil burning in the ditch within three hours and built a good enough bypass road with tools obtained from the local residents. There were many witnesses to the event, including Captain Lupakov; the bridge fire could be attributed to nothing but malice.

In the absence of precise information, Zashchuk was only able to provide a "guesstimate" of the destroyed assets,[39] including oil and petroleum stock and damaged oil rigs:

> To provide some idea of the size and cost of the burned oil stock, let me refer to the following figures. The oil storage facilities in Kolpiec and Modrycz had a gross capacity of 54 million puds [864 thousand tons]. The storage tanks were approximately one-third full; all of them have been burned. Many dozens of reservoirs, each holding 50,000–100,000 puds [800–1,600 tons] of petroleum products, have also been destroyed by fire. Some of the oil stored at refineries in similar reservoirs has been spilled but never burned. The small oil storage facilities at every rig have been torched. The number of rigs burned with their equipment and facilities amounts to several hundred. Many oil wells will have been destroyed by the fire as described above. A single oil well with a rig and associated equipment costs about 100–200 thousand roubles. We should add to this sum the cost of damage caused to the storage tanks and cisterns, which are also quite valuable. The inventory value of the dismantled governmental refinery reaches about 9 million roubles.
>
> The fire has destroyed many forests, pipelines, telephone lines, pumping stations, etc., causing damage amounting to hundreds of millions of roubles.

38 This officer was an observer sent by the commander of the Russian 11th Army; he stated in his report that Zashchuk had not burned all the rigs he was supposed to destroy. RGVIA, F.2134, Op.2, D.539, L.441, General Lieutenant Shishkevich's Report to the Head of 8th Army Staff, 2 (15) May 1915.

39 Relying on data most likely obtained from neutral countries, the Russian press reported that the fire affected "187 rigs out of 304 and all the equipment as well as the storage tanks and railway carriages". *Neftianoe delo*, 8 July 1915, 12.

There is no indication in the report as to the impression that the scenes of destruction he had to face made on Zashchuk himself. However, the demolition of the industrial sites was witnessed by the retreating Russian soldiers and officers (who were astounded to see the dark clouds pouring "oil rain" over Drohobych and Boryslav), as well as by the advancing 38th and 40th Honvéd Infantry Divisions. Both the Russian and the Hungarian eyewitnesses, however, mostly focused on the economic aspects of the events.

Thus, Lieutenant General Vladimir Selivachev mentioned in his diary on 12 May 1915 that he had been ordered to provide Colonel Zashchuk with two artillery pieces for destroying oil cisterns. As his brigade was leaving Drohobych on 14 May, Selivachev saw on the horizon "an enormous oil fire"; "the entire sky was covered in black; the sun was as easy to look at as a solar eclipse through smoked glass". Like many other Russian officers who witnessed the fires in Drohobych and Boryslav (among others, Ilyin,[40] Gayden,[41] Ėkk,[42] and Chekhovskiy),[43] Selivachev described the phenomenon that struck all the onlookers: "the wind brought a rain; the raindrops mixed with oil and fell on the clothes, leaving dirty stains"; at night, the countryside was illuminated by fires which raged for several days on end. "Clearly, the losses are enormous", Selivachev concluded.[44]

The Hungarian regiments approaching Boryslav noticed "large thick clouds of black sailing towards them from the north-west", which turned out to be the smoke from "106 oil wells" set on fire by the retreating Russian troops.[45] Tulics Kálmán, a member of the court martial staff of the 38th Honvéd Infantry Division, wrote in his diary on 15 May 1915 that the soldiers near Boryslav "could see

40 Iosif Il'in, *Skitaniia russkogo ofitsera: dnevnik Iosifa Il'ina* [The wanderings of a Russian Officer: The diary of Joseph Ilyin] 1914–1920 (Moscow: Knizhnitsa, Russkiĭ put', 2016), 111.

41 Dmitriĭ Geĭden, "Zapiski Grafa D.F. Geĭdena" [Memoirs of Count Gayden] (1914–1917 gg.), *Voenno-Istoricheskiĭ Vestnik* [Military-historical bulletin], no. 39 (1972), 19.

42 Ėduard Ėkk, *Ot Russko-turetskoĭ do Mirovoĭ voĭny. Vospominaniia o sluzhbe* [From Russo-Turkish to World War. Memories of service] *1868–1918* (Moscow: Kuchkovo pole; Audit nedropol'zovaniia i konsalting, 2014), 428.

43 Antoniĭ Chekhovskiĭ, "Dnevnik" [Diary], in *Pervaia mirovaia voĭna 1914–1918 gg. v dnevnikakh i vospominaniiakh ofitserov russkoĭ imperatorskoĭ armii. Sbornik dokumentov* [First World War in the diaries and reminiscences of the officers of the Russian Imperial Army. A collection of documents], ed. S.A. Kharitonov (Moscow: Politicheskaia ėntsiklopediia, 2016), 350–51.

44 Oleg Khlestov, ed., *General V.I. Selivachëv. Dnevniki. Ianvar'—avgust 1915 g.* [General V.I. Selivachev. Diaries. January-August 1915] (Moscow, 2020), 344, 348–50.

45 Elek Légrády, ed., *A volt magy. kir. pécsi 19. honvéd gyalogezred és alakulatainak* [...] *története* [History of the former 19th Hungarian Royal Pécs Infantry Regiment and its units] (Pécs: Haladás Nyomda Részvénytársaság, 1938), 170.

a huge pillar of smoke towering from under the ground in the distance, and accidental tongues of flame" and spread the news that "the retreating Russians had burned a large number of oil wells and reservoirs in the area". On the next day, the witness "travelled to the site of a huge fire ravaging the countryside", where "18 oil cisterns" were ablaze. Tulics Kálmán believed that the damage was enormous as "a single cistern contained as much oil as 40 railway tank cars".[46] Later, however, the Hungarian forces in Drohobych were able to use the remaining kerosene, which they poured as a disinfectant into the brooks and wells believed by physicians to contain cholera bacilli.[47]

Two months later, the Polish press reported with reference to an eyewitness account: "the fire was so strong that the countryside turned black across a wide area", and "even in Lviv, the trees and shrubs were covered in black soot".[48] The clouds that poured "oil rain" reached Zolochiv (Złoczów), 60 km east of Lviv, sparking a panic among the local residents.[49]

There was no consensus, either during the war or in the interbellum period, as to the actual amount of damage caused by the fire. The data disparity arose from differences in the calculation methods. Zashchuk's report was questioned by Alexander Ostrogradsky, who stated that the actual oil stock left in Kolpiec and Modrycz had totalled only a third of the amount specified by Zashchuk (i.e. about 131,000 tons of crude oil and 33,000 tons of mazut) and that only 178 out of 1,400 oil rigs (i.e. about 13 per cent) had been burned.[50] Polish historian Tomasz Kargol estimated that, apart from several destroyed oil refineries in West Galicia, "Tustanowice county, where 178 rigs had been burned, suffered the most serious damage". In Boryslav, 256 out of 450 wells were burned down; 80 of them were restored. The losses to the oil sector amounted to *c.*60–100 million crowns. "The losses were both direct (damaged wells and burned stocks of crude oil) and indirect (decline in production)".[51] These estimates

46 Kálmán Sebestyén, "A Kolozsvári 38. honvéd gyalogoshadosztály Galíciában" [The 38th Infantry Division in Galicia], *Honismeret*, no. 6 (December 2014): 30.

47 Sándor Szurmay, *A magyar katona a Kárpátokban* [The Hungarian soldier in the Carpathians] (Budapest: Királyi Magyar Egyetemi Nyomda, 1940) 26–27.

48 "Szkody z inwazyi rosyjskiej w Drohobyczu" [Damage from the Russian invasion in Drohobych], *Nowa Reforma* (*wydanie popołudniowe*) [*New Reform* (*afternoon edition*)] July 7, 1915, 2.

49 Wincenty Pawłowski, "Borysław—Stolica Polskiego Zagłębia Naftowego (do 1939 r.) Cz. II" [Boryslav—Capital of the Polish Petroleum Basin (until 1939) Part II], *Biuletyn Stowarzyszenia Przyjaciół Ziemi Drohobyckiej* [Bulletin of the Association of Friends of the Drohobych Area], 2017, 48.

50 Ostrogradskiĭ, *Otchet predstavitelia*, 10.

51 Tomasz Kargol, *Odbudowa Galicji Ze Zniszczeń Wojennych w Latach 1914–1918* [Reconstruction of Galicia from War Destruction in 1914–1918] (Kraków: Historia Iagellonica Press Association, 2012), 40–41.

are consistent with the information provided by Ostrogradsky: "130 million crowns, or 52 million roubles"; it appears that Zashchuk had significantly over-estimated the impact of his scorched earth tactic when assessing the damage at hundreds of millions of roubles.[52] The data collected by the Austro-Hungarian administration contained evidence of 229 burned oil rigs and the destruction of all fire-fighting equipment; in Tustanowice, 42 out of 79 oil wells were affected; the wells in Boryslav had remained intact.[53] More recent Polish estimates have suggested that 182 wells were destroyed, "some of which were still under construction and others operational".[54]

The Drohobych refinery and the oil rigs in Boryslav, as well as the other regions, were restored comparatively fast.[55] At the end of May 1915, following the Russian retreat, the state-controlled Drohobych refinery and the private refineries "Galicia" and "Polmin" undertook preparatory works and were able to restart operations.[56] In summer 1915, the first major supplies of crude oil became available although the pre-war output levels could not be achieved in the period 1916–18.[57]

The impact of the fire, oil spills and the "oil rain" for the environment and the local residents remains an open question as the damage was never assessed after the operation. Apparently, "the oil spilled from the storage facilities and never set on fire caused serious environmental problems, removing once fertile lands from agricultural use";[58] however, the real extent of the affected territory cannot be objectively estimated now. That said, the events of the First World War were hardly the first environmental disaster to strike Boryslav and the other regions described here; nor were they the last.[59]

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52 Ostrogradskiĭ, *Otchet predstavitelia*, 10.

53 Frank, *Oil Empire*, 188.

54 Lavskiĭ, Pol'skaia neftianaia promyshlennost' [Polish oil industry], 269.

55 Bohdan Lazorak, Beata Skwarek, and Tatiana Lazorak, *Drohobycz i ziemia drohobycka w latach 1914–1919: studia z dziejów miasta i regionu = Drohobych i drohobyts'ka zemlia u 1914 –1919 rr.: Doslidzhennia istoriï mista ta rehionu* [Drohobych and the Drohobych region 1914–1919: studies in the history of the city and region] (Warsaw: Wydawnictwo AEH, 2022), 282–84.

56 Kargol, *Odbudowa Galicji*, 248.

57 Stefan Bartoszewicz, *Wspomnienia z przemysłu naftowego 1897–1930* [Memories of the oil industry 1897–1930] (Lwów: Piller-Neumann, 1934), 45.

58 Ihor Il'nyts'kyĭ, "Naftopererobna promyslovist' Halychyny v umovakh pershoï rosiĭs'koï okupatsiï kraIu (veresen' 1914 r.–cherven' 1915 r.)" [Oil refining industry of Galicia under the first Russian occupation of the region (September 1914–May 1915)], in *Problemy istoriï Ukraïny XIX—pochatku XX st. : zb. nauk. pr.* [Problems of the history of Ukraine XIX–early XX], vol. 23, ed. Oleksandr Reĩent (Kyiv: Instytut istoriï Ukraïny NAN Ukraïny, 2014), 302.

59 Myron TSaĭtler, "Ekolohichni naslidky dovhotryvaloho naftovydobutku na boryslavs'komu naftovomu rodovyshchi" [Ecological problems of dovhotryval oil production on

4 The Entente and the Destruction of Oil Stocks in Romania

The next attacks on the oil production and storage infrastructure occurred during the 1916 Romanian campaign. After a brief period of military successes in Transylvania in August–September 1916, the Romanian troops had to face the numerically superior forces of the Central Powers, which launched a counter-offensive in Romania later in the autumn.[60] The Russian army could not prevent the front from collapsing, and the battered Romanian forces had to retreat to Romanian Moldavia.

Both sides of the conflict were interested in taking control of Romania as an important source of oil and grain. However, the victories of the Central Powers made it clear that the Entente had to organize urgent removal of oil and grain stocks or destroy them lest they should fall into enemy hands.

After the German forces captured Constanța in late October 1916, the Russian Black Sea Fleet was ordered to set alight the large quantities of oil products stored in the city.[61] It is interesting that the Russians were unable to provide any accurate estimates of the amount of oil destroyed. In one of his reports, Admiral Alexander Kolchak, commander of the Black Sea Fleet, referred to 28,000 tons of petrol and an equal amount of kerosene; however, Soviet historians, who appraised the total oil storage capacity at 1 million tons, argued that the fuel losses had reached 120,000–500,000 tons.[62]

Nevertheless, the first calculations made by the German occupational administration before the arrival of the Russian fleet produced the following results: 133,000 tons of petrol, 55,000 tons of oil, 27,800 tons of furnace mazut, 21,390 tons of diesel fuel, 1,150 tons of engine oil, and 150 barrels of engine oil (175 kg per barrel). Quite surprisingly, the second inspection, conducted in April 1917, revealed that the storage tanks had contained just 118,214 tons of light and heavy petrol, 63 tons of oil, 10,198 tons of diesel fuel, 32,763 tons of furnace mazut, 149 tons of engine oil, and 16 tons of naphthalene.[63]

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boryslavs'komu oil and gas fields], *Pratsi NTSh* (*Ekolohichni problemy L'vivshchyny*) [Ecological problems of L'viv region], no. 7 (2001): 84–90.

60 Glenn E. Torrey, *The Romanian Battlefront in World War I*, Modern War Studies (Lawrence, KS: University Press of Kansas, 2011), 91–169.

61 Denis Kozlov, *Flot v Rumynskoĭ Kampanii, 1916–1917 godov* [Fleet in the Romanian campaign of 1916–1917] (Saint Petersburg: Izdatel' M.A. Leonov, 2003), 54.

62 Kozlov, *Flot v Rumynskoĭ Kampanii,* 53.

63 Valentin Ciorbea, "Dobrogea between 1916 and 1918 in German Historical Sources", *Annals of the Academy of Romanian Scientists. Series on History and Archaeology Sciences* 9, no. 2 (2017): 87.

According to the German administration, the Russian naval attack on 4 November 1916 resulted in the loss of 16,300 tons of oil, benzene, and diesel fuel; seven storage facilities were destroyed and five damaged.[64] According to Hermann Lorey, the remaining petroleum was preserved by closing the filling valves (which may have been deliberately opened by the Romanians before surrendering Constanța) and constructing tank dikes.[65] On the other hand, Kolchak reported that "the explosions … could be heard in several front-line areas 100 *versts* [just over 100 km] away from Constanța"; other sources indicated that the fire which had started after the shelling, and raged for nine days after, could be seen 70 miles away.[66] On 20 November and 3 December 1916, the Russian ships launched another series of raids on Constanța in response to repeated requests by the Allies to destroy fuel stocks captured by the Germans (although Kolchak believed that the fuel had already been destroyed).[67] However, the bombardment of oil tanks did not spark fires, and the naval command reported to the headquarters that the reservoirs were already empty.[68]

Despite the relative success of the Russian fleet in Constanța, the defence of oil fields and oil processing facilities in Dâmbovița, Prahova, and Buzău counties remained a major problem. In view of the fast advance of the Central Powers' troops, in early November the British high command introduced a plan to destroy the oil and grain stocks to prevent the enemy from getting their hands on them.[69] Apparently, the initial proposal involved the transportation of the stocks to Romanian Moldavia (the French general Henri Mathias Berthelot discussed this scheme with the British military attaché Colonel Thomson on 11 November 1916).[70] However, within a week the Russian Ministry of Foreign Affairs at the request of the British embassy informed the headquarters that "in case of military threat, it is desirable that they should be destroyed; the associated losses would be borne by Russia, England, and France".[71]

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64 Ciorbea, "Dobrogea between 1916 and 1918", 88.

65 Hermann Lorey, *Operatsii germano-turetskikh sil 1914–1918 gg.* [Operations of German-Turkish forces in 1914-1918] (Saint Petersburg: Poligon, 2004), 386. German original: *Der Krieg in den türkischen Gewässern. Erster Band. Die Mittelmeerdivision* (Berlin: Mittler, 1928).

66 Kozlov, *Flot v Rumynskoĭ Kampanii*, 64.

67 RGVIA, F.2003, Op.1, D.421, L.318, Telegram from the Commander in chief of the Russian Black Sea Fleet to the Russian Supreme Headquarter, 19 November (2 December) 1916.

68 Kozlov, *Flot v Rumynskoĭ Kampanii*, 67.

69 Lord Hankey, *The Supreme Command, 1914–1918*, vol. 2 (London: Routledge, 2014), 535.

70 Glenn E. Torrey, ed., *General Henri Berthelot and Romania: mémoires et correspondance, 1916–1919* (Boulder: East European Monographs, 1987), 18.

71 RGVIA, F.2003, Op.1, D.421, L.1, Minister of Foreign Affairs of Russia Boris Shturmer's Letter to General Alekseev, 5 (18) November 1916.

A telegram sent on 22 November 1916 by General Mikhail Belyaev, Russian representative at the Romanian high command, stressed that the Romanian government was resolutely opposed to both the removal and the destruction of oil and grain stocks since the former would expose peasants in the occupied parts of the country to heavier exploitation by the Germans, while the latter would be tantamount to the annihilation of Ploiești by fire.[72] Although an unnamed "English expert"[73] did propose less radical alternatives, such as destroying the oil stocks in the 30 km belt along the railway lines or constructing "large shallow pools where oil could be poured and burned", these plans never materialized.[74] However, even this scheme suggested that the mission targeting the oil infrastructure in Romania was far more extensive than the similar operation in Galicia as it was supposed to affect a much vaster area. Nevertheless, the telegram sent to Belyaev from London on 30 November 1916 rejected the objections put forward by the Romanian government: Lieutenant General Robertson, chief of the Imperial General Staff, stated categorically that Romania's lack of determination in enforcing the preparatory measures was in complete contradiction to the interests of the Allies.[75] The fate of Romania's oil fields and oil plants was sealed.

According to Berthelot, the British colonel Thomson started consultations with company representatives on plans to destroy the oil wells as early as 17 November; on 24 November, the French lieutenant Philippon,[76] a member of the French–Romanian oil field destruction commission, joined the discussion. In Târgoviște, the commission was joined by Lieutenant Colonel John Norton-Griffiths, who had arrived in Romania a week earlier.[77] As soon

72 RGVIA, F.2003, Op.1, D.421, L.46–48, Telegram from General Beliaev to the Russian Supreme Headquarter, 9 (22) November 1916.

73 Several local commissions were established to decide on the necessary measures and evaluate the potential damage to oil wells; the commissions included British engineers and managers among their members. See "Account of the Destruction of the Company's Oil Wells, Machinery Etc. in Roumania in November 1916 to Prevent Them from Falling into Enemy Hands. Compiled by the Company from Statements of Engineers Returning from Roumania" (Booklet, London, 1917), 12–14, CLC/B/178/MS23591, The London Metropolitan Archives (LMA).

74 RGVIA, F.2003, Op.1, D.421, L.49, Telegram from General Beliaev to the Russian Supreme Headquarter, 9 (22) November 1916.

75 RGVIA, F.2003, Op.1, D.421, L.242, Telegram to General Beliaev with Translation of the General Robertson's telegram to the Romanian Government, [no date].

76 Torrey, *General Henri Berthelot and Romania*, 19, 21. Some other sources spell his surname as Filip(p)on.

77 Tony Bridgland and Anne Morgan, *Tunnel-Master and Arsonist of the Great War: The Norton-Griffiths Story* (Oxford: Casemate Publishers, 2003), chap. 17, Google Books, https://books.google.ru/books?id=nbXNDwAAQBAJ.

as the commission passed a formal decision to ruin the oil wells, reservoirs, and plants, this British officer, justly described by a historian as "an imperial adventurer",[78] immediately set out to implement this plan, having recruited British, French, and Romanian civilians and servicemen for his mission.[79]

Norton-Griffiths's reports about the destruction of oil stocks,[80] machines, and grain in storage facilities[81] have been widely cited in published sources, and the operation near the Prahova was subsequently described as an important element of the defensive campaign launched by the retreating Romanian army.[82] The reports suggest that between 26 November and 13 December, Norton-Griffiths's unit swept through 15 towns and villages of three *judeţe* and destroyed 812,840 tons of oil products; however, Norton-Griffiths's evaluations of the amount of damage caused were not always completely reliable. Apparently, about 1 million tons of oil, kerosene, and other substances were burnt, discharged into the ground and waters, or dumped into oil wells. To compare, in 1991 the Gulf War resulted in the loss of about 150 million tons (1.12 billion barrels) of crude oil; another 1.5 million tons were spilled into the Gulf.[83]

Norton-Griffiths stated that the destruction followed an established procedure outlined below (a brief version of his report has also survived in the Russian archives):[84]

(a) All wells were plugged by dropping down pieces of metal, chain, bailers, stones etc. All machinery at the well head was destroyed or removed, and in some cases thousands of tons of benzene was pumped down individual wells.

(b) All the machinery in the refineries and rectifying buildings was broken with sledgehammers.

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78 David Miller, "The 2nd Regiment, King Edward's Horse, 1914–17", *Journal of the Society for Army Historical Research* 83, no. 333 (2005), 1.

79 John Norton-Griffiths, "Report on the Destruction of Roumanian Oilfields" (Memorandum, January 22, 1917), 3, CAB 24/6/25, The National Archives, Kew. Available online: https://discovery.nationalarchives.gov.uk/details/r/D7638605.

80 Norton-Griffiths, "Report on the Destruction of Roumanian Oilfields".

81 John Norton-Griffiths, "Report on the Destruction of Grain and Machinery in Roumania" (Memorandum, January 27, 1917), CAB 24/7/40, The National Archives, Kew. Available online: https://discovery.nationalarchives.gov.uk/details/r/D7638721.

82 Constantin Kiriţescu, *Istoria războiului pentru întregirea României: 1916–1919* [History of the War for the Unification of Romania], Ed. a III-a, vol. 1 (București: Editura Științifică și Enciclopedică, 1989), p. 520; Torrey, *The Romanian Battlefront in World War I,* 151–53.

83 Muhammad Sadiq and John C. McCain, eds., *The Gulf War Aftermath*, Environment & Assessment 4 (Dordrecht: Kluwer Academic Publishers, 1993), 5, 84.

84 RGVIA, F.2003, Op.1, D.1475, L.32, "Abridged Report of the Work Done by the Destruction Commission in the Roumanian Oilfields", [no date].

(c) The buildings were then rendered watertight up to 2 feet from the ground by earth banks at the doors and openings.
(d) Containment banks were repaired or, if non-existent, built round the oil storage reservoirs.

When it was decided to commence destruction:

1. All taps of the reservoirs were opened and allowed to run until a large expanse was under oil.
2. The buildings, engine rooms, etc. were flooded with oil about a foot deep. This usually took about two to three hours. At the last minute, lit torches were thrown into the reservoirs and buildings, and the whole place was at once set ablaze. After a few minutes the tanks exploded and in an hour the flames were 1,000 feet high.

It is hardly surprising that during a lawsuit initiated by Roumanian Consolidated Oilfields Ltd. to seek compensation for the lost oil and other assets, one of the witnesses stated:

> Lieutenant-Colonel Norton-Griffiths was known to the Rumanians as the "Devil of Destruction". At one place, he walked about all day carrying a sledgehammer, ready to destroy anything that might have been overlooked. He absolutely refused to leave a place until he saw everything was destroyed beyond recovery, and the result was complete and total destruction.[85]

The result was indeed impressive. After the war, Major Mircescu of Romanian Infantry Regiment 14/72 remembered that

> All oil processing plants around Ploiești and the wells in the Prahova [River] valley were set on fire; the sky was covered with a dense cloud of black smoke which even blocked the sunlight. Now and again the air was shattered by powerful explosions. It was even more terrifying than the Sodom and Gomorrah of the Old Testament.[86]

The German officer Hermann Balck later remembered how he "marched through the burning oil fields at Ploiești" with his comrades from the 10th Jäger

85 Roumanian Consolidated Oilfields, Ltd. V. the Crown, 2 Ll.L.Rep. 622 (Com Ct 1920). https://www.i-law.com/ilaw/doc/view.htm?id=135055.

86 Radu R. Rosetti, *Partea luată de regimentul 47/42 infanterie în războiul pentru întregirea neamului 1/14 august 1914–1/14 iulie 1918* [Part taken by the 47/42nd Infantry Regiment in the War for the Reunification of the Nation 1/14 August 1914–1/14 July 1918] (Bucharest: Institutul de Arte Grafice Răsăritul, 1923), 42.

Bataillon, who remembered this day as 'The March of the Moors', "because "everything was black with soot".[87]

A no less spectacular view was described by a staff member of Standard Oil Company (USA), who was working in Ploiești at the time:

> The whole district, looking like an ocean of fire, especially Ploiești, was wonderful. In every moment you could hear the bum-bums of the tanks, boiler houses, etc., exploding. Hundreds of meters in height was the smoke.

During the fire, the abandoned offices and private homes of Romanian residents and foreign nationals were often looted. The Americans even had to request the German military to organize protection of the surviving assets.[88]

Certainly, it would have been impossible to wreak this amount of damage in a vast territory (at least 1,000 km^2) single-handedly. Norton-Griffiths relied on the assistance of several British officers (including Major Scale, who had arrived specially from the British mission in Petrograd) and their French counterparts, as well as representatives of the Romanian army. Wherever possible, Norton-Griffiths persuaded or threatened oil company engineers and workers into destroying their production facilities. This strategy resulted in at least one serious legal dispute as Norton-Griffiths casually brushed away any questions regarding financial compensation for the damaged structures and equipment and destroyed oil stocks by claiming "the Allies will pay".[89] In other cases, he was helped by retreating Romanian forces and a specifically appointed military team.[90] The latter was particularly useful when the local administration attempted to prevent the destruction and to arrest Norton-Griffiths or his subalterns.

Norton-Griffiths also used his authority to recruit British civil engineers who were working in Romania and had the relevant professional skills. Later,

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87 Hermann Balck, *Order in Chaos: The Memoirs of General of Panzer Troops Hermann Balck* (Lexington: University Press of Kentucky, 2015), chap. 3, Google Books, https://books.google.ru/books?id=Ja2kCAAAQBAJ.

88 George Sweet Gibb and Evelyn H. Knowlton, *History of Standard Oil Company* (*New Jersey*)*: The Resurgent Years, 1911–1927* (New York: Harper and Brothers, 1955), 234–35.

89 "Account of the Destruction of the Company's Oil Wells, Machinery Etc. in Roumania in Nov and Dec 1916 to Prevent Them Falling into Enemy Hands, and a Report of the Company's Claim for Compensation Made to the British Government in Aug 1917. Printed for the Information of the Company's Shareholders" (Booklet, London, 1917), 22–28, CLC/B/178/MS23592, The London Metropolitan Archives (LMA).

90 Dimitri D. Dimancescu, *Uncharted Journey: Memoirs of Dimitri D. Dimancescu* (Cambridge, MA: BTF, 2016), 49.

many of them continued their service in the Romanian oil business; years later, they nearly performed a mission identical to their 1916 Ploiești assignment at the beginning of the Second World War.[91]

The Russian high command also doubted whether Romania would attempt radical measures like the destruction of railways, bridges, viaducts, and, most importantly, oil, as can be seen from a telegram sent on 30 November to the Commander of the South-Western Front by Pustovoytenko, Quartermaster-General of the Commander-in-Chief Staff.[92] On 4 December, Mikhail Shiskevich, chief of staff of the Danube Army, who may not have been aware of the operations performed by Norton-Griffiths's unit, reported to the headquarters of the South-Western Front about plans to send a demolition officer of the 15th Pontoon Battalion to Ploiești along with a group of soldiers, as well as to form a special unit from the engineer team of the 3rd Cavalry Division.[93] However, the Russian army failed to reach Ploiești. Nevertheless, Norton-Griffiths collaborated with Russian military units in Romanian Moldavia on his destruction missions to factories and grain storage facilities and recommended several Russian commanders for awards;[94] he also used the assistance of the British Royal Naval Armoured Car Division (RNACD). Later, RNACD officers reported that "dynamos, lathes, boilers, engines, etc." had been destroyed at the Galați plant; some remembered performing their destruction assignments "under shotgun fire from Romanian farmers".[95]

Romanian historians point out that the number of wells damaged in Prahova, Dâmbovița, and Buzău counties exceeded 1,500; another 1,000 were set on fire (a total of 830,000 tons of oil products were burned).[96] In addition, reservoirs with a total capacity exceeding 150,000 m^3 were exploded and several dozen oil processing plants were annihilated. After long negotiations, the total cost of damage suffered by Romania at the insistence of Britain and France was estimated at about £10 million; private companies assessed their losses at an

91 Dennis Deletant, *British Clandestine Activities in Romania during the Second World War* (London: Palgrave Macmillan UK, 2016), XVI, 198.

92 RGVIA, F.2003, Op.1, D.421, L.291 Telegram from the Quartermaster General of the Russian Supreme Headquarter to the South Western Front Headquarter, 17 (30) November 1916; RGVIA, F.2067, Op.1, D.3629, L.366, Telegram from the Commander in chief of the Russian Danube Army, 23 November (6 December) 1916.

93 RGVIA, F.2067, Op.1, D.3629, L.328, Telegram from General Lieutenant Shishkevich, 21 November (4 December) 1916.

94 RGVIA, F.2003, Op.1, D.1475, L.27, Translated Norton-Griffiths's Report with list of the Russian Officers, [no date].

95 Charlotte Alston, "Encounters on the Eastern Front: The Royal Naval Armoured Car Division in Russia 1915–1920", *War in History* 25, no. 4 (2018): 497.

96 Gheorghe Buzatu, *O istorie a petrolului românesc*, 39.

additional £6.7 million.[97] The disputes between the three states regarding the compensation of war losses continued until the late 1920s.[98] The Romanian historian Gheorghe Calcan has emphasized that the events of 1916 triggered a serious crisis in the oil industry and that World War I marked a period of quantitative, qualitative, and technological regression, which impacted its development in the subsequent period.[99]

It is interesting that the damage has been evaluated by contemporaries and modern analysts only in economic terms although the environmental impact of the disaster is comparable with the events of the 1991 Gulf War. The local residents, however, showed great adaptability to the deteriorating environmental conditions. Both before and after World War I, oil rigs and oil processing plants, with their large leakage-prone reservoirs, provided livelihoods for rural and urban residents, who collected the spilled oil and sold it as fuel to minor industrial businesses at dumping prices.[100] The business gained particular popularity after 1916 when considerable quantities of oil were drained from reservoirs, not burned as planned initially. The oil leaked into the water bodies, including the Dâmbu River (in the Danube basin) near the village of Țintea (15 km from Ploiești), which had been visited by Norton-Griffiths's unit. Newspapers reported as late as 1924 that the residents of "the little village of Mimiu stretching along the Astra Romana loading rack" used "old water wells to collect oil" or dug "special pits in their gardens" for the same purpose.[101]

5 Outcomes of the Oil Destruction Missions

What are the similarities between the engineering missions in Galicia and Romania, and what makes them different? Both operations were hastily planned during an onslaught of greater forces of the Central Powers. However, the British unit in Romania had slightly more time to incinerate, blow up, and

97 Gheorghe Calcan, "La destruction de l'industrie pétrolière roumaine pendant la Première Guerre mondiale", in *Le pétrole et la guerre /oil and war*, ed. Alain Beltran, Enjeux internationaux / International issues, no. 21 (Brussels; New York: P. I.E. Peter Lang, 2012), 30, 31.

98 "Neftianaia promyshlennost' za granitseĭ" [Oil industry abroad], *Neftianoe khoziaĭstvo* 12, no. 2 (1927): 299.

99 Calcan, "La destruction de l'industrie pétrolière roumaine pendant la Première Guerre mondiale", 35–36.

100 "Neftianaia promyshlennost' za granitseĭ" [Oil industry abroad], *Neftianoe khoziaĭstvo* 6, no. 3 (1924): 542.

101 "Neftianaia promyshlennost' za granitseĭ" [Oil industry abroad], *Neftianoe khoziaĭstvo* 6, no. 3 (1924): 541.

spoil the industrial equipment and F&L stocks. Furthermore, Norton-Griffiths was more adventurous in character and led his people by example. His raids came close to guerrilla warfare in terms of both the concept and implementation: to achieve his goals, the colonel recruited anyone available. In contrast, Zashchuk was little more than a diligent performer of the assignment offered to him, who used the resources provided by his commanders. Additionally, the 1916 British operation was carried out with little regard for the consequences to be faced by oil companies. The Russian forces, however, acted partly in the interests of the oil businesses and did not plan to destroy the whole oil stock in the surrendered territories which had already been declared part of Russia, intending to return after a counter-offensive. Moreover, remembering the experience of the 1914 and early 1915 campaigns, the Russian command hoped to carry on with the mobile warfare, anticipating that the front line could be moved.

Zashchuk and Norton-Griffiths used similar methods: in both operations, the oil reservoirs were emptied and the stocks burnt; the equipment was disabled; and scrap metal was thrown into the wells to block them. In addition, both the Russian and British armies destroyed pipelines, pumps, and telegraph and telephone lines, as well as the infrastructure of the industrial regions in general. It appears that the military were more concerned with preventing risk to life for the service personnel and civilians than with the impact their actions would have on the environment. However, in his instruction addressed to Major Scale, Norton-Griffiths specifically reminded the latter to take measures against the discharge of oil into the Doftana and Prahova Rivers once the oil reservoirs and cisterns had been emptied; the spilled oil had to be burned.[102]

The discussion regarding the effect of the 1915 and 1916 operations on oil production started soon after the attacks. It is noteworthy that the Allies tended to overestimate the severity of the damage caused to the oil industries, while the Central Powers, in turn, were inclined to underestimate it. Alternative estimates were presented by the civilian services, as was the case with Zashchuk, whose report was questioned by the Ostrogradsky's memorandum for the Ministry of Industry and Commerce; in the post-war period, damage estimates also came from the affected oil companies, which demanded adequate compensation for their property losses: thus, Norton-Griffiths appeared in court as a witness when Roumanian Consolidated Oilfields Ltd. sued the British government. Overall, both Zashchuk and Norton-Griffiths appear to have seriously

102 Iurii Totrov, *Angliĭskaia razvedka v Rossii* [British intelligence in Russia] (Moscow: Nestor-Istoriia, 2023), 116–17.

incapacitated the enemy, given that oil extraction and processing output in Galicia and Romania sank compared to pre-war levels.

It may be concluded that these operations demonstrate the changes in the nature of warfare that occurred during World War I. Firstly, combat space (or "terrain", to use Christoph Nübel's term)[103] came to incorporate all natural and human-made features of the environment, irrespective of the actual part they played in the conflict; their civilian or military status was no longer seen as relevant.

Secondly, the new understanding of how features of combat space can be involved in the war shaped the perception of these features by the conflicting parties: any assets, including oil, were now regarded as something that could—and should—be used for military purposes irrespective of their customary functions (an idea first articulated by Kurt Lewin in his essay on combat landscapes).[104] The peacetime logic according to which "assets must not be damaged because they may prove useful in the future" was rejected in favour of the logic of war: "whatever can be destroyed now to disadvantage the enemy must be destroyed now". In February 1917, long before World War II, Alexander Lukomsky, Quartermaster-General of the Russian Supreme Headquarters, suggested launching air strikes on the Romanian oil-bearing regions after plans to resume mining activities had been published by German newspapers.[105] A similar proposal came from General Maurice Janin, the French representative at the Russian Headquarters. Janin presented a letter by a Swiss engineer, who suggested bombing the British-owned pipeline network near Tustanowice and Boryslav.[106]

Thirdly, causing damage to the adversary automatically came to mean the destruction of the natural environment: for example, smoke from the oil fires affected people's health, as did the lasting contamination of soil and water with petroleum products; this confirms that warfare indeed became totalized. Totalization in this case was not so much about the involvement of the entire society of the combatant state in the warfare; rather, it should be construed as

103 Christoph Nübel, "Warscapes: Managing Space on the Western Front, 1914–1918", in *Past Societies: Human Development in Landscapes*, ed. Johannes Müller and Andrea Ricci (Leiden: Sidestone Press, 2020), 181–90.

104 Kurt Lewin, "The Landscape of War", Translated by Jonathan Blower, *Art In Translation* 1, no. 2 (2009), 199–209, doi: 10.2752/175613109X462672.

105 RGVIA, F.2003, Op.1, D.1149, L.146ob, Telegram from the Quartermaster General of the Russian Supreme Headquarter to the Romanian Front Headquarter, 23 February (8 March) 1917.

106 RGVIA, F.2003, Op.1, D.1208, L.88, Translated copy of the General Janin's letter to the Quartermaster General of the Russian Supreme Headquarter, 11 (24) November 1916.

the pervasive involvement of the environment, whose resources were unreservedly mobilized and weaponized for battle.

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PART 2

Environment and Public Health

CHAPTER 5

Animal Fighters, Animal Victims: the Animal Dimension on the Russian-Austrian Front of the First World War

Oksana Nagornaia

The military actions of World War I in a short time covered all climatic zones and landscape types (mountains, steppes, seas, forests), transforming nature into anthropogenic spaces and threatening biodiversity. Animals not only suffered artillery shelling and the loss of their habitats (a vivid example is the bison of the Belovezhskaya Pushcha) but were mobilized on the fronts and in the front areas for use by different types of troops.[1] Human-animal interaction in a militarized environment directly conditioned behavioural practices of combatants and civilians, as well as enduring anthropological constructions of landscapes and their inhabitants, including humans themselves. The situation of mobilized animals in Eastern Europe, where front lines extended over vast areas and military operations were manoeuvre-like, differed greatly from the situation on the Western Front. Cavalry on the Eastern Front retained its unchanged importance for an extended period of time; however, toward the end of the war (especially in the Austrian army), the prospect of abandoning animal traction in favour of mechanical equivalents was discussed in light of the catastrophic shortage of forage. The high mortality rate of horses and the peculiarities of the terrain led to discussions about their replacement by dogs as a suitable equivalent to traction power. The epidemiological discussions of all fighting armies were characterized by the stereotyped perception of the environment in the combat zone, including its domesticated inhabitants, as an object of increased epidemiological danger and special measures to combat it. In the Russian army, the sociocultural gap between the majority of illiterate soldiers and the minority of educated officers led to different attitudes toward animals, with the first group viewing them as a traditional resource and the second as part of an anthropomorphized and highly stylized nature, evoking feelings of affection and grief. Despite the lack of horses in the

1 The research for this chapter was funded by the Russian Foundation for Basic Research (RFBR) within the framework of research project № 21–59-14003 "Great War and the Anthropocene: 'Imperial Debris' and Environmental Change in Central-Eastern Europe".

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Austrian army, horse meat was used as food during supply crises (e.g. during the siege of Przemyśl), leading to very ambivalent reactions among soldiers and officers. In addition to the emotional forms of the human-animal relationship in war reflected in written sources, practices of visualizing this relationship are of particular interest. Photographic subjects range from parade shots of dog and cavalry units, to the hard, gruelling work of mobilized animals, to the capture of unfavourable images of violent mass deaths and mourning for individual animals.

The example of the Austro-Russian front and the hitherto little researched materials from Russian and Austrian archives allow the presentation of the First World War as an important turning point in the relationship between man and the animal world he militarized, as well as in the discussions about the need to replace animals, especially horses, with more controlled and epidemiologically safe machines. In addition to documents from the front and rear divisions of the Russian army and the Austrian formations, the paper uses images and first-person documents to reconstruct the range of discourses and institutions, behavioural practices, and processes of (limited) anthropomorphization of animals in war. Territorially, the study focuses on the Russian-occupied regions of Galicia and Bukovina recaptured by the Austrian army; however, given the lack of a massive corpus of primary sources, this research perspective might be applicable to other parts of the front line.

1 Animal History or Animate History: Discussions about Animals in History

Undoubtedly, animals were and are an integral part of military historiography, but for a long time they were on the margins of research interest. The veterinary prism of war research was used to test the theses about the efficiency of the organization of a given army, its mobility, and the veterinary and epidemiological situation on the fronts.[2] The history of animals as a part of environmental history and especially as an independent field of research has emerged only recently—a significant number of publications were published at the beginning of the 21st century. At the same time, debate continues unabated

2 Anne-Kathrin Wese, "Die Tierseuche als militärisches Problem Zur Bedeutung des Rotzes im Ersten Weltkrieg am Beispiel der 11. Bayerischen Infanterie-Division, in *Tiere im Krieg: von der Antike bis zur Gegenwart*, ed. Rainer Pöppinghege (Paderborn: Schöningh, 2009), 119–33; Maksim Os'kin, "Veterinarnoe obespechenie russkoj armii v period Pervoj mirovoj vojny", *Gumanitarnye nauki v Sibiri* 25, 4 (2018): 83–88.

about the conceptual underpinnings and, more generally, the heuristic productivity of this approach. The Achilles' heel of animal history is the source base, which naturally lacks evidence from the animals themselves in the status of active subjects. Nevertheless, the methodological tools of (post)colonial studies, which give voice to "silent" communities, have gained influence in this field as well. This change is reflected in the increasing number of publications, the institutionalization of the field in journals, and the change in the semantics of the scientific and everyday vocabulary, which has recently included the categories of the animal turn, animal history, animate history, companion animals, and non-human animals.[3]

With regard to the research question, for a long time, the image of animals and their significance in the identity structures of social and national groups in the sense of the history of representation and ideas were at the centre of research interest.[4] Gradually, however, the research focus has shifted to questions about the subjectivity of animals, the connection between loyalty and agency in behavioural practices, and their perception by humans. In general, authors share the view of the direct and indirect influence of animals on human life-worlds and agency spaces.

Most researchers emphasize that World War I helped blur the understanding of humans as rational, social animals distinct from their natural counterparts. The war also changed the principles of animal representation in the products of human culture.[5] As Dorothee Brantz has written, even during World War I, animals became a clear illustration of the loss of illusions about the civilizational character of human society:

> The fact that World War I was compared to a slaughterhouse was not just rhetorical; rather, it demonstrated that the distruction of animals and of people did not necessarily stand in opposition to one another but was part of an ongoing process that linked societal progress to the exploration of humans and animals—a process that would, in many ways, characterize the twentieth century.[6]

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3 Gesine Krüger, Aline Steinbrecher, and Clemens Wischerman, "Animate History: Zugänge und Konzepte einer Geschichte zwischen Menschen und Tieren", in *Tiere und Geschichte: Konturen einer Animate History*, ed. Gesine Krüger, Aline Steinbrecher, and Clemens Wischerman (Stuttgart: Franz Stein Verlag, 2014), 9–34.

4 Krüger, Steinbrecher, and Wischerman, "Animate History".

5 Ibid.

6 Dorothee Brantz, "The Domestication of Empire: Human-animal Relations at the Intersection of Civilization, Evolution, and Acclimatization in the Nineteenth Century", in *A Cultural*

Some scholars conclude that the radical change in emotional regimes and the experience of military violence during World War I led to a sensitization of attitudes toward animals against a background of the dehumanization of behaviour.[7] At the same time, as Rainer Pöppinghege points out, the animal continues to be an important projection of human emotions, but has not yet achieved the status of an equal partner.[8]

2 Animals in Military Spaces: the Epidemiological Threat

Much of the research literature on the veterinary aspects of World War I inherits from primary sources the tradition of creating an imagined success story.[9] In Austrian, German, and Soviet professional discourses of the interwar period, a vivid image of the willingness and ability of medical professionals to overcome a variety of difficulties was intended to offset the common experience of military defeat. Although these narratives are partially supported by statistics and examples from real experience, the general intent of first-person documents, and even more so that of professional publications in the post-war period, had a distorting effect on interpretations. The documents from the immediate war period make clear how conflicted the new experience of interaction between humans, nature, and animals was, although humans did not always remain the dominant subject.

The status of an epidemiological threat in militarized landscapes was given primarily to ungulates (horses, cows), and more specifically to the practices of their keeping, use, and slaughter, as well as the burial of their remains. The drastic densification of the number of mounted units in the presence of native livestock, especially in the limited space of cities, meant huge amounts of manure which, despite all efforts, could not be removed in time and which, without proper processing, became a source of contagious diseases. According to the

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History of Animals in the Age of Empire, vol. 5, ed. Katherine Kete (Berg: Oxford, 2007), 73–93, here 93.

7 Gene M. Tempest. "All the Muddy Horses: Giving a Voice to the 'Dumb Creatures' of the Western Front (1914–1918)", in *Tiere im Krieg: von der Antike bis zur Gegenwart*, ed. Rainer Pöppinghege (Paderborn: Schöningh, 2009), 217–34; Pascal Eitler, "Tiere und Gefühle: Eine genealogische Perspektive auf das 19. und 20. Jahrhundert", in *Tiere und Geschichte. Konturen einer Animate History*, ed. Gesine Krüger, Aline Steinbrecher, and Clemens Wischermann (Stuttgart: Franz Stein Verlag, 2014), 59–78.

8 Rainer Pöppinghege, "Einleitung", in *Tiere im Krieg: von der Antike bis zur Gegenwart*, ed. Rainer Pöppinghege (Paderborn: Schöningh, 2009), 7–14, here 8.

9 Wese, "Die Tierseuche als militärisches Problem".

reports of the health departments, the manure was transported daily from the cities to the fields by dozens of trucks and ploughed into the soil.[10] However, sporadic and unsystematic efforts during the chaos of war failed to fundamentally improve the situation. According to the Russian occupation authorities, the relatively large Galician town of Jarosław was in an extremely unsanitary condition at the beginning of 1915. As the Russian military doctors wrote, "the stables, yards, squares, and streets are covered with dung … the slaughter of livestock is carried out in inappropriate places, where the entrails of the slaughtered animals are scattered."[11] The situation was similar in the Galician capital Lemberg: "the piles of dung, especially in the yards where the mounted units were located, often reached the height of a man and stretched like a continuous wall along the stables, allowing only narrow passages to the doors."[12]

The need to provide meat to the armies on the march meant that significant numbers of cattle were dragged behind them. About 10 per cent of the so-called "portion cattle" contracted foot-and-mouth disease throughout the period, and some of them fell or were deliberately destroyed.[13] The Russian military veterinarians reservedly admired the ultra-modern equipment of the Austrian city slaughterhouses with their electric devices. On the other hand, there was no functioning sewage system in the small settlements, and the wastewater from the slaughterhouses flowed directly into the nearby waters. Hygiene regulations were also violated by the Russian units stationed in Galicia which, when slaughtering livestock, simply left the entrails of the animals in their campsites, in the justified belief that they could get away with negligence in the chaos of troop movements.[14] Documents contain frequent complaints about the disastrous condition of the cattle graveyards, which were perceived as a threat by both the army and the local population.[15]

The organization of the veterinary service under the Russian occupation of Galicia created spaces for the transfer of principles and practices of husbandry,

10 Rossijskij gosudarstvennij voenno-istoricheskij archiv (RGVIA), F. 2139, Op. 3, d. 137, l. 72–87, February 1916.

11 Gosudarstvennij archiv Rossijskoj Federacii (GARF), F. 110, Op. 4, d. 3688, l.89, act 31.1.1915; RGVIA, F. 2139, Op. 3, D. 137, L. 1, February 1916.

12 Appendix No. 17 to the report of the military governor general of Galicia. Report on the activities of the military sanitary administration of Galicia from October 6, 1914 to July 1, 1915, 8.

13 Report on the activities of the military veterinary department of the provisional military governor general of Galicia during the period from January 15 to July 1, 1915, 2–4.

14 RGVIA, F. 2139, Op. 3, d. 137, l. 3, February 1916.

15 RGVIA, F. 2005, Op. 1, D. 12, L. 108. Report of the military veterinary inspector of the provisional military governor general of Galicia "On the Organization of the Veterinary section in Galicia" 21.02.1915.

slaughter, and burial of the remains of dead animals. Having initially decided not to change the existing organization of veterinary work in the field, the Russian command mobilized all remaining Austrian specialists (there were only 13 in the Lemberg governorate and four in the Tarnopol governorate) and combined them in commissions with Russian military medics and "outstanding" epidemiologists invited from Russia. The perception of the hostile Austrian terrain as a source of epidemics led to a tightening of preventive measures and a pedantic detailing of instructions.[16] However, staff shortages in some localities led to the transfer of veterinary duties to conventional military medics. These facts offer the possibility to further explore the practice of transferring knowledge of humanitarian medicine to military veterinary medicine in the context of the First World War.

Mass deaths of horses during the fighting for Galicia led to difficulties in the quality of burial and disinfection of remains even during the occupation. In the minutes of meetings of the Galician local government, the orders of the military administration, and the first-person documents of combatants and war correspondents, the theme of the large number of fallen, abandoned, or poorly buried horse corpses is recurrent. In the streets of the Przemyśl fortress alone, 500 decomposing horse corpses and numerous remains of other animals were discovered after the Russian military command lifted the siege in the spring of 1915. It turned out that the Austrian units were forced to slaughter and eat horses because there was no fodder or food.[17]

However, the situation was no better in the countryside. Reports on the inspection of battlefields in Galicia mention a large number of improperly buried horse corpses. The Austrian standard of burial at least two metres deep was accepted as a model by the Russian army, but in the midst of fighting strict compliance was unthinkable.[18] The distance of the towns and villages from the San River, which both armies fought so hard to cross in the autumn of 1914, meant that burials were becoming more problematic from an epidemiological point of view.[19] The occupation administration was particularly concerned about the impending snowmelt and flooding of the river, which would bring to light the actual number of horse corpses which, according to local administration

16 RGVIA, F. 2005, Op. 1, D. 12, L. 106. Report of the military veterinary inspector of the provisional military governor general of Galicia "On the Organization of the Veterinary section in Galicia" 21.02.1915.

17 Kriegsarchiv Wien. NFA 1321. Festungskommando Przemyśl. 1914/1915. Festungskommando Befehl. 16. Dezember 1914.

18 GARF, F.110, Op. 4, D. 3688, L. 23, January 1915.

19 GARF, F.110, Op. 4, D. 3688, L. 12, Inspection report of 31 January 1915.

reports, were more carelessly buried than the bodies of comrades-in-arms.[20] The hastily made, and therefore poor-quality, animal burials were attributed in part to the nature of the terrain, with its high density of natural ditches and woods.[21] In cases where surface-buried horse remains were found, heavy disinfection with quicklime and chlorine was recommended.[22] However, even fallen horses belonging to Russian military units were in some cases "only lightly covered with soil". Understandably, under these conditions, it was difficult to control disease outbreaks in the remaining animals. There were many cases of horses dying from diseases unknown to Russian veterinarians.[23]

During the reoccupation of eastern Galicia in 1916–17, the Russian leadership refused to use its own troops to provide disease security for the area, shifting responsibility to the local population. While civilian labour was paid in 1914, two years later these measures were imposed under threat of punishment: farmers had to properly bury dead animals on their own properties, public places had to be cleaned by the local administration.[24]

3 Horses on the Austro-Russian Front: Loss and Change of Stock under the Conditions of Military Operations

According to the publications of military historians, World War I was the time of the decline of cavalry and the rapid and irreversible mechanization of military operations. Nevertheless, at all stages of the war, it was assumed on the Eastern Front that there would be many thousands of cavalry corps operating in areas with varying conditions. In fact, the animals, which had previously been scattered relatively evenly over the territory of the countries, were concentrated in a short time on the narrow strip of the imperial fringes. Gene Tempest believes that not only the scale of mobilization but also the statistics of horses that perished in World War I reached colossal numbers: of the approximately 16 million horses that were in service in the armies of the various countries, only half survived.[25] Maksim Oskin, referring to the data provided by the Russian Minister of War, notes that the mobilization of horse personnel in the empire increased by 470 per cent from 1914 to September 1917, and the absolute

20 GARF, F.110, Op. 4, D. 3688, L. 25, 32, 75, Inspection reports of 30–31 January 1915.
21 GARF, F.110, Op. 4, D. 3688, L. 79, Inspection report of 31 January 1915.
22 RGVIA, F. 13216, Op. 1, D. 42, L. 69. Military governor of Galicia. December 1914.
23 RGVIA, F. 2139, Op. 3, d. 137, L. 37, February 1916.
24 RGVIA, F. 13216, Op. 1, D. 42, L. 46. Order to the troops. Chief of Dobromilsky uyezd. (handwritten, undated).
25 Tempest, "All the Muddy Horses", 218.

number of horses in the Russian army was more than 3 million.[26] Falling outside of these calculations, as the author notes, were the auxiliary horses used in the front zone and in the rear. Losses of equine personnel due to wounds, exhaustive exploitation, epidemics, and lack of expensive vaccines were colossal. The scale of mobilization of the cavalry of the empire and the amount of losses led as early as March 1916 to the demand for more careful handling of the "comparatively insignificant remainder".[27]

At the same time, the quality of horses was declining in the Russian army: only one-tenth of the total mass could be used in the cavalry, the remainder serving only as platoon troops in the front areas.[28] The same data is confirmed by the inspections of the cavalry units, where already in 1916 there were horses of the "carriage" variety that had to be replaced. The artillery units, in turn, were overcrowded with horses of weak traction, which were to be transferred to the rear-front units or given for free to the local population. In this regard, the extent of the discrepancy noted and the monthly rotation for a regiment could reach several hundred horses.[29] The constant fluctuation of horses between the front, front-line areas, and the rear undoubtedly had an impact on the military landscape.

The enormous losses of horses also meant that it was an important practice for all the warring armies on the Eastern Front to incorporate trophy horses into their formations. For example, the Russian occupation armies forcibly exported elite breeds of horses which belonged to local private breeders from Galicia to Russia.[30] This action not only had a short-term impact on the Galician economy but also had a long-term effect on the biodiversity of the entire territory. The inclusion of Russian trophy horses in the Austrian and German armies was accompanied by special hygiene measures, as it was suspected that incurable contagious diseases such as sepsis were more prevalent in Eastern Europe.[31] At the end of the war, the German army bought horses en masse from demobilizing Russian soldiers as well as from the local population of the occupied territories.[32]

The disruption of the agricultural cycle of the pre-war ecosystems led to significant shortages not only of horse feed but also of other materials for horse care as early as 1915. The inability of many Austrian military units to find straw

26 Os'kin, "Veterinarnoe obespechenie russkoj armii", 84.
27 Ibid., 86.
28 Ibid., 85.
29 RGVIA, F. 2003, Op. 1, D. 704, L. 8–10, Order of the commander-in-chief of the Northern Front armies. 28.04.1916.
30 RGVIA, F. 2005, Op. 1, D. 12, L.183. Urgent. Lvov. To the governor general, 1915.
31 Wese, "Die Tierseuche als militärisches Problem".
32 RGVIA, F. 2067, Op. 1, D. 578, L. 15, Telegram, 5.1.1918.

for bedding in the immediate area led to the use of substitutes such as sand or wood chips and the boarding of horses, including sick ones, on the stone or cement floors of already inadequate facilities. Military veterinarians noted in their helplessness that "horses without straw would not lie down on the stone floor" which made it impossible for sick animals to enjoy the necessary rest. Only when they were completely exhausted did they consent to lie down, but the lack of sufficiently thick bedding increased the risk of inflammation of their internal organs.[33]

Medical experiments in the absence of the tested remedies were a particular experience in the veterinary care of horses. Since it was not possible to provide units with special resin to cure scabies, untested substitutes were used—crude oil, a mixture of gasoline and oils, and tobacco. The danger to animal life, the side effects, or the known low effectiveness of such agents were considered an unavoidable circumstance and more desirable than forgoing treatment. Austrian veterinarians exchanged formulas for the correct application of crude oil, the use of which could cause a sudden rise in temperature in the horses, or lead to fires in the stable. If the composition of the crude oil was unclear, the instructions recommended testing it "on the least valuable horse". Hair loss was also noted as a side effect of treatment with substitutes, but with proper care it grew back within a month of the end of the treatments.[34]

As is known, the duration of military operations and high losses of manpower in all the armies involved in World War I led to the creation of a special cycle of replenishment of human forces through the system of military hospitals, withdrawal of units for rest from the front, the sending of those on leave to the rear areas, and even going as far as the application of individual spa treatments. A similar system was extended to mobilized animals. The goal of the institutionally and logistically elaborate organization of horse rehabilitation in the Austrian armies was to get horses back to the front as quickly as possible. To this end, not just horse hospitals but also special reception centres for animals in need of recuperation were established, to which mares and foals were also sent. The numbers in such facilities were very high and in most cases exceeded 40 per cent of the total available horse population of an army. The presence of extensive pastures enabled horses in such stations to recover and return to service more quickly. A special place in this cycle was occupied by purebred cavalry horses, which, after recovery, it was advised, were to return to their former associations when war conditions permitted. Animals that

33 Kriegsarchiv Wien. AOK-Qu.—Abteilung. 2285. Traingruppe. 1915/1917 Teilbericht über Inspizierung der Pferdespitäler im Bereiche der 5. Armee. 10–23. Dezember 1915.

34 Kriegsarchiv Wien. AOK-Qu.—Abteilung. 2285. Traingruppe. 1915/1917. Tierärztliche Hochschule in Wien. 3.3.1916.

belonged to other troop types and therefore had less value and attachment to specific individuals were not subject to this type of "personalization".[35] In the case of old horses, again by analogy with retired soldiers, it was suggested that they be transferred to the Department of Agriculture for prolonged rest and rehabilitation or that they be shipped from the front to the rear.[36] Reportedly, most of the wounded horses were taken to specialized hospitals, although a small portion still could not be saved.[37] In the absence of pasture and because of the severe overcrowding (the number of horses could exceed several thousand at times), epidemic diseases spread rapidly. After accurate diagnosis and analysis, horses suffering from smallpox were immediately eradicated.[38]

In the summer of 1917, the Austrian army found itself in a contradictory situation: there was a shortage of tractive power, but there was also a shortage of forage for the horses. Significant shortages of horses in certain corps were reported from the field (e.g. 1,585 horses were lacking in the 23rd Corps alone). However, the coming winter was depicted in gloomy terms in military documents, as it seemed impossible to maintain even the existing contingent of horses, which at the time was estimated at only 500,000. The optimization plans envisaged reducing the number of animals in the active army by a third, which would ensure a more abundant and better quality distribution of fodder among the remaining animals. The losses in tractive power were to be compensated by reformulating the transport units in general, with a move towards vehicle use, and increasing the level of mechanization of the army. In this case, an equivalent substitute for a horse in cavalry units was considered to be a bicycle propelled by the power of human muscles, and motorized columns were to be formed for transporting larger quantities of firewood and provisions for the army (especially in the mountains). To relieve the units of the search for scarce or non-existent fodder, entire horse units were to be sent to the occupied territories of Serbia and Romania.[39]

35 Kriegsarchiv Wien. AOK-Qu.—Abteilung. 2285. Traingruppe. 1915/1917 Instruktion für stabile Pferdespitäler und den Abschub dienstuntauglicher Pferde ins Hinterland. Wien, 1914.

36 Kriegsarchiv Wien. AOK-Qu.—Abteilung. 2285. Traingruppe. 1915/19175 Armee. Bericht über … Dienstreise 13.09–3.10. 1916.

37 Kriegsarchiv Wien. AOK-Qu.—Abteilung. 2285. Traingruppe. 1915/1917. 10 Armee. Bericht über … Dienstreise. 13.09–9.10. 1916.

38 Kriegsarchiv Wien. AOK-Qu.—Abteilung. 2285. Traingruppe. 1915/1917. Etappentraingruppenkommando 9/8. Serbien. 15.6.1916.

39 Kriegsarchiv Wien. AOK-Qu.—Abteilung. 2285. Traingruppe. 1915/1917. K.u.k. Armeeoberkdo. Sehr dringend. Geheim. Reform des animalischen Transportsystem im Stellungskrieg. 31.7.1917.

In the case of the Russian army, the already weak organization of troop supply was on the verge of collapse under the conditions of the spontaneous demobilization that began in early 1917. The envisaged procedure of sorting out the horses and deciding on this basis whether to give them to the population for payment or free of charge, or to transport them to Soviet Russia, could not be followed against the background of the looting of property and shortage of fodder, personnel, and means of transport. There was a massive death of horses on the entire former front, which the Russian military leadership could not prevent.[40] It is noteworthy that General Mikhail Bonch-Bruyevich made the image of unburied fallen horses the centre the apocalyptic picture on the Eastern Front, which "threatened not only Russia but also Europe with the plague".[41]

4 "Love of Animals" as a Prerequisite for Military Efficiency: Dogs on the Eastern Front

Judging from available documents in Russian archives, the use of dogs in the Russian army developed during the war more as a private initiative, authorized by the military command and deployed to different sections of the front. The range of tasks they performed remained very limited, unlike in the Austrian army: they were mainly ambulance dogs, guard dogs, and liaison troops. The initial composition of the dog units was based on the mobilization of dogs from civilian police stations, which had a limited number of trained dogs. Subsequently, the mobilization and training of dogs for military purposes remained an isolated phenomenon and was beset with numerous systemic difficulties, ranging from a lack of veterinarians to accompany the training process to a shortage of equipment, handlers, and suitable animals.[42] One of the unrealized military experiments in the Russian army was an attempt to combine two animal species into a single military formation and train dogs to ride together with humans. However, such an initiative met with insufficient supplies—the necessary saddles for a human and a dog, which according to documents were used in the German and Austrian armies, were not available.[43]

40 RGVIA, F. 2067, Op. 1, D. 578, L. 5, Telegram, 3.1.1918.

41 Rossijskij gosudarstvennyj voennyj archiv, F.1, Op. 1, D. 57, L. 6, Telegram from the Stavka supreme commander Krylenko, 31.1.1918.

42 RGVIA, F. 2018, Op. 1, D. 148, L. 6.

43 RGVIA, F. 2067, Op. 1, D. 2888, L. 138, Quartermaster General to the headquarters of the South-Western Front, 15.10.1915.

The percentage of dog casualties at the front was quite high in the Russian army. For example, in one of the automobile medical detachments, during the first six months of service, out of 10 sanitation dogs, three were killed by bullets and shell fragments while performing their duties in difficult forest and mountain terrain.[44]

Even under the extreme conditions of the war, the commanders and military officials of the Russian army were unable to overcome their prejudices against the characteristics of mixed-breed dogs and the ethnicity of their handlers. Thus, in his correspondence with military commanders, the head of a number of dog schools in the Russian army State Councillor Lebedev made disparaging remarks about the abilities of mixed-breed dogs, explaining their presence at the front by the cheapness of the "material" rather than its quality. To the same extent, he was dismissive and even suspicious in his reports about companions of Jewish origin.[45] Apparently, in both cases, the purity of the breed was for him the decisive factor for military success, equating the selection criteria for men and dogs.

In the Austrian army, the number of dogs at the front was much higher, and their areas of use were very different. In addition to the usual duties as medics and messengers, dogs were used in occupied areas for police duties and even to catch rats in the trenches.[46] In prisoner-of-war camps, dogs were used to guard prisoners or search for escaped persons, as well as to search for stolen items and food.[47] The introduction of dog sleds began in 1915, when the army faced a serious shortage of horses. By 1917, there were more than 4,000 draft dogs.[48] Reportedly, one dog could pull a load of 60 to 80 kg; as many as five dogs were needed to replace one horse. When transporting guns to the mountains, up to 40 animals were tied together on one sled. It was recommended to separate the gun from the carriage to facilitate the movement of the animals. Medical troops reported that dogs were better used for searching for wounded in manoeuvre warfare when the search area and the nature of the terrain required covering great distances and orientation by scent. In contrast,

44 RGVIA, F. 2018, Op. 1, D. 148, L. 9, State Counsellor Lebedev. March 15, 1915.

45 RGVIA, F. 2018, Op. 1, D. 148, L. 47. Report of 6 August 1915.

46 Kriegsarchiv Wien. AOK-Qu.—Abteilung. 2285. Traingruppe. 1915/1917. Kriegs – und Sanitätshundeführer-Kurs. Wien. 28. Mai 1917.

47 Kriegsarchiv Wien. AOK-Qu.—Abteilung. 2285. Traingruppe. 1915/1917. Kriegszughunde Abteilung der k.u.k. Befestigungsbaudirektion Wien. 30.5.1917.

48 Kriegsarchiv Wien. AOK-Qu.—Abteilung. 2285. Traingruppe. 1915/1917. Kriegszughunde Abteilung der k.u.k. Befestigungsbaudirektion Wien. 30.5.1917.

dog sleds were recommended for use in positional warfare when supplies had to be delivered more discreetly but over shorter distances.[49]

An exotic case in the Austrian army was the use of polar dogs prepared by a certain Count Wilczek for participation in a polar expedition. Since the expedition could not be carried out due to the war, the dogs were given to the army stationed in the Carpathians. The dogs of this breed, adapted to the harsh climate, proved to be "an adequate substitute for horses and other draft animals".[50]

In the case of dogs mobilized for the war, the perception and positioning of these animals differed significantly from the constructed images of other animal species. While the maintenance of horses at the front was described in terms of economic and military expediency, as well as food and disease security, the point of reference in the case of dogs was more strongly the combatant himself; dogs, in terms of their hearing, sense of smell, and vision, were supposed to compensate for human shortcomings in the extreme situation of warfare. Although the Austrian army was supplied with dog food from local slaughterhouses in the form of bones and waste, the debate about the appropriateness of using dogs ran parallel to the discussion about optimizing the number of horses at the front. In this case, the military commanders feared that the soldiers would be diverted from infantry service as dog handlers. The counter-arguments of the commanders of the units in which the dogs served revolved around the ability of the animals to save manpower due to their better developed natural qualities—scent detection, hearing, vision, endurance, and speed.[51] The same advantages of the natural search qualities of medical dogs, their ability to overcome difficult terrain conditions (forests, mountains, ravines) in the search for wounded, were also noted by representatives of the Russian army. The greatest impact was seen in the fact that they saved the lives of soldiers and officers, especially in difficult weather, climate, and landscape conditions.[52] Equating the military efficiency of mobilized people and dogs was symbolically expressed by the creation of matching uniform and

49 Kriegsarchiv Wien. AOK-Qu.—Abteilung. 2285. Traingruppe. 1915/1917. Berichte über die Tätigkeit und Verwendung der bei den einzelnen Armeen im Felde befindlichen Zughunde. 1915.

50 Kriegsarchiv Wien. AOK-Qu.—Abteilung. 2285. Traingruppe. 1915/1917. K.u.k. Kriegsministeium. Das Kriegshundewesen in der o-u Armee. Entwicklung und Ausbau.

51 Kriegsarchiv Wien. AOK-Qu.—Abteilung. 2285. Traingruppe. 1915/1917. Kriegs – und Sanitätshundeführer-Kurs. Wien. 28. Mai 1917.

52 RGVIA, F. 2018, Op. 1, D. 148, L. 22, Copies of the reports received from the handlers of sniffer dogs, 1915.

equipment for the handler and his animal.[53] Moreover, one of the most important conditions for the successful mobilization of animals for war purposes in both the Austrian and Russian armies was the connection of the dog with its handlers, guides who had to have developed physical attributes (i.e. strength and endurance), the ability to control the animal, and even "love" for it.[54]

5 Humans and Animals in the Face of War: Verbal and Visual Reflections

Reflection on human-animal relations in wartime in the literary tradition is a fruitful subject of research. For example, Gene Tempest has analysed the portrayal of horses on the Western Front through numerous works of fiction from the interwar period and demonstrates how writers give emotional significance to "dumb" animals. Descriptions of body language, especially the horse's eyes turned toward humans, serve as a means of amplifying the protagonists' emotions.[55]

Of particular interest to this article are the narratives written directly during the war and the peculiarities of the anthropological construction of animals as victims of mobilization and warfare expressed in them. The descriptions of animals in both Russian and Austrian first-person documents serve as a guide for the researcher to the everyday ecological practices of humans at war, as well as to their emotional world, in which nature functions as an existential reference point.

The narrative of Alexei Tolstoy, who travelled through Galicia as a war correspondent accompanying the advancing Russian units, fits with the tendency to depict the horrors of war through the description of dying animals. Since it was not possible for reasons of censorship and morality to show the reader in the rear the suffering of dying soldiers in the rear, he chose a more naturalistic depiction of the moment of death of animals:

> Many horses fell on the way. I saw one lying near the highway with its legs drawn up; it had its head and lower lip stuck out, and its eyes, covered with lids like visors, were tired as if it wanted to sleep terribly; a soldier

53 Kriegsarchiv Wien. AOK-Qu.—Abteilung. 2285. Traingruppe. 1915/1917. K.u.k. Kriegsministeium. Das Kriegshundewesen in der österreichisch-ungarischen Armee. Entwicklung und Ausbau.

54 RGVIA, F. 2018. Op. 1. D. 148. L. 21. Copies from the reports received from the handlers of sniffer dogs. 1915: L. 48. Information about the activities of the (Odessa) society.

55 Tempest, "All the Muddy Horses", 225.

> stood nearby, looking sadly at the dying horse; farther away, another lay on its side, its head tilted back, chewing frequently, and a stream of blood flowed from its nostrils.[56]

The situation of a winter journey through the Galician death landscapes is described quite differently in the notes of Ivan Aryamov, a doctor in the Russian army. In these descriptions there is no trace of literary devices; in their character they are a mixture of naturalism and cynical professional assessment, and only lastly do they contain a hint of human sympathy: "The strongest impression is made by the corpses of the fallen horses lying on the road, often the wagons are driven over their heads. This is cruel and unsanitary, and it would not be difficult to remove them".[57]

Horses as victims of war forms a recurring theme in the diary written by Austrian doctor Josef Tomann in besieged Przemyśl. The author gives his own impressions of being forced to eat horse meat, carefully noting that it "does not taste good". The same eating experience is linked to a joke Tomann records about the Austrian horses refusing to haul rifles to Przemyśl because they did not want to be "turned into meat" there.[58] In several places in his short diary, Tomann expresses his sympathy for the fate of the abandoned, wounded, and dying animals, apparently transferring his own feelings of fear and suffering from his patients to them. The transformation of horses into an object of emotional self-identification is also found in Russian sources; through the images of tired and exhausted animals, the author and his comrades express their own emotional or physical state: "The icy mountain paths and, in some places, the impassable mud finally exhausted the horses, which stopped and resolutely refused to go on."[59]

In the officers' narratives, the horses, like the privates, are embedded in a patriarchal system of paternalism that defines the relationship of the commander (including the medical unit) to his charges. In a situation of resource scarcity, soldiers and horses alike are "voiceless" and powerless in the face of the circumstances of war and in their dependence on the unit commander. Thus, in the records of Friedrich Krause, chief physician of a mobile medical unit in occupied Galicia, ordinary people and horses are symbolically (and

56 Alexei Tolstoy, *V Anglii, na Kawkase, po Volyni i Galizii* (Moscow: Knigoizdatel'stvo pisatetelej v Moskve, 1916), 224.

57 Central State Archive Ministry of Defence, F. 485, Op.1, d. 47, l. 1–25, Zapiski vracha I. Arjamova.

58 Kriegsarchiv Wien. NFA 1322. Festungskommando Przemyśl. 1914/1917. Tagebuch von Josef Tomann.

59 Fedor Stepun, *Iz pisem praporschika-artillerista* (Prague: Plamja, 1926), 37.

even semantically) characterized by inseparable linguistic constructions. The suffering of horses from lack of food evokes sympathy and the willingness to spend even one's own money on scarce and thus expensive fodder—"Horses must not starve!" The overloading of the existing mobilization animals, which "have a hard time on long journeys", forces the purchase of other animals from a refugee farmer.[60]

The range of visual representations of militarized wildlife on the Austro-Russian front is very broad. On the one hand, the photographic documentation reflects the official narrative and serves as a report on the fulfilment of the regulations in force. These images show the organization of cavalry units on parade march, the functioning of wagons and the condition of livestock, the willingness to send dog apprentices to the front, the soldiers' leisure activities, and the diversity of food in the form of beekeeping closer to the trenches. These photographs, conveying the image of a fighting and exemplary army, could be used for military propaganda and mental mobilization of the population on the home front.[61] Another series of photographs shows an important aspect of human-animal relations and the change in sustainable practices from the pre-war period. One of the images, taken by a Russian photographer in Galicia, shows the army's adaptation to a new weapon of this war—gas attacks. Not only the combatants but also their horses are equipped with protective masks, which rather resemble simple multilayer bags without eye holes.[62] Another picture, also from Austria, shows Muslim soldiers of the Austrian army holding a small lamb in their arms. The already exotic nature of the image of soldiers from a religious minority is further emphasized by the different food preferences. On the other hand, the sacrificial animal was meant to demonstrate the tolerance of the imperial army towards the religious communities belonging to it. And while the lamb in the previous photograph is used more as a symbol, some of the photographs capture the slaughter process directly and in individual steps. At the same time, the images are clearly staged, as the soldiers involved in the bloody process look into the camera lens.[63] In both Russian and Austrian visual discourse of the war, the capture in photographs of the mass death of combatants at the front was widespread. Horses were also brought into the picture when documenting the aftermath of battles. In this series, a

60 Friedrich Krause. *Pisma s Pervoj mirivoj* (Saint-Petersburg: Nestor-Istoria, 2013), 57, 107.

61 AT-ÖStA/KA BS I WK Fronten Galizien, 131. Pferde werden der Zivilbevölkerung zur Ackerbestellung zugeteilt, Ottynia; AT-ÖStA/KA BS I WK Fronten Galizien, 89. Österreichische Soldaten pflegen die Bienenstände bei Ottynia.

62 See material from Alexandra Likhacheva's article in this book.

63 AT-ÖStA/KA BS I WK Fronten Galizien, 108.

photograph from the Vienna Military Archives showing an entire platoon of soldiers from the Imperial and Royal Army against the backdrop of a fallen animal stands out.[64] On the one hand, the poses and faces of the people hardly express feelings of grief. On the other hand, the very existence of such a scene shows how important the death of the animal was to the community that decided to document it. However, it should be noted that in the absence of written evidence of photographic situations, this author's interpretations are only one of the possibilities of visual interpretation.

6 Conclusion

Materials from military installations and individual narratives of World War I combatants on the Austro-Russian front, documenting the transformation of anthropogenic landscapes and environments under the influence of warfare, reveal the blurring of boundaries between humans and animals in the status of mobilized creatures. The intensive use and high kill rate of horses on the Eastern Front resulted in visible and long-term ecological changes to the species and its habitat. Millions of animals were concentrated in the outskirts of the empires, affecting rural and urban landscapes ecologically, nutritionally, and epidemiologically. Death, wounding, and disease, the seizure of horses as war booty, and the culling of elite animals led to a high turnover of individuals in the front range, resulting in irreversible changes in the characteristics of the species. Lack of food and medical supplies led to the proliferation of humanitarian medicine practices on animals: on-site treatment by military medics in the absence of veterinarians, medical experimentation, development of measures to rehabilitate wounded, sick, and war-weary animals to make them fit for service again. At the same time, with the elimination of old and long-lived horses of the Austro-Hungarian army and their transfer to the Ministry of Agriculture, a procedure similar to the demobilization of soldiers was introduced.

Attitudes toward animals described in military narratives by combatants depended on the nature of the troops and the social status of the author, as well as on the discursive framework of war reporting between moral constraints, cliché, and professional cynicism. Animal imagery in first-person documents was used to express or amplify the words of the author and protagonists, to depict the suffering and death of war, and to channel unfamiliar emotions. The capture of images of animals at the front, despite its equally contrived

64 AT-ÖStA/KA BS I WK Fronten Galizien, 85. Österreichische Soldaten bei gefallenem Pferd.

nature, allows us to draw conclusions about environmental practices during the war—the interaction between humans, animals, and the environment in its militarized variations, the attempts to protect animals from new kinds of weapons, and the measures taken to bury remains and clean up the military spaces of the Eastern Front.

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CHAPTER 6

"Dangerous Experiment" vs. "Great Blessing": Vaccination and Healthcare Narratives of the Imperial and Royal Army on the Eastern Front (1914–16)

Andrea Rendl

1 Introduction

"Countless people owe their lives and health to vaccination! … Vaccination is a great blessing for all soldiers"[1] proclaimed a military poster in 1916 calling soldiers of the Imperial and Royal 10th Army for vaccination, a practice which it praised to the highest degree. However, the military did not have this positive attitude towards vaccination from the beginning.

At the start of the First World War in 1914, medical research had already developed several effective strategies for dealing with epidemics,[2] including disinfection procedures and strict quarantine regulations. These were part of the learning processes from earlier wars (e.g. the Russo-Japanese War and the Balkan Wars),[3,4] but were also goals of institutionalized scientific research during times of peace.[5] Due to mass mobilization, poor hygiene, adverse climate conditions, and the general chaos of war, the threat of diseases like cholera, typhoid fever, smallpox, and dysentery soon became real and urgent when

1 AT-OeStA/KA FA AOK QuAbt Akten 2239, K.u.k. San-Chef der 10. Armee, Die Schutzimpfung.

2 Daniela Angetter, *Krieg als Vater der Medizin. Kriege und ihre Auswirkungen auf den medizinischen Fortschritt anhand der 2000-jährigen Geschichte Österreichs* (Vienna: Österreichsicher Kunst – und Kulturverlag, 2004), 102.

3 Brigitte Biwald, *Von Helden und Krüppeln: Das österreichisch-ungarische Militärsanitätswesen im Ersten Weltkrieg. Teil 1* (Vienna: öbv & hpt, 2002), 42 ff.

4 Ernst Přibram, "Die Bedeutung des staatlichen Serotherapeutischen Institutes in Wien während des Weltkrieges", in *Volksgesundheit im Krieg, II. Teil,* ed. Clemens Pirquet (Vienna: Hölder-Pichler-Tempsky A. G., 1926), 282–330, here 287.

5 Daniela Angetter-Pfeiffer, *Pandemie sei Dank! Was Seuchen in Österreich bewegten* (Vienna: Amalthea Verlag, 2021), 70–77.

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the Austro-Hungarian troops were mobilized to the Eastern Front.[6] These epidemic outbreaks called for rapid and rational decisions based on already generated knowledge as well as best practice—a basis that the Imperial and Royal Army certainly had at its disposal.[7] Nevertheless, different medical experts, as well as different military departments, disagreed on "the correct" execution of health policy at the beginning of the war: in particular, vaccination as a prophylactic measure was in fact far from being a standardized practice.

Using the example of cholera vaccination, the following chapter deals with the long path to establishing prophylactic vaccination practices within the Imperial and Royal Army on the Eastern Front of the First World War. The focus is more specifically on the region of Galicia, where the Russian and Austro-Hungarian armies not only clashed in numerous battles with huge losses of life but where the medical troops had to contend above all with recurrent flare-ups of cholera infections.[8] The "Galician Eastern Front" thus offers a special object of study, as it in turn presented a complex space for medical learning processes, in which the relationship between medicine and the Austrian-Hungarian military unfolded amid several influencing factors, for example, the specific environmental and climatic situations, and the resident multi-ethnic Galician population, as well as their colonial hierarchical relationship with the Austro-Hungarian troops mobilized there.[9]

2 Disagreement on Health Care

More recent studies have long since refuted the positivist view of the traditional medical historical reception of the First World War on the former eastern periphery of the Habsburg Empire, including that specifically of Austrian medicine, once hailed as "glorious".[10] In this context, the numerous hurdles,

6 Brigitte Biwald, *Von Helden und Krüppeln: Das österreichisch-ungarische Militärsanitätswesen im Ersten Weltkrieg. Teil 2* (Vienna: öbv & hpt, 2002), 532 f; Katrin Steffen, "Experts and the Modernization of the Nation: The Arena of Public Health in Poland in the First Half of the Twentieth Century", *Jahrbücher für Geschichte Osteuropas* 4, no. 61 (2013), 574–90, here 575.

7 Angetter-Pfeiffer, *Pandemie*, 80–84.

8 Elisabeth Dietrich, "Der andere Tod. Seuchen, Volkskrankheiten und Gesundheitswesen im Ersten Weltkrieg", in *Tirol und der erste Weltkrieg*, ed. Klaus Eisterer and Rolf Steiniger (Innsbruck: Studien Verlag, 1995), 255–76, here 256.

9 Włodzimierz Borodziej and Maciej Górny, *Der vergessene Weltkrieg: Europas Osten 1912–1923. Bd. 1 Imperien* (Darmstadt: wbg Theiss, 2018), 336–70.

10 Recent research confirms that the First World War resulted in certain modernizations in epidemic control, from which European medicine was able to benefit after the end of

the excessive demands, the helplessness of the medical staff, and the sometimes serious disorganization, as well as repressive measures and immense human suffering caused by the Imperial and Royal Medical Corps—among both soldiers and civilians—were clearly demonstrated.[11]

The continuing disagreements about the correct use of prophylactic measures among military decision-makers as well as (military) doctors seemed to be symptomatic of the organizational chaos. Although vaccinations in general were by no means an exceptional medical treatment in peacetime and within civilian spheres of the Habsburg Monarchy,[12] the implementation of the various vaccinations of mobilized soldiers at the most favourable time seemed to be a frequently discussed topic within various institutions of the Imperial and Royal Army. This circumstance has already been addressed in research by the Austrian historians Brigitte Biwald,[13] Daniela Angetter-Pfeiffer,[14] Elisabeth

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the war. Elisabeth Dietrich-Daum points to general useful modernizations, such as the establishment of basic military principles like standardization or increased efficiency in different hygiene or treatment practices. However, these advances were made possible by "medical experimentation on human beings". Elisabeth Dietrich-Daum, "Medizin und Gesundheit", in *Katastrophenjahre: Der Erste Weltkrieg und Tirol*, ed. Herman J. W. Kuprian and Oswald Überegger (Innsbruck: Wagner, 2014), 195–216, here 213–214. With the increasing focus on the ethical issues of war medicine, overly positive receptions from the past have since been put into perspective. The military and medical treatment of soldiers as "human material" has long since been exposed, as well as war crimes against civilians. Hermann J. W. Kuprian and Oswald Überegger, "Krieg als gesellschaftliche Grenz – und Gewalterfahrung," in *Katastrophenjahre. Der Erste Weltkrieg und Tirol*, ed. Hermann J. W. Kuprian and Oswald Überegger (Innsbruck: Wagner, 2014), 10–20, here 12; Borodziej and Górny, *Weltkrieg*, 95–111, 291–307.

11 Angetter, *Krieg*; Biwald, *Helden 1*; Biwald, *Helden 2*; Thomas Edelmann, "Von Impfaktionen und medikamentöser Behandlung. Die k. u. k. Armee im Kampf gegen Cholera, Blattern und Malaria im Ersten Weltkrieg", *HGM-Wissens-Blog*, 19 November 2020, https://blog.hgm.at/2020/11/19/von-impfaktionen-und-medikamentoeser-behandlung/, accessed 11 July 2023; Tamara Scheer, "Österreich-Ungarns Besatzungsregime im Ersten Weltkrieg zwischen Medizin, Moral und Kriegsnotwendigkeit", *ÖT KONTINENS 1* (2010), 365–80.

12 For recent studies, see: Andreas Golob, "Die präventive Blatternbekämpfung im Spiegel des Wiener Zeitungswesen. Sondierungen von 1722 bis 1812", in *VIRUS. Beiträge zur Sozialgeschichte der Medizin 20. Schwerpunkt: Kulturgeschichte(n) der Impfung*, ed. Elisabeth Dietrich-Daum, Marina Hilber, Elisabeth Lobenwein, and Carlos Watzka (Leipzig: Leipziger Universitätsverlag, 2021), 55–78; Elena Taddei, *Aspekte von indirektem Impfzwang im Rahmen der Pockenschutzimpfung im Tirol des 19. Jahrhunderts*, 131–46; Carlos Watzka, *Pockensterblichkeit und Pockenimpfung in der Peripherie: Die Zurückdrängung der Blattern in der Bukowina während des 19. Jahrhunderts im Kontext der Gesundheitspolitik in der Habsburgermonarchie*, 167–88.

13 Biwald, *Helden 2*, 533–39.

14 Angetter, *Krieg*, 104–105.

Dietrich-Daum,[15] and Thomas Edelmann.[16] Angetter-Pfeiffer and Edelmann highlighted several cases in which military interests collided with medical or health interests in this context.[17] One of the most vivid of these examples is probably the controversial debate about the execution of the cholera vaccination programme.

During the war, the medical professionals deployed on the Eastern Front had to fight hard against cholera. The outbreaks flared up again and again among both the troops and the civilian population.[18] Cholera is an acute, highly contagious diarrhoeal disease caused by infection with *Vibrio cholerae* bacteria. The infection occurs if contaminated food or water is swallowed. It often runs a mild course or is asymptomatic, but even today it can be life-threatening.[19] Cholera patients can experience severe symptoms, such as profuse watery diarrhoea, vomiting, thirst, leg cramps, restlessness, or irritability. It can even lead to severe dehydration, which in turn can lead to kidney failure, shock, coma, and, ultimately, death within hours.[20] The cause of cholera among soldiers on the Eastern Front was considered to be the widespread consumption of unripe fruit, mouldy food, or spoiled meat among the often starving soldiers.[21] Above all, however, contaminated drinking water led to a rapid spread of the disease. Troops often fought and camped in open fields or crowded into damp, muddy trenches, where they were additionally exposed to harsh weather conditions.[22]

15 Dietrich, "Tod", 258–259.

16 Edelmann, "Impfaktionen".

17 Angetter-Pfeiffer, *Pandemie*, 84–88; Edelmann, "Impfaktionen".

18 There have been seven cholera pandemics worldwide since 1817, affecting Asia, Europe, Africa, and the Americas. In the 19th century, cholera was considered the ultimate urban disease, linked to the unhygienic living conditions of workers and sailors in the growing cities and capitals. Port cities and metropolises such as Hamburg, New York, London, and Naples were particularly hard hit, but cholera also spread overland, reaching Moscow and Berlin. The cholera outbreaks discussed in this article belong to the sixth pandemic, which flared up mainly in Russia, which was devastated by revolution and war. Valeska Huber, "Pandemics and the Politics of Difference: Rewriting the History of Internationalism through Nineteenth-Century Cholera", *Journal of Global History* 15 (2020), no. 3, 394–407, here 394. The seventh has been ongoing since 1961 and, according to the World Health Organization, is the longest-running pandemic to date. World Health Organization on Cholera—Global situation. Available online at https://www.who.int/emergencies/disease-outbreak-news/item/2023-DON437, accessed 14 July 2023.

19 World Health Organization on Cholera. Available online at https://www.who.int/news-room/fact-sheets/detail/cholera, accessed 7 July 2023.

20 Centers for Disease Control and Prevention on Cholera—*Vibrio cholerae* infection. Available online at https://www.cdc.gov/cholera/illness.html, accessed 11 July 2023.

21 Biwald, *Helden 2*, 539.

22 Angetter-Pfeiffer, *Pandemie*, 77.

The latrines overflowing there contaminated nearby water sources (rivers and wells).[23]

According to contemporary military statistics, around 78,300 members of the entire army got infected with cholera between 1914 and 1917. Of these, approximately 16,270 died.[24] Within the context of the warfare that further exacerbated the precarious situation back then, cholera posed an immense challenge to medical professionals. As this disease caused a great number of casualties among soldiers, it developed into a prominent problem for the military leadership. Although cholera vaccination was officially approved in the army in October 1914,[25] its effectiveness was heavily discussed again and again over the following period of about two years by leading military members and doctors. But why exactly?

The debate and the actors involved were complex, as the dividing line cannot always be clearly drawn between military and (scientific) medical interest groups. Different convictions ran through military and civilian as well as scientific institutions. The actors, proponents as well as opponents of cholera vaccination, utilized different narratives based on mostly completely contradictory arguments in order to push through their respective interests. A close reading of army communications from the War Archive in Vienna dealing with the discourse about cholera vaccination and related health measures contributes to the understanding of the construction of arguments for or against vaccination as a protective mechanism against the disease. A comparison of different orders of the War Ministry and the Army High Command, the Army Rear Command, and reports of sanitation chiefs and military as well as civilian doctors exposes the different narratives that were used to build those arguments back then. By using specialized research literature and reports from the interwar period for contextualization, a deeper hermeneutic approach can provide revealing insights on the following question: how exactly were these narratives constructed, legitimized, and used for different kinds of interests?

In the following, using the example of cholera vaccination, an exemplary selection of commands and reports will be used to show how narratives interact and can influence the process of medical learning. Against the background

23 Oksana Nagornaia and Yaroslav Golubinov, "Embattled Nature: Men and Landscapes on the Eastern Front of the First World War", in *Science, Technology, Environment, and Medicine in Russia's Great War and Revolution* 1914–22, ed. Anthony J. Heywood, Scott W. Palmer, and Julia A. Lajus (Bloomington: Slavica Publishers, 2022), 333–51, here 341.

24 Salomon Kirchberger, "Beiträge der Sanitätsstatistik der österreichisch-ungarischen Armee im Kriege 1914–1918", in *Volksgesundheit im Weltkrieg, I. Teil,* ed. Clemens Pirquet (Vienna: Hölder-Pichler-Tempsky A. G., 1926), 47–77, here 53.

25 Edelmann, "Impfaktionen".

of the still ongoing COVID-19 pandemic,[26] particularly, an analysis of the strongly competing narratives about health interventions regulated "from above" seems to gain renewed importance.[27]

3 Cholera and Cholera Vaccination: A Polarizing Issue

At the beginning of the war, the Austro-Hungarian troops were first sent to the Eastern Front with almost no preparation for epidemic outbreaks. According to retrospective reports from 1926, the Imperial and Royal Army went to war without specifically established epidemic hospitals.[28] Until 1915, if epidemics occurred, regular hospitals were converted into epidemic hospitals.[29] Moreover, the doctors who were suddenly mobilized en masse were either not or only inadequately prepared for the treatment of epidemics, and were often randomly assigned to serve in Galicia.[30]

This approach by the military leadership (especially within the War Department) suggests that the threat of disease outbreaks was not necessarily seen as a priority. Dietrich-Daum, in particular, drew attention to this: although the empirical findings of research as well as the practical experience already gathered by the Imperial and Royal Army on the eve of the war suggested the need for comprehensive, forward-looking, and strictly implemented disease control in armed conflicts, this was neglected.[31] This was evident, for example,

26 The currently still rampant AIDS pandemic should also be mentioned in this context. After all, in 2022, about 39 million people worldwide were living with HIV and about 630,000 people died of AIDS-related diseases, UNAIDS, Fact Sheet, 2023. Available online at https://www.unaids.org/sites/default/files/media_asset/UNAIDS_FactSheet_en.pdf, accessed 14 July 2023. By 2020 at the latest, however, it seems to have been pushed to the margins of media attention by the COVID-19 pandemic.

27 For new approaches in the debates on health interventions and vaccination in the context of the COVID-19 pandemic, see Malte Thießen, *Auf Abstand: Eine Gesellschaftsgeschichte der Coronapandemie* (Frankfurt am Main: Campus Verlag, 2021).

28 Wilhelm Raschofsky, "Militärärztliche Organisation und Leistungen der Epidemiespitäler österreichisch-ungarischen Armee", in *Volksgesundheit im Weltkrieg, I. Teil,* ed. Clemens Pirquet (Vienna: Hölder-Pichler-Tempsky A. G., 1926), 122–33, here 122–123.

29 Dietrich, "Tod", 257. Only in the course of the first year of the war did the army have about 40 mobile and eleven stable epidemic hospitals. Clemens Pirquet, "Einleitung", in *Volksgesundheit im Weltkrieg, I. Teil,* ed. Clemens Pirquet (Vienna: Hölder-Pichler-Tempsky A. G., 1926), 1–13, here 5.

30 Dietrich, "Tod", 257.

31 Research evaluates the organization of the German army's defence against epidemics as significantly better than that of the Austro-Hungarian army, also with regard to cholera. Thus they recorded only one-tenth of the cholera deaths of the Imperial and Royal Army.

in the actions of military decision-makers, such as the deliberate initial delay in offering different vaccinations of the troops at the beginning of the war. For this reason, Dietrich-Daum described the military's actions in fighting the epidemic as clearly "incomprehensible"[32] in this case.

In retrospect, the military's actions in the specific case of cholera protection measures also appear incomprehensible. Although catastrophic hygiene conditions could be assumed in Galicia due to mass mobilization and flight movements alone, most soldiers in the army were not vaccinated against cholera when they were mobilized.[33] However, the fact that the cholera vaccine was still in an early stage of development[34] favoured anti-vaccination approaches of the military at the beginning of the war. The representatives of this group mainly relied on the argument that the expected side effects of vaccination (fever, etc.) would impair the soldiers' fighting ability, and thus the army's effectiveness, too much[35]—about which, above all, the widespread narrative was constituted that "cholera vaccination (sometimes vaccinations in general) weakens the army".

On the other side, from the beginning, there were convinced doctors in research who recommended vaccination as protection, as well as high military institutions that tried to follow this advice. With the counter-argument that the danger of cholera (and the troop losses to be expected as a result) was too great to let the troops go into the field completely unprotected, they used the opposite narrative that, rather, "cholera weakens the army". Initially, however, fear of the unknown and admittedly little-researched substances (with possible negative consequences for health and striking power) outweighed fear of the very probable infection with the contagious disease (with a proven morbidity rate of around 20 to 70 per cent, if not treated properly).[36] "Cholera

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Biwald, *Helden 2*, 536. Biwald refers here to studies of Manfred Vasold, *Die Pest: Ende eines Mythos* (Stuttgart: Theiss, 2003), 267.

32 Dietrich, "Tod", 257.

33 Within the Habsburg Monarchy, there was a clear east–west divide, as infectious diseases with high mortality rates occurred endemically mainly where climatic and sanitary conditions were most unfavourable. Strict hygiene measures (organized sewerage, waste disposal, etc.) ensured that outbreaks of cholera in the west of the monarchy became exceptional cases and compulsory vaccination of the civilian population was not considered necessary, Dietrich, "Tod", 256.

34 Přibram, "Serotherapeutisches Institut", 289; Biwald, *Helden 2*, 536.

35 Dietrich, "Tod", 259.

36 "Cholera als Blaupause für Pandemien", interview with Vivek Neelakantan and Eva-Marie Knoll, *Austrian Academy of Sciences on Medical History. News of the Austrian Academy of Sciences*, 24 May 2023, https://www.oeaw.ac.at/news/cholera-als-blaupause-fuer-pandemien#, accessed 7 July 2023.

vaccination weakens the army" therefore remained the dominant narrative for the next two years.[37]

Of course, this did not eliminate the imminent danger of cholera spreading. However, with the narrative of "debilitating vaccination", conservative approaches were initially relied upon to contain the growing number of infectious outbreaks without risking the fighting ability of the troops: the military tended to favour non-invasive practices at the beginning of the war, relying on strict hygiene and disinfection measures, as well as monitoring compliance with these measures. An order from the 3rd Army Command in Grybów on 24 September to all surrounding troops, for example, gives proof of that:

> In view of the imminent danger of cholera … it is once again ordered that the garrison should only eat cooked food and drink boiled water, possibly with the addition of coffee or tea. Where practicable, the garrison is to be instructed to wash their hands with soap and clean water before eating. Every case of diarrhoea, especially vomiting and diarrhoea, must be brought to the attention of the doctor immediately, and the person suffering from vomiting and diarrhoea must be strictly isolated and his or her belongings disinfected with milk of lime. For this purpose, an adequate supply of lime is to be kept in each ward.
>
> The garrison shall be instructed by the doctors on the nature of cholera and on the preventive measures against it; the officers shall strictly supervise the implementation of these measures.[38]

In this respect, the military leadership seemed to be rather cautious and to adopt a wait-and-see attitude in the first months, while the cholera vaccination practice was not really considered seriously. Since the massive spread within the army and into the hinterland was not yet too acute at this point, it was apparently assumed that "light" measures would suffice to get cholera under control, although the hygiene conditions on the Eastern Front were already inferior in the autumn of 1914 and the conservative measures applied soon failed miserably.[39]

37 Edelmann, "Impfaktionen".

38 AT-OeStA/KA FA NFA HHK AK 3. Armee EKdo 299/ 1174, Op.Nr. 814, k.u.k. AK Grybow, am 24. 9. 1914.

39 Edelmann, "Impfaktionen".

4 Internal Military Power Struggles and Medical Support

Beyond content-related aspects, the debate on cholera vaccination additionally became the arena for disputes over competences and power struggles between different military institutions. The Army High Command and the War Ministry, for example, tried to oppose each other by ordering completely contradictory measures: initial efforts by vaccination advocates of the Army High Command to order cholera (and also typhoid fever) vaccines from the Sero-Therapeutic Institute in Vienna[40] were prevented by the War Ministry.[41] With the main argument or narrative that the army's power would suffer too much[42] from the vaccination side effects (i.e. fever), vaccination opponents within the military were able to prevail at first.

Interestingly, the anti-vaccination military order was not only enforced through military hierarchical dominance, but also sought assistance from medical or scientific advice. In August 1914, the War Ministry had the head of this institute, Dr Richard Paltauf, confirm in an expert opinion that the implementation of the vaccinations in general was not feasible during mobilization:

> In approx. 25% of vaccinations a fever occurs, which in some cases can reach temperatures of up to 40°C. … These reactions generally take two days; this is true for typhoid fever vaccination, with cholera [vaccination] … the temperature hardly ever rises above 38°C. Both vaccinations should be repeated at intervals of six to eight days. This means that these vaccinations can only be given to troops who will certainly not be used in any action for three to four days after each vaccination. It must therefore be described as more or less impracticable during mobilization.[43]

It cannot be assumed that the military approached a medical expert here without bias. Retrospective reports suggest that the War Ministry rather put pressure on the institute to justify its planned course of action.[44] Medical

40 The Sero-Therapeutic Institute in Vienna produced vaccines but also did scientific research and provided educational programmes for doctors, *Přibram*, Serotherapeutisches Institut, 282–330.

41 Dietrich, "Tod", 259.

42 Přibram, "Serotherapeutisches Institut", 289.

43 AT-OeStA/KA FA AOK QuAbt Akten 1347/ 408, k.u.k. Kriegsministerium Abt. 14 Nr. 4661 an das k.u.k. EOK in Wien, am 18. August. Cholera und Typhusschutzimpfung. Prof. Rich. Paltauf. Leiter des k.k serotherapeutischen Institutes in Wien.

44 Přibram, "Serotherapeutisches Institut", 289.

testimonies like Paltauf's provided an opportunity to strategically use medical arguments to legitimize and continue to maintain useful narratives for anti-vaccination interests. In this context, Paltauf's statement that vaccination was generally unworkable during mobilization became the main argument against vaccination, which in turn reinforced the narrative "vaccination weakens the army"—a narrative that took precedence in military thinking, in which the time factor always played a major role.

For this reason, the military's initial reticence regarding vaccination is probably due not least to the general shortage of time. The widespread assumption that the First World War would only last a few months or weeks[45] from the point of view of the Central Powers seems to have led the military and politicians to allot far too little time and too few resources for their operations. According to this thinking, any kind of delay was therefore, indeed, as Paltauf stated, impractical for military interests. As a result, vaccination advocates were initially unable to convince decision-makers to reconsider the prevailing narrative that "cholera vaccination weakens the army".

Of course, this perspective was rather short-sighted, both from a medical and a military point of view, since, contrary to expectations, the First World War lasted for several years. Due to the poor hygiene conditions, cholera and other epidemic outbreaks occurred after only a few weeks,[46] causing high losses among the troops, which actually damaged the army's striking power. Nevertheless, the War Ministry kept the upper hand in the autumn of 1914, hoping that the army would succeed before the cholera outbreak got too bad.[47]

For the military, time alone remained the top priority as an argument against vaccinating mobilized soldiers. Interestingly, in addition to the impracticability of vaccination in general, Paltauf felt compelled to present the impracticability of cholera vaccination in particular, providing an additional argument:

> Typhoid fever vaccination is theoretically well-founded, in practice often carried out many times, in some armies, however, in small proportions compared to the large colonial armies (English and German) or the French troops in Morocco (approx. 20,000 men), even in the army of the United States (approx. 50 000–60 000 men), and it has shown positive

45 Sabine Mischner, "Tagebuchschreiben als Zeitpraxis. Kriegstagebücher im Ersten Weltkrieg", *Traverse: Zeitschrift für Geschichte/Revue d'histoire* 23 (2016), no. 3, 77-90, here 80–81.

46 Dietrich, "Tod", 259 ff.

47 Edelmann, "Impfaktionen".

> results. Cholera vaccination is theoretically less well-founded, but has been practised in India, Japan and Russia, mainly among the civilian population, sometimes also among troops; mainly in the last Balkan War (favourable reports from the Greek army).[48]

The consideration of vaccinating mobilized troops against cholera therefore lost its appeal from a military point of view, and not only because of the time factor: Paltauf described cholera vaccination itself as being theoretically less sound[49] compared to the already known typhoid vaccine. Via this statement, a new narrative was constructed, namely that "the cholera vaccine was unpredictable", which fulfilled an additional legitimizing function for military interests: the narrative justified the army's preferential action of remaining cautious about vaccination and waiting because medical experts said that the cholera vaccine was not yet "sufficiently researched".[50] This counsel not only made sense in the military's mindset but above all could scientifically validate their short-term interests.

It is also interesting to note that Paltauf's advice was based on the experience of other countries that had already gained more experience with cholera vaccination. Thus a categorization of "valid" and "invalid" results emerged based on their "origin": while the "well-known" and "reliable" typhoid vaccination practice was linked to Western nations in a military context, the "less reliable" cholera vaccine was linked to Eastern countries in a mostly civilian context—a circumstance that could well suggest a colonial perspective on the East. So far, this hypothesis cannot be fully substantiated from the official command correspondence, which is rather subtle in this respect; however, a look at retrospective reports by former Austrian military doctors on epidemiological learning processes on the Eastern Front can be quite revealing.

Not infrequently, these reports communicated a strong sense of "cultural superiority" with regard to Eastern European countries, even within the sphere of medicine and hygiene.[51] For example, their authors, like many Austrian and German scientists, repeatedly used directly formulated chauvinistic,

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48 AT-OeStA/KA FA AOK QuAbt Akten 1347/ 408, k.u.k. Kriegsministerium Abt. 14 Nr. 4661 an das k.u.k. EOK in Wien, am 18. August. Cholera und Typhusschutzimpfung. Prof. Rich. Paltauf. Leiter des k.k serotherapeutischen Institutes in Wien.

49 AT-OeStA/KA FA AOK QuAbt Akten 1347/ 408, k.u.k. Kriegsministerium Abt. 14 Nr. 4661 an das k.u.k. EOK in Wien, am 18. August. Cholera und Typhusschutzimpfung. Prof. Rich. Paltauf. Leiter des k.k serotherapeutischen Institutes in Wien.

50 Biwald, *Helden 2,* 536.

51 Borodziej and Górny, *Krieg*, 336–70.

racist, and stereotypical phrases[52] about "the East" and its "backward cultures" when describing Galicia—which often appeared in Austrian perceptions as the "eastern, underdeveloped periphery" of the Habsburg Monarchy.[53]

Ultimately, of course, we cannot know for certain what personal attitudes individual medical experts held toward scientific research from the Eastern European countries. What can be gleaned from Paltauf's statement above, however, is that according to his expertise, the experience of Eastern countries was not sufficient to classify the cholera vaccine as safe for one's own army at the time. This was another useful counter-argument which continued to reinforce the "cholera vaccination weakens" narrative.

5 Vaccination as the Very Last Resort

However, the hygiene situation on the Eastern Front deteriorated drastically within only a few weeks of the beginning of the war.[54] The initially preferred non-invasive methods of disease control, such as disinfection of hands, disinfection of food and water by cooking, isolation of the sick[55] etc., could not effectively halt the spread of several epidemics. Additionally, adequate treatment of the sick was often not possible simply due to a lack of personnel, equipment, and treatment options.[56] Cholera alone claimed the lives of more and more soldiers who were urgently needed for the fighting. By the end of October 1914, some 3,642 Austro-Hungarian soldiers had died because of infection with cholera,[57] a circumstance that the military could not ignore and

52 Reports about the fight against epidemics among the civilian population of Galicia contained, for example, the opinion that "the hygienic requirements could not be met" because "the areas where the war took place were for the most part very basic in terms of their culture", or that "there was no talk of cleanliness, of the appropriate disposal of waste", Raschofsky, "Epidemiespitäler", 126. Others wrote about the "unspeakably primitive living conditions of the small peasant population in Galicia … [and] the associated low level of hygienic conditions", Rudolf Stiglbauer, "Report on Frontline Doctors", in *Ärzte und ihre Helfer im Weltkriege 1914–1918,* ed. Burghard Breitner (Vienna: Göth, 1936), 93–99, here 94.

53 Elisabeth Haid, "Im Blickfeld zweier Imperien. Galizien in der österreichischen und russischen Presseberichterstattung während des Ersten Weltkriegs (1914–1917)", in *Studien zur Ostmitteleuropaforschung 43,* ed. Herder-Institut für historische Ostmitteleuropaforschung—Institut der Leibniz-Gemeinschaft (Marburg: Verlag Herder-Institut, 2019), 264.

54 Edelmann, "Impfaktionen".

55 Ibid.

56 Biwald, *Helden 2,* 540.

57 Biwald, *Helden 1,* 535.

which required decision-makers to regularly evaluate their anti-vaccination stance. Interestingly, the military increasingly recognized the benefits of vaccination in the fight against epidemics in general. Yet it took much longer for the army to decide to specifically use cholera vaccination as a prophylactic measure compared to other vaccines.

As the situation continued to deteriorate, vaccination against cholera was permitted from November 1914, at least in principle, as an additional measure to the obligatory hygiene precautions. However, troop commanders were free to decide whether or not to have their own soldiers vaccinated against cholera. In general, vaccination was recommended to be carried out only "in individual cases" and under special circumstances[58]—ironically, when all other, non-invasive hygiene measures had failed, a situation that had long since occurred. Still, this right continued to be exercised only very hesitantly due to widespread and persistent scepticism about cholera vaccination. Even the Interior Ministry,[59] for example, spoke out against cholera, as the following order to the Army High Command and the Army Rear Command shows:

> The cholera vaccination in contrast to the smallpox vaccination, does not provide unconditional but only relative (not yet ensured) protection. It should be considered as an individual protective measure according to the experience gained so far, which has not yet been concluded … in general only under certain conditions. These conditions can be considered met, if under very bad hygiene conditions … the implementation of the otherwise necessary measures for the control of cholera … is impossible.[60]

The anti-vaccination attitude in this case was constituted by the same arguments and narratives that were used in the intra-military debate. This time, the still relatively unknown cholera vaccine was compared with the well-researched smallpox vaccine, which was rated as "more trustworthy". Interestingly, the order went one step further and additionally questioned the reliability of the vaccine's efficacy, which constructed an even stronger argument against

58 AT-OeStA/KA FA AOK QuAbt Akten 1353/ 5202, k.k. Minister des Inneren an das kuk AOK/EOK, Wien am 9.11.1914. Cholera Schutzimpfung. Abschrift eines Erlasses des k.k. Ministers des Inneren vom 9. November 1914, Zl.7.832/S, an die k.k. Statthalterei in Galizien.

59 The ministry was reluctant to recommend vaccination to civilian authorities and initially shared similar concerns about cholera vaccination to the military. Research has shown, however, that within the civilian sphere, the Galician population was vaccinated on a broad basis much, more quickly and earlier. Edelmann, "Impfaktionen".

60 Edelmann, "Impfaktionen".

the cholera vaccine. Although the hygiene conditions on the Eastern Front were known to be getting worse, by means of statements like these the military again legitimized its action by playing it safe and perpetuating the argument that non-invasive measures such as disinfection were more reliable and not only definitely effective but even more effective compared to the supposedly ineffective invasive vaccination—which again confirms the narrative of "cholera vaccination as unpredictable" and adds the implied attribute "ineffective". Unsurprisingly, cholera vaccination was still to be officially administered only in individual cases and was considered as a real last resort.

Of course, considering the precarious situation, there were dissenting voices right from the start. Pro-vaccination military doctors and leaders sought to take advantage of the wartime benefits of prophylactic vaccination and stop the high additional casualties among soldiers due to disease. Like their opponents, they sought support for their arguments from medical and scientific expertise. They therefore presented their practical experience with cholera vaccination to the military leadership in reports. The results of their "mini studies" pointed more to a successful containment of cholera outbreaks than to the impairment of the army's striking power.[61] A medical officer of the 2nd Army, for example, reported to the Army High Command as early as October 1914 that

> The 4th Corps, in order not to lose its ability to act due to cholera infection, had the most severely infected infantry regiments vaccinated on its own responsibility. The experience gained from about 9,000 such cases showed that the ability to act … was not affected at all. The team completed a seven-hour march on the day following the vaccination without any … vaccination damage occurring … 1,000 cholera deaths have occurred in the entire army since September … and the strictly implemented sanitary measures have not been able to achieve any effective success due to the unfavourable weather conditions and partly also to inadequate equipment of the garrison. It is necessary to vaccinate the entire army.[62]

In this context, some completely contradictory arguments came into play, the purpose of which was, of course, to undermine the arguments of the other side. Initially, the "cholera weakens" argument was deliberately made explicit as the dominant narrative. This set the scene for all the following arguments,

61 Edelmann, "Impfaktionen".

62 AT-OeStA/KA FA AOK QuAbt Akten 1350/ 2695, k.u.k. 2 AK Res Nr/40 S.R an das AOK in Neusandez, Bartfa am 1. Oktober 1914. Cholera-Schutzimpfung.

which in turn were meant to support the main narrative. In the process, every argumentation point of the opposing side was taken up and invalidated: for example, it was explicitly and clearly stated that the hygiene measures had failed due to the bad weather conditions and that the disease could not be contained through them alone. The narrative of cholera vaccination as a last resort was thus used to the advantage of the pro-vaccination military doctors. Here, too, the reporting medical officer went a step further and invoked practical experience, stressing that there was no indication that the army's striking power would suffer as a result of carrying out the vaccination, since the vaccinated troops had covered long and arduous marches. This fact was particularly and repeatedly emphasized. With the help of these argumentation strategies, the officer tried to present his own conviction conclusively and to legitimize it via practical scientific research, therefore constructing the narrative that the (cholera) vaccination was safe and should be introduced throughout the army as soon as possible.

6 Civilian Health: Something "Completely Different"[63]

From the tone of statements such as those of the medical officer of the Second Army and the Ministry of the Interior, internal conflicts of competences between various military agencies and between medical experts once again become abundantly clear. Due to the persistent efforts of both sides to impose their views, the debate on the standard implementation of cholera vaccination of mobilized soldiers did not end until 1916.[64] While some vaccination supporters vigorously tried to enforce the cholera vaccination, anti-vaccination voices insisted on the "danger" and the "unpredictability" of the high uncertainty factor of the vaccination.[65] The sanitary chief of the 4th Army, for example, was convinced that cholera vaccination was not only undesirable but even dangerous under certain circumstances:

> On the basis of theoretical considerations and according to the experience of animal experimentation, the possibility cannot be dismissed that, in cases of severe cholera infection, these vaccinations might constitute a

63 AT-OeStA/KA FA AOK QuAbt Akten 1347/ 408, k.u.k. Kriegsministerium Abt. 14 Nr. 4661 an das k.u.k. EOK in Wien, am 18. August. Cholera und Typhusschutzimpfung. Prof. Rich. Paltauf. Leiter des k.k serotherapeutischen Institutes in Wien.

64 Edelmann, "Impfaktionen".

65 Ibid.

> dangerous experiment under certain circumstances. … Cholera death [is] ultimately caused by so-called bacterial endotoxins that are released by the decay of cholera bacteria in the infected body.[66]

According to the sanitary chief, the vaccine would cause an accumulation of toxins and accelerate death. He therefore addressed cholera vaccination as a potentially "dangerous experiment", which again supported a very negative narrative of (cholera) vaccination. Opponents, for their part, again responded to statements like these with a concrete case study, a direct questioning of the logic of their opponents, and a new request to better research the cholera vaccination practice:

> Dr Julius Maldovan, President of the 2nd Sanitary Commission, performed therapeutic vaccinations with the cholera vaccine on about 300 bacteriologically secured cholera patients. He observed a strikingly favourable mortality ratio. Even though the experts consulted were of the opinion that the vaccination of infected patients—in the case of a disease that kills in a few hours—is theoretically unsound, the procedure should be re-examined under the necessary controls, since its previously claimed dangerousness has not been proven.[67]

Although there was a determined effort to push the pro-vaccine narrative that cholera vaccination is safe, citing a concretely observed improvement in mortality rates, opponents of vaccination in the military and the medical community remained adamant. The argument that vaccination was a last attempt in a desperate situation to save the lives of infected people who were already dying could not convince the opposing side in the long term. The very negative, even "deathly", image of cholera vaccination remained.

Against this background, it is extremely interesting that military doctors agreed from the very beginning that the cholera vaccination of civilians and non-active combat personnel or wounded soldiers was something "completely different" and should be carried out "without any hesitation".[68] This can

66 AT-OeStA/KA FA AOK QuAbt Akten 1463/ 13716, k.und k. 4. Armee-Etappenkommando Op.Nr. 11524 an das k. und k. Etappenoberkommando Teschen, Standort des AEK am 8. Dezember 1914.

67 AT-OeStA/KA FA NFA HHK AK 3. Armee EKdo 303/ 1953, k.u.k. 3.AK/AEK Choleraschutzimpfung.

68 AT-OeStA/KA FA AOK QuAbt Akten 1347/ 408, k.u.k. Kriegsministerium Abt. 14 Nr. 4661 an das k.u.k. EOK in Wien, am 18. August. Cholera und Typhusschutzimpfung. Prof. Rich. Paltauf. Leiter des k.k serotherapeutischen Institutes in Wien.

already be read in Paltauf's letter from August 1914, in which he recommended vaccination (against both cholera and typhoid fever!) of these groups in a few exceptional cases:

> But exceptions may exist here too, e.g. in the case of occupation of fixed places … after the completion of certain operations [or] after … a longer period of rest. The situation is, of course, quite different in the case of troops who have been wounded, traumatized, or [have] venereal infections, or those who are already incapacitated. Here, in order to protect these people from typhoid fever and cholera, vaccination could be carried out without hesitation … the medical staff and waiting staff should also be vaccinated on a regular basis.[69]

Taking into account Paltauf's previous lines from the same report, his advice was certainly initially geared towards military interests. But it seems that as a medical expert with extensive knowledge of epidemiology, Paltauf could not deny the danger of cholera altogether. Due to the hierarchy, in which the military clearly had the upper hand, it seems that he tried to propose a compromise: on the one hand, epidemiologically urgent actions should not be completely disregarded, on the other, military operations should in no way be endangered. Therefore, Paltauf tried to encourage the military to vaccinate as many non-combatants as possible, i.e. mainly civilians. Paltauf's partial concession therefore attempts to subtly address a common functionalist, military practice at the time: to regard actively fighting combatants as urgently needed "human material".[70] Interestingly, however, soldiers were perceived in this context less as "cannon fodder" than as an enduring resource who should on no account be exposed to risky medical treatments.

This approach was of course favoured by central findings of the army's medical learning system. As the war progressed, the army commands recognized the importance of the state of health of the civilian population for that of their own troops.[71] This included monitoring the epidemiological situation of the civilian population in areas that had already been abandoned by troops. Cholera apart, increasing importance was attached to disease control through the sanitation of the staging area and various vaccinations (against smallpox

69 AT-OeStA/KA FA AOK QuAbt Akten 1347/ 408, k.u.k. Kriegsministerium Abt. 14 Nr. 4661 an das k.u.k. EOK in Wien, am 18. August. Cholera und Typhusschutzimpfung. Prof. Rich. Paltauf. Leiter des k.k serotherapeutischen Institutes in Wien.

70 Kuprian and Überegger, "Krieg", 12.

71 Edelmann, "Impfaktionen".

or typhoid fever) of the civilian population.[72] The military ultimately followed advice such as Paltauf's and also handed over the decision-making power to arrange vaccinations to the civilian authorities on the ground. In this way, the military also possibly sought to avoid the impractical "side issue" of war epidemics of primary responsibility, which was handed over to civilians and those parts of the army that were not actively fighting—which were indeed seen as potentially dangerous hotspots of epidemic outbreaks.[73] In this case, the narrative "cholera weakens the army" prevailed over the narrative of "vaccination weakens the army": civilians, military personnel, and resting troops, on the other hand, were considered either temporary or not at all "useful" for military objectives. The vaccination of these individuals was carried out in accordance with this.

The main point is that the military decided which narrative was the dominant one for each group and regulated the bodies of both—even by force: civilians, all kinds of staff, and armies not actively fighting were occasionally forced to get vaccinated,[74] to keep the danger of "weakening due to cholera" away from the troops, who should be ready for fighting at any time,[75] but also to avoid the risk of spreading cholera into the hinterland.[76] This was done from the beginning of the war and despite the "deathly" image of the cholera vaccine.

7 The Turn

Regardless of anti-vaccination beliefs among doctors and the military, cholera continued to spread, putting more and more soldiers out of action, and the army's striking power actually began to suffer.[77] Military leaders eventually realized that the disease could no longer be contained without broader

72 Ibid.

73 Particularly on the Eastern Front and in Galicia, the narrative of "the unhygienic East" was also often used from a German-speaking, Austrian perspective, which attributed the "main blame" for the cause and spread of infectious diseases mainly to the equally unhygienic, primitive, and basically living people and civilians "from the East", Raschofsky, "Epidemiespitäler", 126.

74 Edelmann, "Impfaktionen"; Borodziej and Górny, *Krieg*, 363–364.

75 Recent studies on public health in Eastern Europe found that the German army acted in a similar way. The focus was on protecting their own troops against epidemics; civilians in (now) Polish areas were perceived and treated as "inferior human beings". The chosen sources from the Austro-Hungarian army point to a similar view, Steffen, "Modernization", 575.

76 Edelmann, "Impfaktionen".

77 Biwald, *Helden 2*, 537.

vaccination efforts. As time passed, researchers also gained more information about cholera vaccination practice and came to the conclusion that although the vaccine did not guarantee one hundred per cent protection, it minimized the risk of infection and increased the chances of recovery.[78] This conclusion finally met with wider agreement within the army as its new concern was how to compensate for increasing losses due to cholera. With the help of vaccination, the military finally had a chance against cholera and the situation changed for the better.[79]

As the effectiveness of cholera vaccination was increasingly proven, the narrative slowly began to change too. From 1916 on, reviews of the cholera vaccination therefore display a completely different tone.[80] Soldiers were even actively called upon to be vaccinated, as described at the beginning of this chapter. Cholera vaccination finally seemed to be acknowledged as a standardized, proven method as it was now explicitly used as an example of the general, high effectiveness of vaccination in combating epidemics:

> Infectious diseases claim a particularly large number of victims … Now we already know a lot of ways to protect ourselves against these contagious diseases. Among them, vaccination has a prominent place. Millions of people were vaccinated during the war without any bad consequences or even deaths. On the contrary, countless people owe their lives and health to vaccination! … In the Austro-Hungarian army, cholera, which had only just broken out, was cut off in 5–8 days after vaccination, mortality was incomparably reduced … These facts show that vaccination is a great blessing for all soldiers. …Soldiers! Support all health measures for the good of the fatherland and your own good.[81]

From then on, the narrative "cholera vaccination strengthens" became the preferred one. It was also clearly based on all the arguments that supported this one and invalidated earlier counter-arguments: for example, that vaccination was definitely safe, effective, and reliable. This time, the military went a step further: the decision to vaccinate was even portrayed as a "service to the fatherland", adding a dutiful, patriotic component to the whole debate. Soldiers should now do everything possible not to hand victory

78 Edelmann, "Impfaktionen".
79 Edelmann, "Impfaktionen".
80 Ibid.
81 AT-OeStA/KA FA AOK QuAbt Akten 2239, k.u.k. San-Chef der 10. Armee, Die Schutzimpfung.

to the enemy troops and therefore also to defend themselves against "the enemy in the body".[82]

Basically, the two narratives "cholera weakens" AND "inoculation strengthens" were both enforced and from now on could work together. Conviction of the efficacy and benefits of cholera vaccination gradually spread and improved the image of vaccination to such an extent that it was able to be established as a standardized, proven method in disease control. From the end of the war at the latest, it was retrospectively regarded in the mainstream of medical research as part of meaningful and significant modernizations of the sanitary system.[83]

8 Assessments from Today's Perspective

How should the actions of the Imperial and Royal Army in the First World War against cholera and the cholera vaccination debate be assessed in the context of today's knowledge and on the basis of the available source material? Even now, cholera has not been eradicated and occurs worldwide in places with insufficient access to clean water and sanitation, due to natural and humanitarian disasters such as refugee movements.[84] Areas affected include the Indian subcontinent, Central Africa, and South and Central America.[85] Based

82 Biwald, *Helden* 2, 523.

83 This extremely positive reception, as pushed by the military and medicine in a joint alliance, was ultimately able to prevail beyond the end of the war. Assessments of the cholera vaccination and its "innovative" effect by medical experts from the interwar period were often correspondingly favourable and liked to emphasize the progressive thinking and abilities of former Austrian front-line doctors, who perpetuated the narrative that vaccination against cholera was quickly declared standard procedure, without addressing the preceding two-year discussion. Sporadically, however, there seem to have been dissenting voices, even after the end of the war: in this context, the conviction is often expressed that it was not the vaccination but the cold climate that killed the pathogens of the disease and that cholera thus finally extinguished itself. Interesting here are isolated, retrospective reports from which it emerges that the conviction about the ineffectiveness of the vaccination had reached such a point that some doctors felt compelled to disregard the army's instructions and issue cholera vaccination certificates to soldiers without vaccinating them against the disease, in other words, falsifying them, Rudolf Rauch, IV. Das Feldspital auf der Jankuhöhe, in *Ärzte und ihre Helfer im Weltkriege 1914–1918, ed. Burghard Breitner* (Vienna: Göth, 1936), 148–55, here 154. The mainstream of the medical scene, however, considered the cholera vaccination a positive achievement by the end of the war, Pirquet, "Einleitung", 8.

84 WHO, Cholera.

85 Austrian Federal Ministry. Social Affairs, Health, Care and Consumer Protection on Cholera. Available online at https://www.sozialministerium.at/Themen/Gesundheit

on current knowledge, the World Health Organization (WHO) recommends a multi-faceted approach to combat cholera and reduce deaths in affected areas, which entails a combination of surveillance, ensuring safe drinking water, sanitation and hygiene measures, social mobilization, treatment, and prevention in the form of oral cholera vaccines.[86] According to the German Society for Tropical Medicine, Travel Medicine and Global Health, however, cholera vaccination is not indicated for most travellers, as the risk of contracting cholera for tourists from Europe and North America is estimated to be rather low.[87] What all health information institutions agree on is that vaccination cannot replace highly effective personal, food, and drinking water hygiene measures (for example, the use of bottled water). It should therefore be considered in addition to general hygiene measures. Cholera vaccination[88] can definitely be beneficial, especially for workers in refugee and disaster relief (for example, in water and wastewater treatment or in cholera treatment centres), and, furthermore, also for travellers to outbreak areas and remote areas over a longer period of time, under poor hygiene conditions, and without timely access to medical care (such as for workers on assignment after natural disasters).[89] Similar recommendations are made by the Austrian Federal Ministry of Health, which recommends that those intending to travel to affected areas consult a doctor several weeks in advance about all protective measures (including vaccination) and to discuss the right choice for them.[90]

From this current standpoint of knowledge, it seems justified that during the First World War in those western parts of the Habsburg Monarchy that were largely spared from military operations, and where favourable hygiene conditions and extensive access to medical care could be guaranteed, vaccination against cholera was not standard practice. However, the fact that the vaccination of soldiers was not carried out at a time close to mobilization (in some units it was delayed for months) cannot be justified epidemiologically.

/Uebertragbare-Krankheiten/Infektionskrankheiten-A-Z/Cholera.html, accessed 11 July 2023.

86 WHO, Cholera.

87 About 2–3 cases per 1,000,000 travellers, German Society for Tropical Medicine, Travel Medicine and Global Health e.V. on Cholera. Available online at https://www.dtg.org/index.php/empfehlungen-und-leitlinien/empfehlungen/impfungen/impfrisiko-aufklaerung/uebersicht-der-reiseimpfungen/247-cholera.html, accessed 11 July 2023.

88 Today, the vaccination is usually administered as two oral vaccinations at intervals of one to six weeks and, according to the Styrian epidemic plan, has a protection rate of 90 per cent, Odo Feenstra, ed., *Steirischer Seuchenplan* (Graz: Classic Verlag, 2016), 95. Available online at https://www.gesundheit.steiermark.at/cms/dokumente/11681099_72561200/51debcea/SP2016final.pdf, accessed 11 July 2023.

89 German Society for Tropical Medicine, *Cholera*.

90 Austrian Federal Ministry, Social Affairs, *Cholera*.

Even before the outbreak of the war, both civilian and military institutions were actively researching a wide variety of infectious diseases that would have suggested the usefulness of prophylactic vaccination, especially alongside the knowledge of the dense concentration of human masses that military operations brought with them through mass mobilization and flight. It was also known that on the Eastern Front, troops would often go to areas where unfavourable climatic conditions prevailed and access to medical care was difficult.[91]

In addition, difficulties also lay in the severely limited treatment options at that time. The danger of infection with cholera lies primarily in the rapid loss of fluid from the body through vomiting and diarrhoea. The most important component in the treatment of cholera is therefore the restoration of fluids, sugars, and salts to the patient as quickly as possible (today ideally with the help of an intravenous infusion)[92] in order to avoid organ failure and to remove the risk of death—an option that was not available to the large number of infected people on the Eastern Front in the First World War. The medical staff were often completely overwhelmed by the onslaught of sick people—in addition to the wounded.[93] The necessary rapid treatment of cholera required the continuous oral administration of sufficient fluids over several days to the patients who were falling ill in droves at the same time.[94] For the understaffed medical personnel, the (prophylactic) vaccination against cholera at the

91 Dietrich, "Tod", 256. Within the British and Ottoman armies, for example, cholera broke out in war zones in Mesopotamia and the Near East, due to similar, unfavourable conditions. Although research here also indicated similar problems in disease control, it described the control of typhoid, cholera, and also plague by British armed forces as successful, Mark Harrison, "War, Epidemics and Empire: British Military Government in the Middle East, 1914–18", *Journal of the Society for Army Historical Research* 18 (2018): 33–55.

92 During a cholera outbreak, rapid access to adequate treatment, which can reduce the mortality rate to less than 1 per cent, is essential. The WHO more specifically states that the majority of infected people can be successfully treated by immediate administration of oral rehydration solution (ORS) (WHO/UNICEF ORS standard sachet is dissolved in 1 litre (L) of clean water). Adult patients need up to six litres of ORS for moderate dehydration on the first day. Severely dehydrated patients are at risk of shock and require rapid intravenous fluid administration. They are also given appropriate antibiotics to shorten the duration of diarrhoea, reduce rehydration fluids, and shorten the amount and duration of cholera virus excretion in the stool. Mass administration of antibiotics is not recommended by the WHO as it has been shown to have no effect on the spread of cholera and may contribute to antibiotic resistance. For children under five years of age, zinc is recommended as an effective adjunctive therapy as it can shorten the duration of diarrhoea and prevent future episodes of other causes of acute watery diarrhoea, WHO, Cholera.

93 Angetter, *Krieg*, 89.

94 Biwald, *Helden 2*, 540–541.

earliest possible time would most likely have been beneficial as additional help.

Of course, given these events took place more than a hundred years ago, further considerations are speculative. An analysis that combines scientific methods with those of historical research could lend more depth to the context of the cholera vaccine debate and allow more reliable statements about the facts. For example, complementary tools from statistics, cell and microbiology, virology, historical meteorology, and archaeology definitely offer enormous potential in this regard. Without their contributions, however, the question of the scope of the epidemic in the context of the war, or how its course might have been changed had decision-makers and doctors reacted differently, must remain open.

9 Conclusion

As regards the analysis of dominant narratives in medical discourse, using the example of the cholera vaccination debate of the Imperial and Royal Army, this study can certainly provide an insight into the distribution of power between medicine and the military and argumentation strategies of the two groups for asserting their own interests in the context of the armed conflict of the First World War.

Thus, several orders indicate that medical reports were predominantly used to legitimize military interests and to construct targeted arguments to justify actions that had already been determined and to enforce the constantly changing military interests—an observation that confirms the current state of research and the "alliance between medicine and the military"[95]—with supremacy of the military—in the First World War, generally and also for epidemiology.

Additionally, as far as the learning process with respect to vaccinations during the First World War is concerned, a change in narratives did not simply happen rationally in accordance with facts or scientific knowledge. Rather, change was more likely to happen when facts and scientific knowledge fitted the ever-shifting interests of military leaders, who played out different

95 Dietrich-Daum refers here to Mark Harrison's review of publications in the field of the history of medicine in 1996 under the title "The Medicalization of War–The Militarization of Medicine", Dietrich-Daum, *Medizin*, 195; Mark Harrison, "The Medicalization of War–The Militarization of Medicine", *Social History of Medicine: The Journal of the Society for the Social History of Medicine*, vol. 9, 2 (1996), 267–76.

narratives strategically depending on the situation and risked higher long-term losses in favour of short-term goals.

Using the specific example of cholera, it has been possible to observe that when the military realized that the containment of the infectious disease ultimately involved vaccination, they presented it in retrospect as an effective weapon against the "enemy within".[96] In this sense, the touting of the "victory" over cholera points to the army's attempt to present itself as a modern and progressive army equal to the difficult situation,[97] although research has long since shown that neither the military nor medicine were sufficiently prepared for the unknown, catastrophic dimensions of the First World War[98]—nor against the cholera epidemic on the Eastern Front.

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96 Michaela Scharf, "Medizin im Ersten Weltkrieg. Der Krieg als Laboratorium", *Der Erste Weltkrieg*, https://ww1.habsburger.net/de, accessed 5 February 2023.

97 Of course, this new view was also sufficiently instrumentalized. The topos of the "victory march" of (military) medicine against infectious diseases was frequently taken up by the medical scene far beyond the end of the First World War, often also to compensate for the unpleasant role of the war loser and to strengthen national and professional self-confidence with the narrative that "at least one had won against the enemy within" and had at least advanced the progress of medicine, Stiglbauer, "Report", 93–99; Breitner, *Ärzte*.

98 Dietrich, "Tod", 257.

Biwald, Brigitte. *Von Helden und Krüppeln: Das österreichisch-ungarische Militärsanitätswesen im Ersten Weltkrieg. Teil 2.* Vienna: öbv & hpt, 2002.

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CHAPTER 7

Macedonia as a Challenge to the Medical and Humanitarian Efforts of the Allied Armies on the *Front d'Orient*, 1915–18

Gwendal Piégais

In spring 1917, General Diterichs wrote the following to General Sarrail, head of the Allied armies in Macedonia:

> Of the 12,000 men I brought from Russia and received here as reinforcements, during these eight months of military operations, I have lost up to 4,400 men, either killed, wounded, or injured, in addition to 8,000 sick men now in hospitals. The numbers speak for themselves. It is my honour to request you to order my brigade back to the rear of the front line for the summer.[1]

Mikhaïl Diterichs was commanding one of two Russian brigades operating in Macedonia (northern Greece)—on the *front d'Orient*[2]—as part of a coalition force led by the French general Maurice Sarrail. Arriving in the summer of 1916, 24,000 Russian soldiers had to face Germans, Austro-Hungarians, and Bulgarians, but also a harsh terrain and malaria. This chapter explores how Russian forces handled the environmental factor of the Macedonian front based on French and Russian archives (French military archives in Vincennes, and Russian military archives in Moscow). The rough environmental context of this theatre became a major cause of erosion of the Allied forces. In 1917, three-quarters of Russian losses were due to malaria, and many soldiers were subject to evacuation.

The Russian experience was very similar to that of other armies. And the Allies' efforts to adapt to the Macedonian environment has already been the

1 Service Historique de la Défense, Vincennes (SHD), 16 N 3139, General Diterichs to General Sarrail, 18 May 1917.

2 In this article, we will refer to the Macedonian front as the *front d'Orient*, and to Thessaloniki as Salonika, as these expressions were common in the documentation of the Allied contingent.

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subject of several in-depth studies.[3] But the Russian perspective allows us to link environmental, medical, and health issues to other problems that have been neglected in the study of malaria on the Macedonian front: discipline, diplomacy, and politics.

Adapting to this environmental context was indeed a technical and material challenge, but also a political one. The Russian forces in Macedonia lacked logistic autonomy and health supplies. Therefore, they often relied on French resources. This situation sparked many tensions between the two commands, which were both struggling with disease outbreaks and a hostile territory. It turned into an issue of sovereignty. Moreover, being able to contain disease and control the Macedonian environment was part of an older Russian diplomatic agenda. For Petrograd, it was a question of presenting itself as a restorative and benevolent power on the Macedonian front. From a soldier's point of view, the sanitary situation, and the very nature of the terrain they faced became major arguments for a call back to Russia. Fighting under those conditions was deemed unjust. This article will help to put the environmental factor back at the heart of the mutinies that swept through the Allied armies in Macedonia in 1917. Nature disrupted the war effort on the *front d'Orient* in many ways for all Russian and Allied forces.

1 A "*Guerre d'Orient*" in Macedonia

A Franco-British coalition army landed in Salonika (Macedonia, northern Greece) in October 1915. They came to rescue the Serbian army. The Bulgarian and Austro-Hungarian armies had pierced their defences. After the Serbian army's evacuation on the shores of Albania, the operation got bogged down and turned into a de facto occupation of Macedonia. Serbian, Russian, and Italian forces, and Greek troops of the Venizelos government quickly joined the Franco-British force,[4] but this contingent soon faced an enemy just as formidable as the Bulgarians.

The Macedonian terrain was a testing challenge for the troops. The Russian soldiers had to fight on snow-covered peaks as well as in valleys where

3 For a recent, comprehensive overview of these issues, see the study by Léna Korma, *Combattre pour la santé: L'Armée d'Orient et la construction du système sanitaire grec* [*Fighting for health: The Armée d'Orient and the construction of the Greek health system*], *1912–1922* (Athens: École française d'Athènes, 2022).

4 Max Schiavon, *Le front d'Orient: Du désastre des Dardanelles à la victoire finale. 1915–1918* (Paris: Éditions Tallandier, 2016), 128; Yannis G. Mourelos, *L'intervention de la Grèce dans la Grande Guerre* (*1916–1917*) (Athens: Institut Français d'Athènes, 1983), 24–25.

torrential rains brought water up to the soldiers' waists. The Russian-occupied front was also a logistical construction challenge that kept the brigades busy. This front literally had to be built. For more than two months during the winter of 1916–17, the 4th Russian Brigade worked on "repairing its lines and building roads to the rear for supplies of food and ammunition … in particularly difficult, rocky, mountainous terrain".[5] In order to avoid further losses, these works were mainly carried out at night.[6] Near the village of Budimirci, some Russian units, such as the 7th Regiment of the 4th Brigade, had to make do with tents on the outskirts of the villages, when the destruction of Macedonian houses was too extensive, or when they had not yet had the opportunity to set up a more solid camp.[7] The evacuation of the sick and wounded to the rear was often carried out in difficult conditions, most of the time by stretcher-bearers or soldiers who had to transport them several kilometres by hand. They had to go back down into the valleys or along rivers to reach a passable track, where the motorized ambulances took over.[8]

In most cases, the villages were emptied of their inhabitants during the Balkan Wars, as in the case of Cegel. A French doctor serving in the *armée d'Orient*, Marcel Bolotte, travelled to Brod "via Jakulevo, Ortahobo, Asanova", and described these localities as "small villages of brown earth of which only ruins remain from the Balkan Wars".[9] The town of Monastir (present-day Bitola)[10] was relatively well preserved, but the villages around it were destroyed by artillery, both Allied and Bulgarian. The Russians, Serbs, and French who settled in the villages closest to the front were an even more overwhelming presence for the villagers who remained in their homes, most of whom were women, old people, or young children. Several ethnographic surveys carried out by the *armée d'Orient* have shown that even in regions relatively spared from the fighting, the population density did not exceed 200 inhabitants per square kilometre in towns in Albania and Macedonia.[11]

5 SHD, 20 N 248, General Leont'ev, head of the 4th Russian Brigade to General Michaud, Allied Armies Chief of Staff, n°266, 13 February 1917.

6 SHD, 20 N 248, General Leont'ev, head of the 4th Russian brigade to General Michaud, Allied Armies Chief of Staff, n°266, 13 February 1917.

7 Éric Allart, Pierre Bernard, and Iljo Trajkovski, *Retour en Macédoine. Histoire, mémoire & archéologie du Front d'Orient* (Coulonces: Mémoire pour la vie, 2016).

8 Allart, Bernard, and Trajkovski, *Retour en Macédoine,* 59–66.

9 Marcel Bolotte, "Carnets de guerre 1914–1918", unpublished, 25 February 1917. http://www.atelca.fr/remy/transit/marcel/htm/carnet01-part1.html, accessed 24 September 2023.

10 I indicate in the text the place names as named in the sources, and in brackets the current place names.

11 Archives de l'École Française d'Athènes, PCP 32 5. Enquête ethnographique sur la région de Koritza, 1917.

This appropriation of the front line and its rear was achieved by building shelters or makeshift accommodation in unoccupied dwellings in the region, for example in the ruins of old villages. Recent archaeological and photographic evidence also points to the construction of cave dwellings.[12] Tents and drystone buildings were built on civilian ruins. In many cases, the officers' camps were set up between the few walls of dwellings still standing, which had been covered with a tent. Drystone terraces were used to increase the flat surface for ambulances.

The Allied troops were operating in a theatre where malaria was wreaking havoc among the local population and soldiers alike, due to the numerous lakes and marshy areas—natural breeding grounds for the malarial anopheles mosquito—where the troops were stationed. Communication routes from the port of Salonika to the front line followed the course of the Vardar River and its tributary, the Bregalnitsa. The latter flows through a marshy area before emptying into the Gulf of Salonika. On these routes, frequent stopping-off points such as Topçin (present-day Gefyra), Jenidze (Giannista), Vertekop (Skidra), and Ostrovo, on the shores of Lake Vegoritida, were frequent areas of infection. In addition to swampy areas, the parasite had also spread to the ruins of the Balkan Wars: uncultivated farmland, stretches of stagnant water, and abandoned villages. In these zones, the abundance of mosquitoes and a large reservoir of people who acted as hosts for the malaria parasite, many of whom were asymptomatic on account of immunity acquired in childhood, accelerated the proliferation.[13]

During the first phase of their campaign (winter 1916–17), the Russians advancing with the French troops thought they were spared. Many of them were fighting in the mountains, where climatic conditions prevented the development of the anopheles mosquito responsible for malaria's transmission. Doctors were initially concerned about the injuries and respiratory illnesses caused by altitude. But malaria soon returned to the top of the agenda. The French chief physician at Evacuation Hospital No. 1 in Salonika, Dr Frémicourt, sent an alarming report to the Russian command, detailing hospitalizations from 15 August 1916 to 28 February 1917. It indicated a total of 6,427 evacuations of Russian soldiers and officers.[14] The Russian forces comprised a maximum of

12 Allart, Bernard, and Trajkovski, *Retour en Macédoine*, 106.

13 R. Migliani, J.B. Meynard, J.M. Milleliri, C. Verret, and C. Rapp, "Histoire de la lutte contre le paludisme dans l'armée française: de l'Algérie à l'Armée d'Orient pendant la Première Guerre mondiale" [History of the fight against malaria in the French army: from Algeria to the Army of the Orient during the First World War] *Médecine et Santé Tropicales* 24, no. 4 (2014): 349–61.

14 Rossijskij Gosudarstvennyj Voenno-Istoriceskij Arhiv, Moscow (RGVIA), fond, 15237, op. 1, del. 6, lis 105, doctor major, 2nd class A. Frémicourt, chief doctor at the HOE No. 1 to

24,000 men. From April onwards, the incidence of the disease soared—May–October 1917 was a season that severely shook Allied troops. Sarrail's concerns ended up echoing those of Diterichs in the above-mentioned report: in the summer of 1917, the French general informed the Minister of War that the Russians were "heavily affected by [disease] and need to be supported".[15] Monthly reports from the evacuation hospitals regularly underlined this high proportion of sick soldiers. On average, only a quarter of evacuees were wounded over the period stretching from October 1916 to September 1917.[16] An overwhelming majority, three-quarters of them in fact, were sick. Having just returned to the alarming figures for February and March 1917, Frémicourt adds that the total number of "Russian evacuees at Evacuation Hospital No. 1 is 7,549 [men] to date [1 April 1917]".[17]

This magnitude of sickness is in no way unique to the Russians. Such high rates of troop immobilization were the norm on the *front d'Orient*. The Allied armies in Macedonia were conducting an expedition that had all the hallmarks of a 19th-century war, where the health campaign was as decisive as the manoeuvres at the front. It was as if the Allies had suddenly landed on the battlefields of the Balkan Wars (1912–13). Typhus, plague, and cholera had resurfaced during these conflicts. Indeed, it was the latter disease that stopped the Bulgarian army at the gates of Constantinople.[18] The ravaging of the battalions in Macedonia sent the doctors who landed in Salonika back to the logistical challenges of the Crimean War, itself called the *Guerre d'Orient* in its time.[19] Firmin Duguet, in *Le Service de santé militaire 1914–1918*, pointed out that in the "plains of Macedonia … the Allied armies experienced a sanitary situation worthy of another age or another war". This health and environmental divide

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General Artamonov, head of the Russian base in Macedonia ; RGVIA, f. 15237, op. 1, del. 6, lis 70, Evacuation Hostpital No. 1, January–March 1917.

15 Service Historique de la Défense, Vincennes (SHD), 16 N 3048, General Sarrail to War Minister, 15 August 1917.

16 List drawn up based on health reports from the *Armée d'Orient* in the SHD's collections, 5 N 110, 5 N 331, 16 N 2903.

17 RGVIA, fond 15237, op. 1, del. 6, lis 70, 1 April 1917.

18 Vincent Viet, *La santé en guerre, 1914–1918: Une politique pionnière en univers incertain* [Health at war, 1914–1918. A pioneering policy in an uncertain world] (Paris: Presses de Sciences Po, 2015), 454.

19 Jean-Jacques Arzalier, "Les services de santé face à la guerre de Crimée (1854–1856). Étude comparative de la prise en charge sanitaire des armées britanniques et françaises en Orient" [Health services in the face of the Crimean War (1854–1856). Comparative study of the health care of the British and French armies in the Orient], in *La santé des populations civiles et militaires: Nouvelles approches et nouvelles sources hospitalières, XVII^e^–XVIII^e^ siècles* (Villeneuve d'Ascq: Presses universitaires du Septentrion, 2010).

furthered a lasting assimilation of the Balkan theatre with colonial campaigns in the minds of the *armée d'Orient*'s officers and doctors.[20]

Between May and December 1916, the Allied troops were already facing an epidemic onslaught on an unprecedented scale: 94,203 men were hospitalized, 1,138 deaths from infectious diseases were recorded, and no fewer than 38,886 combatants were evacuated to France. The total figure for the October 1915–November 1916 period was 41,431 evacuees out of 94,000 men. While several epidemics were undoubtedly involved (exanthematic typhus, cholera, typhoid fever, dysentery, diarrhoea, dengue fever), malaria was the most prevalent: 13,696 cases with 330 deaths between November 1915 and 20 September 1916.[21] The British troops alone recorded 162,517 cases (with 787 deaths) from October 1916 to the end of the war. Some 34,762 British soldiers were invalided from the theatre, many of whom were incapable of further active service. In 1916, the French army had only 20,000 men, out of 120,000, capable of active service; there were 60,000 admissions to hospital due to malaria out of 115,000 troops, equivalent to 85 per cent of the army.[22] The health war waged against malaria was one of the major differences that distinguished the Macedonian front from other theatres: on the Western Front, only 5 per cent of immobilizations were due to illness, whereas in Salonika this rate reached 95 per cent at the height of the malaria peak. The collapse of the *armée d'Orient* was sufficiently worrying to prompt the French government to take drastic measures. In November 1916, two malaria specialists, brothers Edmond and Étienne Sergent, were called in from the Pasteur Institute in Algiers. Their mission was "to draw up a plan for an anti-malaria campaign".[23]

This intervention by doctors who had tried and tested their anti-malarial techniques in North Africa was part of what John Horne called "unintended colonialism".[24] The *armée d'Orient* was faced with a territory lacking

20 Viet, *La santé en guerre*, 501.

21 Ibid., 504.

22 Bernardino Fantini, "Malaria and the First World War", in *Die Medizin und der Erste Weltkrieg*, ed. Wolfgang E. Eckart, and Christoph Gradmann (Pfaffenweiler: Centaurus, 1996), 243–59; Mark Harrison, "Malaria and the Salonika Campaign", in *The Macedonian Front, 1915–1918. Politics, Society and Culture in Time of War*, ed. Basil Gounaris, Michael Llewellyn-Smith, and Ioannis Stefanidis (London: Routledge, 2022), 108–9.

23 Anne Rasmussen, "La Grande Guerre prophylactique. Armée, santé et citoyenneté en France, 1914–1918" (habilitation mémoire, Université de Strasbourg, 2014), 82; Viet, *La santé en guerre*, 507.

24 John Horne, "Unintended Colonialism? The Armée Française d'Orient and Macedonia", in *The Macedonian Front 1915–1918: Politics, Society and Culture in Time of War*", ed. Basil Gounaris, Michael Llewellyn-Smith, and Ioannis Stefanidis (London: Routledge, 2022), 28–37.

infrastructure, with a rough terrain, and where the land was abandoned after the Balkan Wars. The French and the British deployed a considerable logistical effort to develop and rehabilitate the territory. Macedonia was gradually transformed into an archipelago of worksites designed to make the war theatre practicable. Several waterworks were set up to meet the needs of villages, hospitals, and encampments. In all, more than 600 water sources were tapped, more than 240 wells dug, and 4,000 drinking troughs and 1,000 reservoirs renovated or built by the French army. A military road service rehabilitated or established more than 900 kilometres of tracks and roads.[25] As early as 1919, the army's worksites were described as a "civilizing" endeavour, in praise of "France's great work in Macedonia". This praising formula was a direct reference to the work to develop the European colonies.[26] This similarity between the way Macedonia was ocupied and the practices of European settlers in their colonial empires is no coincidence. The *armée d'Orient* was a colonial army because of the origin of the troops mobilized (soldiers from Africa, colonial battalions, Zouaves, Senegalese riflemen, etc.), and by virtue of the colonial experience of the senior officers and generals at the head of the contingent. Moreover, the material situation of Macedonia and the cultural divide faced by French troops in this post-Ottoman territory (which had only been Greek since 1912), accentuated the feeling of Western superiority. These men practiced situational colonialism: in a context of waiting, of a long war, the French army used tried-and-tested colonial methods to deal with the problems encountered in Macedonia. On the sanitary front, faced with environmental constraints like those of the colonial empire, the French transferred practices from one shore of the Mediterranean to the other: draining of marshes, vaccination campaigns for populations, quininization of troops, etc.

25 Paul Malaquin, "L'œuvre civilisatrice de l'armée française en Macédoine" [The civilizing work of the French army in Macedonia], *Bulletin de la société des sciences historiques et naturelles de l'Yonne* (Auxerre: 1919), 4–7.

26 Olivier Le Cour Grandmaison, "De l'extermination à la mise en valeur des colonies: le triomphe de l'exception française (1885–1931)" [From extermination to the development of the colonies: the triumph of the French exception (1885–1931)], in *Nouvelle histoire des colonisations européennes* (*XIX^e^–XX^e^ siècles*)*: Sociétés, cultures, politiques,* ed. Amaury Lorin (Paris: Presses Universitaires de France, 2013), 153–66; Alice L. Conklin, *A Mission to Civilize: The Republican Idea of Empire in France and West Africa, 1895–1930* (Stanford: Stanford University Press, 1997); Romain Tiquet, *Travail forcé et mobilisation de la main-d'œuvre au Sénégal: Années 1920–1960* [Forced labor and workforce mobilization in Senegal: Years 1920–1960] (Rennes: Presses Universitaires de Rennes, 2019).

2 Allied Sanitary Effort as a Tool of Influence

Despite the modest size of the Russian contingent, the medical, and sanitary stakes went far beyond the health of combatants. The campaign in the Macedonian theatre gave Russia the opportunity to present itself as a healing power and a member of the civilizing club in this Macedonia abandoned to nature. Russia and the Allies mobilized cinematic and photographic propaganda to promote these efforts. Films were shown in Western Europe and Russia, and photography published in the illustrated press. In the film *Service de santé, armée d'Orient, hôpital princesse Léon Narischkine à Salonique*, the film makers showed images of a hospital, presented as Princess Narischkine's hospital.[27] The film was constructed as a "visit" to one of the Allied health services' centres in Macedonia. After the "Operating Room" intertitle, the spectator could see a wounded soldier arrive on the garden path, carried on a stretcher as men look on. The stretcher enters a barracks with the inscription, to the right of the door, "No Entry, Operating Room". Like other films made by Pathé for the *Service de santé des armées*, the viewer accompanies the soldier from injury to treatment, and eventually to departure for France, where the most serious cases continued their convalescence.[28] The film focused on one character, Princess Narischkine, a leading figure of the Russian aristocracy. An intertitle described her as being "day and night at the bedside of the wounded". She assisted a surgeon operating on the wounded limb of a man. New shots then emphasized the good care lavished on the men staying at Narischkine Hospital: "The Visit" showed men bedridden in a barracks, being examined by doctors and nurses. During the two shots of "The Refectory", smiling seated soldiers were generously (in terms of rations) served by a canteen worker. The next shot—"Greek children come to pick up the crumbs"—showed 20 or so children crowding around the hospital wall. The canteen workers hand out dozens of pieces of bread. In just a few shots,

27 ECPAD, *Service de santé, Armée d'orient, hôpital princesse Léon Narischkine à Salonique (1916)*. [Health service, Eastern Army, Princess Léon Narischkine hospital in Salonika], https://medfilm.unistra.fr/wiki/Service_de_sant%C3%A9,_Arm%C3%A9e_d%27orient,_h%C3%B4pital_princesse_L%C3%A9on_Narischkine_%C3%A0_Salonique_(1916), accessed 19 September 2023.

28 ECPAD, A 879, *En péniche sur la Somme avec nos alliés, 1916* [On a barge on the Somme with our allies, 1916]; ECPAD, A 885, *Le Service de santé de la 6e armée pendant la bataille de la Somme* [On a barge on the Somme with our allies, 1916; ECPAD, A 885, The Health Service of the 6th Army during the Battle of the Somme], Pathé, 1916.

the film praises the quality of the hospital offering the best to its patients, and even offering the surplus to a needy Greek population. These images of bread distribution served to reinforce the image of the *armée d'Orient* on a civilizing and humanitarian mission in the Balkans.

The film emphasized efficient care and convalescence, provided in the elegant setting of the neoclassical palace, surrounded by a beautiful, quiet garden. This setting was the antithesis of the hostile environment that newsreel viewers were accustomed to seeing when Macedonia was shown on screen. The hospital film was part of a corpus of *front d'Orient* images. This vast corpus featured a hostile and/or exotic Macedonia, composed, for example, of swampy valleys, where soldiers ventured down the Vardar River.[29] These troops were portrayed as colonial contingents exploring dangerous Macedonian waterways. Such a film was intended to reinforce a narrative presenting Allied action as beneficial in war-torn, disease-ridden Macedonia, as was a series of photographs from the army's photographic service, showing the princess with Justin Godart (French Minister of Health) visiting Macedonia in 1917, or in the company of Prince Alexander of Serbia, visiting the Russian hospital. This use of royal figures in inter-Allied health storytelling also echoed the codes applied to a whole range of propaganda related to European sovereigns in the illustrated press and filmed newsreels.[30] During the Great War, Empress Alexandra Fyodorovna, Queen Elisabeth of Belgium, and Queen Marie of Romania were portrayed as nurses at the bedside of the wounded, or as directors of hospitals for soldiers, for example.[31]

Behind this calm and functional image lies the much more tense reality of health and environmental challenges facing the Allied armies in Macedonia.

29 ECPAD, *À l'Armée d'Orient. Dans les ajoncs du Vardar* [To the Army of the Orient. In the gorse of Vardar],14.18 A 759, 1916.

30 Ministère de la Culture (France), Médiathèque de l'architecture et du patrimoine, diffusion RMN-GP, APOR058222, "Les hôpitaux du camp retranché de Salonique (SD). Visite de l'hôpital Narischkine: Le Prince Alexandre de Serbie et la Princesse Narischkine" [The hospitals of the entrenched camp of Salonika (SD). Visit to Narischkine Hospital: Prince Alexander of Serbia and Princess Narischkine].

31 Boris Kolonitskii, *"Tragičeskaja èrotika": Obrazy imperatorskoj sem'i v gody Pervoj mirovoj vojny* ["Tragicheskaya Erotika": Images of the Imperial Empire in the years of the First Peace War] (Moscow: Historia Rossica, 2014); Auguste Félix de Beaupoil de Saint-Aulaire, *Confession d'un Vieux Diplomate* [Confessions of an old diplomat] (Paris: Flammarion, 1953), 360; Laurence van Ypersele, *Le roi Albert: Histoire d'un mythe* [King Albert: History of a myth] (Loverval: Labor, 2006), 188; Evguenia Davidova, "Monarchism with a Human Face: Balkan Queens and the Social Politics of Nursing in the Late Nineteenth and Early Twentieth Centuries", *Comparative Studies in Society and History* 64, no. 3 (2022): 788–819.

This Russian hospital had been in operation in Thessaloniki since 1909, in the city's south-eastern districts, on the outskirts of Queen Olga Avenue, outside of the old town. The elegant estates of the Salonikan bourgeoisie were in this neighbourhood, where several Allied hospitals and headquarters were established, such as Temporary Hospital No. 2, known as the Princess Marie, or the Scottish Women's Hospitals. Later, other French temporary hospitals, such as Hospital No. 4, moved into the area. The conversion of this hospital, initially reserved for the Russian community and diplomatic servants in Macedonia, into a facility for soldiers predates the arrival of the brigades. In December 1915, the Russian consul general in Salonika informed the Russian Ministry of Foreign Affairs of the opportunity to organize assistance for Serbian refugees in Salonika's Greek hospital, St Dimitri. The Ministry of Foreign Affairs brought Professor Sergei Sofoterov and several Russian Sisters of Charity from Serbia.

Sofoterov had previously been based in Niš, where he oversaw Russia's medical support for Serbian civilians. During the Great War, Russian medical units intervened in Serbia, Romania, and Montenegro. When Belgrade was evacuated, and the administration moved to Niš, Russia deployed several ambulances and units of Russian doctors and nurses there. The refugees' poverty and the overcrowding and unsanitary living conditions led to the rapid development of typhus and smallpox epidemics, increasing the population's death rate. The Russians therefore gave priority to setting up special infectious units.[32] Petrograd's support was provided in close collaboration with Russian elites who supported Russian intervention in the Balkans. Prince Trubetskoi, Russian Minister Plenipotentiary in Serbia, and his wife played a very active role in the organization of humanitarian and charitable activities in Serbia and Montenegro. The many places where Russian aid was deployed in Serbia became a showcase for Russian benevolent action in the Balkans. This Russian preponderance in the sanitary management of Serbia's war capital even had an administrative consecration: in February 1915, Sofoterov took charge of the sanitary organization of the city of Niš, and of all Russian medical detachments in Serbia. In this capacity, he was tasked by Trubetskoi and the Serbian government with rethinking the management of the typhus epidemic in the region. By order of the Russian Foreign Ministry, he was assigned to the Serbian Supreme Command, and the Russian Red Cross made him its delegate in

32 Galina Ševcova, "Dejatel'nost' komiteta pomošči Serbam i Černogorcam (konec 1914–Oktjabr' 1915 g.)" [The activities of the Committee for the Relief of Serbs and Montenegrins (end of 1914–October 1915)], *Istorija i arheologija*, no. 6 (2020): 114.

Serbia. He even went so far as to take a seat on the municipal council of the war capital.

Once in Salonika, Sofoterov received funds from the Russian Red Cross to upgrade the Russian hospital's equipment. This hasty conversion was also made possible by the diversion of Russian medical aid destined for Serbia. Thus, at the end of July 1916, the Russian ambulance known as the Serbian Sanitary Detachment of the Petrograd Slavonic Benevolent Society, which arrived in Corfu, was immediately redirected to the Russian hospital in Salonika.[33] Russian humanitarian and medical activity on the *front d'Orient* must therefore be seen in the *longue duréee* of Russian aid to its Balkan allies.[34] Sergei Sofoterov, now head of the Russian hospital in Salonika, was the perfect embodiment of Russia's investment in medical and sanitary support for Serbia. And, more generally, he was a key player in Russian action in the region, considered to be an expert, not to mention a veteran of Russian humanitarian interventions in the Balkans. His action and regular presence in the region dated back to the Balkan Wars, when he worked for the Russian Red Cross among Serbian soldiers in Skopje, in the Scutari region, and finally in Salonika, until 1913.[35]

The anteriority of this Russian humanitarian investment in the region helps us to understand the medical action on the *front d'Orie*nt. French and Russian activities were understood as a vector of influence in the Balkans. Commenting on the action of French medical personnel, who were also sent to work alongside the Serbian army, Dr Didier Corvisy spoke of a theatre where France projected its influence when he said that thanks to this medical support, "the Serbs learned to esteem us, and it will not be the least of the glories of the French medical corps [that] they were able to make our country appreciated in these regions where we were little known."[36] When Greece entered the war alongside the Allies, French doctors were already drawing up plans to

33 SHD, 7 N 612, head of the French military Mission française in Corfou, 30 July 1916; RGVIA, fond 15237, op. 1, del. 32, lis 12, Petrograd to Russian commander in Macedonia, 16 September 1917.

34 Andrew J. Ringlee, "The Romanovs' Militant Charity: The Red Cross and Public Mobilization for War in Tsarist Russia, 1853–1914" (PhD diss., University of North Carolina, Chapel Hill, 2016); Adele Lindenmeyer, "The Ethos of Charity in Imperial Russia", *Journal of Social History* 23, no. 4 (1990): 679–94.

35 Galina Ševcova, "Sofoterov i Rossijskoe Obščestvo Krasnogo Kresta v Serbii (1910–1940 gody)" [Sofoterov and the Russian Red Cross Society in Serbia (1910–1940)], *Novaja i Novejšaja Istorija*, no. 6 (2020): 192.

36 *Science et dévouement: le Service de santé, la Croix-Rouge, les œuvres de solidarité de guerre et d'après-guerre* [Science and dedication: the Health Service, the Red Cross, war and post-war solidarity works] (Paris: Aristide Quillet éditeur, 1918), 316.

consolidate French medical and sanitary influence in Greece and "spread French science and discoveries in the *Orient*".[37]

At the beginning of 1918, the Allied—and particularly French—health effort was gaining momentum: when Henri Fournial was appointed Chief of the Health Service of the *armée d'Orient* in February 1918, he said that the city of Salonika alone had around 18,000 beds in 20 hospitals. But Russian humanitarian and health efforts in the Balkans stalled and collapsed after the February and October revolutions. Petrograd's gradual disinvestment in the Balkans was immediately apparent in the tense exchanges between prominent actors on the sanitary and medical front, such as Sofoterov, and his superiors at the Russian Ministry of Foreign Affairs, at the War Ministry, or at the *Stavka* (headquarters of the supreme commander of the Russian armed forces). The necessary resources were not made available to the staff to meet the needs of the 24,000 Russians fighting in this theatre. Sofoterov was director of the Russian hospital in Salonika, as well as representative of the Russian Red Cross on the *front d'Orient*. But despite his high position in the hierarchy, he was struggling to mobilize the necessary resources. The Russian Ministry of Foreign Affairs only granted 1,000 francs per month to the Salonika hospital, i.e. 12,000 francs a year, while the total expenditure amounted to 18,000 francs for one month alone.[38] Sofoterov worked with General Artamonov and the Russian consulate in Salonika to get the Russian War Ministry to share the financial burden, but often in vain.[39]

As historian Joshua S. Sanborn has demonstrated, physicians serving in Russian military hospitals during the Great War often found themselves in a paradoxical situation. These practitioners held the highest rank in the hierarchy of hospital personnel, and often had to improvise as housekeepers, stewards and, above all, good leaders and even politicians.[40] In Macedonia, Sofoterov adopted the role of diplomat. In his dealings with the Russian Foreign Ministry, as with the generals, he defended the need to increase the budget for medical

37 Archives du Ministère des Affaires étrangères, Nantes, 48/PO/A/279, Georges Portman, Rapport sur la Propagande universitaire et médicale en Grèce [Report on academic and medical propaganda in Greece], 3, quoted by Lena Korma, *Combattre pour la santé: L'Armée d'Orient et la construction du système sanitaire grec, 1912–1922* (Athens: École française d'Athènes, 2022), chapter VI.

38 RGVIA, fond 15237, del. 6, lis 182, General Artamonov to Russian brigades' commanders, 4 January 1917.

39 RGVIA, fond 15237, del. 6, lis 182, General Artamonov to Russian brigades' commanders, 4 January 1917.

40 Joshua S. Sanborn, *Imperial Apocalypse: The Great War & the Destruction of the Russian Empire* (Oxford: Oxford University Press, 2014), 151.

aid to soldiers.[41] He did so because the structures he governed were unable to absorb the flood of sick arriving from the front. But also because he understood his work in caring for the wounded and combating the spread of malaria on the *front d'Orient* not as a purely medical action but as an instrument of "prestige" and "influence"—in his own words—for the Russian Empire.[42] And it is indeed in terms of rank, and in comparison with other Allied nations, that the Russian consul in Salonika assessed Sofoterov's real success. The consul general, V. Kahl, stated that Russian doctors "did everything they could to help this good cause and bring our hospital up to the right standard". He went on to state, "I am proud to say that our hospital is one of the best, not only in Thessaloniki, but on the entire Macedonian front."[43]

This issue of prestige was once again reflected in the efforts of Allied propaganda to show the effectiveness of French and Russian doctors, notably through photography. Numerous shots produced by the photographers, and published in the Allied illustrated press, showed the figure of the regimental doctor providing care to the soldiers. This is particularly true of photographs taken, for instance, in autumn 1916 in the village of Ano Klines, where several soldiers lined up to have their wounds examined.[44] In these pictures, two women and two children were approaching the Russian doctor, and in the last photograph a young boy was being examined and bandaged by the doctor. Similarly, the series of photographs taken by the French army's photographer, for example, in February and March 1917, included numerous shots of vaccination campaigns for gypsies and Serbian refugees in the Salonika region. They were also pictured crowding the pharmacies of the *armée d'Orient*. Russian troops passed through villages where many inhabitants had fled. They also found themselves in areas where medical facilities were still rare outside of towns such as Florina or Monastir. The long sequence of wars, which began in 1911 with the Balkan Wars and continued with the arrival of Allied troops, only amplified the attraction of the material advantages brought by the *armée d'Orient*. Beyond these sanitary measures and this humanitarian action, this propaganda effort to stage the civilizing role of the *armée d'Orient* shows the

41 RGVIA, Fond 15237, op. 1, del. 6, lis 13–15, General Artamonov to Russian brigades' commanders, 21 April 1917.

42 RGVIA, Fond 15237, op. 1, del. 6, lis 182.

43 RGVIA, fond 15230, op. 1, del. 2, lis. 34–41, Russian Red Cross in Greece to Russian military agent in Paris, 25 June 1918.

44 Voir la série de photographies "La vaccination des Tziganes, février–mars 1917" [photographs "The vaccination of the Gypsies, February–March 1917"], *Ministère de la Culture, Médiathèque de l'architecture et du patrimoine* (*MAP*), APOR095271, APOR095268, APOR095265, APOR095269, APOR095263, APOR095301.

importance attached by the Allied contingents to representing themselves as restorative and healing powers in a beleaguered Macedonia.

3 Controlling Evacuation, If Not Ensuring it

Against this backdrop of epidemics, Russian brigades suffered more casualties from disease than from enemy fire. But the structures promoted by propaganda, such as the Narischkine Hospital, were soon unable to stem the flow of convalescents. The hospital even had to specialize in surgical interventions and integrate the Allied sanitary archipelago among other institutions.[45] Far removed from the Russian showcase that was the hospital, the Zeitenlik camp to the north-west of the city was a place of transit for many sick soldiers. Zeitenlik was the first major camp where French and British troops were stationed when they landed in Salonika in 1915. A French soldier described it as an "immense city, made up of tents of all shapes, colours and sizes, which proliferated from valley to valley as far as the indefinite horizon. … We were the new citizens of this strange city."[46] This spot had already sheltered the inhabitants of Salonika after the earthquake of 1902, the fire of 1910, and the cholera epidemics of 1911 and 1912. With the construction of the Salonika entrenchment camp, it gradually became home to a Serbian hospital and an Allied cemetery. It was one of the largest hubs for Allied soldiers in the Salonika region, and a de facto place of stay for sick soldiers.

Correspondence between the Russian and French general staffs highlighted the singular situation of the Russians: they only received the evacuees count, and the Russian generals could only increase hygiene measures within the units.[47] Brigade orders insisted on cleanliness of men and premises. Tents and semi-buried shelters (known in Russian as *zemlianki*) had to be cleaned and disinfected, and bedding straw changed whenever possible. Men had to shower regularly and change their clothes as often as possible. Prisoners and Macedonians assigned to work or sent to the rear underwent thorough scrubbing. Suspected cases went through a medical examination and were isolated,

45 Lena Korma, "La réponse de l'Armée d'Orient et de l'État grec à la crise sanitaire" [The response of the Army of the Orient and the Greek State to the health crisis], in Lena Korma, *Combattre pour la santé: L'Armée d'Orient et la construction du système sanitaire grec, 1912–1922* (Athens: École française d'Athènes, 2022), 83–109.

46 Francine Saint-Ramond, "*Salonique, le 'poumon' de l'armée de Macédoine*" [Salonika, the 'lungs' of the Macedonian army], in *Les Désorientés: Expériences des soldats français aux Dardanelles et en Macédoine, 1915–1918* (Paris: Presses de l'INALCO, 2019).

47 RGVIA, fond 15237, op. 1, del. 6, lis. 93, 13 March 1917.

their transfer totally forbidden.[48] The abundance of these recommendations in brigade agendas testifies to the helplessness of officers in the face of the onslaught of epidemic.[49]

General Diterichs was very concerned with the idea of building real autonomy for the brigades. As early as August 1916, he called for the creation of a rear medical unit, or even a structure managed by the Russian Red Cross, and he repeated these requests on numerous occasions.[50] Diterichs saw this as a practical issue, but also as an opportunity to maintain compartmentalization at troop level, and to enhance the prestige of his unit by demonstrating independence, even at the simple sanitary level. At this stage of the campaign, Russian dependence on French resources was such that even the works undertaken by the Russians to improve the water supply to their various camps remained constrained by French stewardship.[51] At first, Diterichs tried to group all evacuated soldiers, whether sick or wounded, in a single hospital. But in practice, the management of this unit was not entrusted to a Russian military doctor. Russian nurses provided in-patient care, and Russia was responsible for their recruitment and administration, but the doctors who ran operations relied entirely on the French organization.[52] A temporary Russian hospital was set up for the 4th Russian Brigade at the end of January 1917. In the end, however, it was no more than an aggregation of units already in place: the staff infirmary, the brigades' alpine ambulances, and the evacuation hospital were placed under the aegis of a divisional health service. Despite these efforts to provide the Russian contingent with medical and sanitary resources, the logistical and material situation at no time during the campaign enabled it to provide end-to-end care, treatment, and convalescence for the Russians. The Russians were treated in the same way as the Serbians: the excess number of sick men had to be evacuated to North Africa or to the south of France.

Men requiring fewer than six weeks' treatment could stay in Salonika's hospitals. Convalescents and "crippled" soldiers were first received at the depot of the Russian base in the Macedonian port. At the end of October 1917, the

48 Hoover Institution, Vrangel Collection (HI-VC), 12/4, prikaz n.31, 4th brigade, 16 February 1917, HI-VC, 17/10, prikaz n.42, 3rd Regiment, 22 February 1917.

49 HI-VC, 8/4, prikaz n.44, 2nd Brigade, 29 July 1917 ; HI-VC, 8/5, prikaz n. 60, 2nd Brigade, 14 August 1917 ; HI-VC, 8/7, prikaz n.119, 2nd Brigade, 14 December 1917 ; HI-VC, 11/11, prikaz n.114, 4th Brigade, 9 May 1917 ; SHD, 5 N 110, General Sarrail to War Minsiter, n.1516/3, 10 March 1917.

50 SHD, 7 N 390, General Sarrail to War Minister, 24 August 1916.

51 RGVIA, f. 15327, op. 1, del. 24, lis 35, Head of the *dépôt d'éclopés*, 4th Brigade, n.256, 26 May 1917.

52 SHD, 7 N 612, General Commander-in-Chief to General Sarrail, 23 July 1916.

Russian command managed to open a convalescent station in Bresnitsa (now Vatokhorion), followed by a second in Veria in early November.[53] Hospitalized patients whose full recovery required more than six weeks' care or convalescence, however, were evacuated by hospital ships to Toulon.[54] Convalescents suffering from contagious diseases were sent to Bizerte, by ships specially assigned to this task.[55] The French took care of this evacuation from Macedonia, but it crystallized numerous tensions between the Russian and French staff, and the troops.

As with supplies, troop, and equipment transfers, the *armée d'Orient*'s health chain straddled several shores of the Mediterranean. Men evacuated to Bizerte or southern France were quarantined before being transferred to hospitals. Any soldier evacuated to France for injury or illness had first to cross this sanitary frontier, which separated him from the treatment centres on the French mainland. In the circumstances, the *armée d'Orient* decided to increase hospital capacity in Macedonia (which reached 40,000 beds in 1918), gradually reducing the number of evacuations for illness to France. As historian Vincent Viet explained, this capacity-building effort was aimed primarily at solving the logistical and health problems, but also at maintaining the number of troops already deployed in Macedonia. The objective was not to confront new troops with the epidemic onslaught of the Macedonian plains, and not to provoke in France, through poorly controlled repatriation, a malaria epidemic with incalculable military consequences.[56] This health background partly explains the reluctance of political and military decision makers to facilitate leave and mass rotations on this front.

At the time of the first epidemic outbreaks suffered by Russian troops, the two brigades were unable to provide complete care for all wounded or sick soldiers. They had to rely on the Allies for the care, evacuation, and subsequent management of convalescents in France. The south of France was a real interface with the *front d'Orient*, welcoming both convalescent soldiers as well as Serbian troops training before going back to Macedonia. The Russians were generally confined to the coast, in towns such as La Seyne-sur-Mer and Cannes. In 1904–5, some of these towns were already a place of convalescence for Imperial Army officers following the Russo-Japanese War. The town of Cannes, for example, had had ten hospital sites since 1914. They were administered by the

53 SHD, 20 N 133, 2nd Russian Division, report from 1 to 15 November 1917.

54 SHD, 5 N 331, General Sarrail to War Minister, 16 March 1917.

55 SHD, 5 N 110, General Commander-in-Chief to General Sarrail, 25 July 1916.

56 Viet, *La santé en guerre*, 512–13.

army from 1916 onwards, and were often located in hotels or villas, or even the municipal casino.

Care for Russian soldiers from Salonika was organized from late summer 1916. All Russian evacuees from Salonika or Bizerte were hospitalized in the 15th or 16th military regions, notably at auxiliary hospital 109 in Marseille.[57] Despite assurances that convalescence would continue smoothly in France, the Russian command expressed numerous reservations about the procedure. Thus, as early as November 1916, Diterichs requested that:

> any troop member who, because of illness or injury, becomes unfit for service in combat units, but can nevertheless render services in non-combat units, be directed from the hospitals at the disposal of the health service of the *armée d'Orient* to the Veria march battalion.

He noted also that in this unit, troops would be "presented to a reform council composed of officers and physicians, in accordance with a special order from the Russian military administration".[58]

The various letters Diterichs sent to the French command were designed to prevent his men from being evacuated by the French sanitary commissions. After the initial fighting in Macedonia, and the first epidemic onslaught, the Russian generals feared that the men and their officers would be evacuated too quickly to France, with no reserves to compensate for the losses. General Leontiev, Diterichs's second-in-command, expressed similar concerns:

> In view of the conditions of the brigade entrusted to me, on a distant front, where the replacement of officers seems extremely difficult, it is necessary to treat the question of serving officers' evacuation with extreme caution, and to resort to such evacuation only in cases of absolute necessity.[59]

The evacuation of officers is what worried the Russian general. The loss of these cadres would force the Russian command to promote too many officers from the ranks, causing disciplinary problems. Keeping control of evacuations was also a political issue, in which the sovereignty of states was asserted. The Russian command did not argue over the need for medical withdrawals but was

57 SHD, 7 N 612, War Minister to General Sarrail, 30 July 1916.

58 RGVIA, fond 15237, op 1, del. 6, lis. 231, General Dietrichs to General Sarrail, 19 November 1916.

59 RGVIA, fond 15237, del. 6, lis. 210, Načal'nik 4th Russian Brigade, 20 December 1916.

clearly reluctant to leave the final word to the French. Russian generals took initiatives to dispute the prerogative of selecting evacuees with French medical commissions. Leontiev appointed "a special evacuation commission to the marching battalion, made up of members of the brigade's medical staff and specially authorized staff officers". Its members were to examine the officers and soldiers' health condition and rule again on their possible evacuation.[60]

The tense situation surrounding the control of evacuees reveals the anxieties of Russian generals and higher officers in Macedonia. Evacuation control bodies had a health and sanitary dimension, of course. But they also provided an opportunity for the Russian command to strengthen its prerogatives and regain control over the troops. Thus, in a letter to the commander of the 8th Regiment, General Artamonov returned to the case of a Lieutenant Novojilov.[61] The lieutenant wished to contest the rejection of his evacuation request. The Russian commission had cancelled his evacuation—a medical decision taken by the French doctors—in March 1917. Artamonov stated that he had presented his case to the Russian hospital in Salonika. The Russian doctors "established the unfounded nature of Lieutenant Novojilov's statement that he had been treated at the hospital for malaria." In his letter to the commander of the 8th Regiment, Artamonov confirmed that the lieutenant did not need to be evacuated and went so far as to forward a detailed account of the examinations the lieutenant had undergone at the Russian hospital. General Artamonov, a member of the evacuation commission, thus painted a picture of an officer desperate to shirk his duties. He went so far as to accuse him of malingering: unjustified complaints, unverifiable symptoms, refusal of treatment, simulated pain during auscultation, and so on. In the absence of the doctors' reports, or even a medical file, it is hard to say whether the lieutenant was indeed in "enviable general condition", as Artamonov claimed. But these disputes, along with the Russian general's investigative efforts, reveal the tension surrounding manpower control in Macedonia. What's more, Artamonov's letter to Novojilov's superior, and his detailed account of the officer's alleged simulations, reveal the disciplinary nature of what on the face of it seemed to be a matter of sanitary procedure.

Several reports from regimental commanders indicated that many officers were criticizing the harmful consequences of reintegrating sick and

60 RGVIA, fond 15237, op. 1, del. 6, lis 210, Commander of the 4th Russian Brigade to the District Commander of the City of Salonika, 7 December 1916.

61 RGVIA, fond 15237, op. 1, del. 6, lis. 64, 24 mars 1917, General Artamonov to Head of the 8th Regiment.

convalescent soldiers into the ranks. When the march battalion commander welcomed soldiers back into the ranks, he informed General Artamonov that:

> the soldiers [arriving from the hospital] are in very bad shape, both morally and materially: [they] are not completely cured, and the dissatisfied convalescents are deprived of decent barracks or beds, whereas for many of these men these amenities are, for health reasons, still necessary.[62]

The material situation of these troops, released from the ranks and then sent back to the marching battalion, even though they had not completed their convalescence, "greatly affects their morale, [and] many soldiers feel forgotten",[63] added the commandant. The different reports highlighted the paradoxical attempt to regain control of the evacuation: for fear of seeing the brigades' numbers melt away on Macedonian territory, their commanders were reintegrating into the ranks men who could cause more trouble for the war effort. Added to this, throughout the command's correspondence, was a shared concern that Russian officers would be evacuated too quickly. The sight of this haemorrhaging of manpower only strengthened the commanders' worries as 1917 progressed.

At a time when the troops were particularly hard hit by epidemics, a *soviet* (council) of Russian soldiers in Macedonia met. From 15–20 June 1917, the men gathered in assemblies, as it was authorized after the February Revolution. These meetings were an opportunity for many soldiers to present their demands to the command, or even to address them to Petrograd. Among these demands, medical and sanitary issues took centre stage:

> The barracks [where the regiments had been housed at Zeitenlik] began to fill up with crowds of seriously ill soldiers. … In the battalions, malaria is raging, constantly aggravated by bloody, brutal diarrhoea spread by mosquitoes. Malaria was known [to doctors], but not everything was done to protect soldiers from bites. Mosquito nets were issued to Russian soldiers, but only in one brigade, ten months after their arrival on the Salonika front, when other armies already had them. Regimental accommodation was of dubious cleanliness; in the barracks, patients lay in their

62 RGVIA, fond 15237, op. 1, del. 6, lis 30–31, Head of the march battalion at the 4th Russian Brigade, 8 April 1917.

63 RGVIA, fond 15237, op. 1, del. 6, lis 30–31, Head of the march battalion at the 4th Russian Brigade, 8 April 1917.

> dirty laundry directly on the floor. Russian doctors began to worry about the installation of proper rooms in the regiments, writing about it in their reports [which give] a nightmarish picture of the situation of Russians in these medical establishments.[64]

The *soviet* proclamation gave a detailed account of the ravages of malaria in the ranks. But it also insisted on the lack of qualified staff: not enough Russian interpreters, poorly trained paramedics or nurses, many inexperienced students, etc. Russia's ambitions to present itself as a player in the reorganization of Macedonia and as a healing and restorative power collided with the reality of the campaign on the *front d'Orient*. Rather than revealing the scant resources available to the Russian army, the hospitals seemed to become places where the discontent of convalescents worsened, even turning into protest.[65] The swamps of Macedonia were indeed the places where malaria incubated in the troops. But the convalescent hospitals, and the convalescents themselves, were the incubators of an increasingly intense contestation of authority.

4 Conclusions: a Disruptive Environment

Throughout 1917, Allied soldiers in Macedonia showed increasing signs of mistrust towards their officers. This mistrust was found at different levels in the Allied contingents, whether Russian, French, Serbian, British, Greek, or Italian. In the case of the Russians, the fact that the troops had already been severely tested by disease, politicized during their convalescence, and revolted by the state of the health chain, intensified the protests. This protest reached its peak with the mutiny of December 1917, when Russian troops threatened to open the front to the Bulgarian enemy if they were not withdrawn from the line. In the case of the other contingents, particularly the French, the demand for leave and rest after months of campaigning in such a hostile environment triggered mutinies as early as spring 1917. To resolve the crisis, the French government decided to replace them with colonial troops, as well as volunteers, or elements that the metropolitan regiments were getting rid of.[66] The process was not unique to the French, as the British proceeded to Indianize their

64 *Krasnyi arkhiv* (1940), no. 101, 228–34.

65 M. Pogorelov, *Tret'ya kategoriya* (Kharkiv: Na Varti, 1934), 99.

66 SHD, 6 N 209, Note on the Troops' Relief in Salonika, 3rd Bureau, Front Group, June 1917.

contingent: Irish and British units were sent to the front in France and replaced by Indian troops.[67]

This *armée d'Orient*'s metamorphosis shows how environmental factors influenced the course of the campaign. First and foremost, dealing with the terrain and its shaping was one of the main issues that punctuated the lives of the soldiers on this front. Secondly, in the various contingents, at least three-quarters of the soldiers hospitalized had to be evacuated due to illness, particularly malaria, which was widespread in Macedonian territory. Overcoming this health and medical obstacle was on the agenda of all the Allied armies. This agenda was structured by a practical imperative: most importantly, to stem the proliferation of malaria so to stop the manpower haemorrhage. But we must also add the objective of taming the Macedonian environment to transform this region, where the land was abandoned after the Balkan Wars, into a practicable theatre of war, with roads, tracks, healthy areas, a workable hinterland, etc. Lastly, the Allied agenda also involved an issue of prestige, insofar as several contingents tried to set themselves up as a benevolent power in the field of sanitizing and caring. Some took up the challenge with success, but no contingent escaped unscathed.

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67 Timothy Bowman, *Irish Regiments in the Great War: Discipline and Morale* (Manchester: Manchester University Press, 2004), 4, 174–75.

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PART 3

Belligerent Landscapes from the Victims' Perspective

CHAPTER 8

City, Forts, and the San River—Przemyśl, 1914–15: Militarization of the Landscape and the Question of Environmental Awareness

David Novotny

1 The Environment in the Event of War

The power of modern military conflict to transform everything that surrounds us humans—whether natural or man-made—is undeniable. The stark images from the devastated front lines of the First World War shaped people's imagination of that conflict for generations. This chapter does not trace the long-term consequences of the war on the natural environment as a system, which consists of several interrelated subsystems.[1] Rather, the focus is on the interventions of people—specifically the Austro-Hungarian military—with regard to certain elements of the environment, such as the water, soil, air, and living creatures, using the example of the siege of the Galician belt fortress of Przemyśl during World War I. Conversely, it is also about the effects of these individual elements on the military. To examine the mutual influences, official military records of the Austro-Hungarian army as well as private estates of combatants and civilians will be analysed. As explained, this chapter does not deal with the longer-term consequences for the environment—this is not possible due to the nature of the sources used. For this reason, the study focuses on the concept of landscape. It is both a cultural image and a physical place. Engagement with it is always linked to an engagement with time and space, and takes on a different meaning depending on the observers.[2] Natural as well as cultural landscapes consist of the same elements as the environment: water, soil conditions, living beings, air. The objective here is therefore the examination of the military's intervention in these elements, or components, of a landscape. The concept of landscape also speaks to its enormous importance

1 Atmosphere, hydrosphere, lithosphere with elements such as: water, air, soil, and living organisms.

2 Nicholas J. Saunders, "The Dead and Their Spaces. Origin and Meanings in Modern Conflict Landscapes," in *Conflict landscapes. Materiality and Meaning in Contested Places,* eds. Nicholas J. Saunders and Paul Cornish (London: Routledge, 2021), 3.

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for military operations;[3] observations, descriptions, and interpretations of it are also an integral part of the first-person documents from the time of the First World War.

Even if the environment as a system cannot be captured through the chosen approach, this chapter can nevertheless contribute to the discussion on the effect of the First World War on the environment. This is done by illuminating the environmental awareness of the actors: the Austro-Hungarian army leadership and the individual combatants and civilians. Both soldiers and civilians in Galicia were confronted with the transformation of the landscape caused by the war, whether it was their place of work, their operational area, or their living place. Military use and destruction were omnipresent and are also addressed and commented on in the private documents consulted. By analysing these perceptions and interpretations, the presence or absence of environmental awareness can be illuminated. Here, it can be asked whether the actors participating in the actions of the military understood the practices as an intervention in the natural environment as a system. It can be assumed that this question is only relevant for the ego documents, not for official military records. In the tactical handbook of the Austro-Hungarian army, war is defined as follows:

> One resorts to this extreme means if the diplomatic negotiations conducted to establish disturbed mutual legal relations [of sovereign states] have remained fruitless and the state or other relations are necessarily sought by means of force, by war. The decision is then made by battle, by the sword.[4]

Thus, a conflict—a war—is to be fought by means of violence. A relevant question in relation to the use and destruction of the landscape in this context is: what are the rules of war? What is the army allowed to do and what is it not? The next volume of the cited publication defines this: it is clearly regulated how to deal with the fallen, with prisoners, and with the population. When it comes to the landscape, it seems that everything can serve its own purpose—victory on the battlefield—with the landscape being affected. Everything from bodies

3 The landscape of all the regions relevant to the Austro-Hungarian Army – including Galicia – is described in detail in manuals of the Vienna War College, encompassing rivers, infrastructure, topography, climate, and population. In OeStA/KA Militärerziehungs – und Bildungsanstalten (MEB) Militär-Schulen, Kt. 65, *Behelf zum Studium der Militär-Geografie. Nordöstlicher Kriegsschauplatz* (Vienna, 1910), 11.

4 OeStA/KA MEB Militär-Schulen, Kt. 59, Wilhelm Reinländer, *Vorträge über Taktik gehalten an der k. k. Kriegsschule*, Bogen 1–15 (Vienna: L. W. Seidel & Sohn, 1870), 1.

of water and forests to mountains and plains is described in detail. However, in a tactical sense and for the best possible exploitation for the battle, destruction, if necessary, is of no consequence here. This applies also in the case of villages and towns.[5] In short, everything serves military purposes, nothing is spared if circumstances demand it. The question of environmental awareness in official army records thus seems irrelevant, or rather easy to answer: the natural environment as a system consisting of subsystems that influence each other played no role in war planning.

2 Przemyśl in Austro-Hungarian War Planning

Galicia acquired significance for the Austrian military as early as 1787. The first governor of Galicia, Count Pergen, saw this region as a source of new recruits and resources for his own army.[6] This importance was supported by the figures: four years before the First World War, Galicia had eight million inhabitants, making this crown land the most populous within the entire monarchy, with its capital, Lemberg, the fourth largest city within the monarchy.[7] Besides the resources from cattle breeding and mining, oil deposits played a primary role, which is why it was essential from the military's point of view to defend the territory.

This region was a conflict area for Austria-Hungary and the Russian Empire, which supported the pro-Russian movements within Galicia.[8] From a strategic perspective, the situation was unfavourable because Galicia was difficult to defend, which the officers also learned at the Imperial and Royal War School in Vienna.[9] Without a natural barrier, the landscape north of the Carpathians was dominated by a wide plain extending to the border of the Russian Empire. To be able to defend Galicia, given the nature of the terrain, Field Marshal

5 OeStA/KA MEB Militär-Schulen, Kt. 59, Wilhelm Reinländer, *Vorträge über Taktik gehalten an der k. k. Kriegsschule*, Bogen 16 – to the end (Vienna: L. W. Seidel & Sohn, 1871).

6 John E. Fahey, "Bulwark of Empire: Imperial and Local Government in Przemysl, Galicia (1867–1939)" (PhD diss., Purdue University, 2017), 42–43.

7 "Die Dichtigkeit der Bevölkerung," Austrian National Library, accessed July 5, 2023, https://alex.onb.ac.at/cgi-content/alex?aid=ost&datum=0001&page=39&size=45.

8 Elisabeth Haid, *Im Blickfeld zweier Imperien: Galizien in der österreichischen und russischen Presseberichterstattung während des Ersten Weltkriegs (1914–1917)* (Marburg: Herder-Institut, 2019).

9 OeStA/KA MEB Militär-Schulen, Kt. 65, Rudolf Müller and Maximilian Randa, *Behelf zum Studium der Militär-Geographie. Nordöstlicher Kriegsschauplatz* (Vienna: L. W. Seidel & Sohn, 1910), 11.

Archduke Johann pleaded as early as 1809 for an active offensive in the event of war in the east. A few years later, in 1818, he proposed the San and Dniester Rivers as the optimal line of defence in Galicia. By means of this line, the main passes through the Carpathians would be protected, and thereby also a possible advance of enemy troops into Hungary prevented. In his view, the town of Przemyśl was to be fortified so that it could be used as a rallying point for further offensive operations.[10]

Przemyśl was chosen, of course, because of its strategic location. It was situated on the San, relatively central to the San–Dniester defence line, and was based in the Carpathians and protected from the west and south by the first of the mountains. To the north-east and east of the city, a wide plain began, which stretched to the border with the Russian Empire. Thus, in the event of war, the planned fortress could serve as a mobilization point for further operations in the latter directions. Since it was planned to actively defend Galicia, Przemyśl was to be developed into a belt fortress. This means a fortress consisting of a wide ring with several fortification works. In this way it could secure a wide manoeuvring terrain for the field armies, which it was also to actively support.[11] The first construction measures took place after the Crimean War due to the aggravated political situation of Austria-Hungary and Russia. A first ring of fortifications was built, consisting of earthworks and a few roads.[12] Since the situation between the two countries had eased relatively by the 1860s, no further construction was undertaken. It was only after the defeat by Prussia that Emperor Franz Joseph decided in 1871, on the recommendation of the Commission for the Defence of the Empire, to have Przemyśl definitively expanded to become the second largest fortress in Europe after Verdun.[13]

Over years of construction work on the fortifications, a massive complex surrounded by the Carpathian foothills and with a strategic crossing over the San River was created. Before the fortress was built in 1869, the town had around 15,000 inhabitants. Thanks to the enormous financial investment in the construction of the fortress, the development of infrastructure, and the increase in the number of workers, the population had already reached 54,000

10 Fahey, "Bulwark of Empire," 47.

11 OeStA/KA MEB Militär-Schulen, Kt. 62, Rudolf Müller and Maximilian Randa, *Studien-Behelfe der k. u. k. Kriegsschule. I. Über Befestigungen, II. Die Reichsbefestigung* (Vienna: Verlag der k. u. k. Kriegsschule, Print: L. W. Seidel & Sohn, 1912), 82–83.

12 Fahey, "Bulwark of Empire," 49.

13 Curt Dunagan, "The Lost World of Przemyśl: Interethnic Dynamics in a Galician Center, 1868 to 1921" (PhD diss., Brandeis University, 2009), 283; cf. Hermann Heiden, *Bollwerk am San: Schicksal der Festung Przemysl* (Oldenburg: Stalling, 1940), 88.

by 1910.[14] The construction of the fortress transformed the city into a heavily fortified garrison town and a logistical centre.[15] The outer 48 km long defensive ring consisted of 17 main fortifications and 18 smaller fortifications, which were connected by an interval line during the armament of the fortress in August 1914. The distance to the centre of Przemyśl was between 6 and 11 km.[16] To make the works resistant to an enemy artillery and storm attack, they were integrated into the layout of the surrounding landscape in the best possible way. The massive, steep facades were not to extend too far out of the landscape, and they were also provided with deep and wide trenches. During the three years of work on fortress number IV Optyń alone, workers moved around 212,850 tons of earth.[17]

Inside the outer defensive belt was a smaller belt that surrounded the city but was not as strong as the outer defences. There was a lot of military infrastructure in the city and between the two defence rings: hospitals, weapon and food magazines, barracks, airfields, training grounds, artillery parks, etc.[18] The construction measures were curbed again in 1910, as Austrian general Conrad von Hötzendorf tended to favour an active defence of Galicia. Przemyśl's role would thus be to act as a rallying point and camp for the field armies.

3 In the Middle of Enemy Territory

The defeats of the k. u. k. Army—the land force of Austria-Hungary—on the Eastern Front from autumn 1914 onwards meant that the troops had to withdraw from large parts of Galicia. In the middle of the Russian occupied territory was the last Austro-Hungarian 'island', the now enclosed and besieged fortress of Przemyśl. This was the largest siege of the First World War, which lasted almost half a year with a brief interruption.

Apart from the strategic measures and related constructional undertakings, the fortress command also had to deal with the sanitary and health situation

14 Fahey, "Bulwark of Empire," 135.

15 Fahey, "Bulwark of Empire," 34.

16 Alexander Watson, *The fortress: the great siege of Przemyśl* (London: Allen Lane, 2019), 54.

17 Fahey, "Bulwark of Empire," 78; Tomasz Idzikowski, *Twierdza Przemyśl: Powstanie, Rozwój, Technologie* (Krosno: Arete Spółka, 2014), 183–199. See also Idzikowskis' detailed publications to the individual Forts in Przemyśl, e.g. Tomasz Idzikowski, *Forty Twierdzy Przemyśl* (Przemyśl: Regionalny Ośrodek Kultury, Edukacij i Nauki, 2001); Tomasz Idzikowski, *Fort XV "Borek", Architectura et ars militaris 5* (Przemyśl, 2004); Tomasz Idzikowski, *Fort VIII "Łetownia," Architectura et ars militaris 4* (Przemyśl, 2004).

18 Watson, *The fortress*, 7; Fahey, "Bulwark of Empire," 64.

of all inhabitants. To avoid the spread of diseases, as well as food shortages, as much as possible, they had to try to control the landscape and its elements. The water, soil, animals, and plants, even the air, had not only to be used for military purposes, but also for medical and epidemiological purposes. Przemyśl is examined here as a conflict landscape of the First World War. In this respect, we speak of the landscape in terms of layers. The original pre-war landscape was covered by a layer of the war landscape of the years 1914–18. The period of the siege is divided into two phases:

1. The preparation of the fortress for the impending siege in the hinterland: from August 1914, the fortress was additionally upgraded, and new works and interval lines were set up. In this first phase from August to mid-September, hundreds of thousands of soldiers, as well as civilians, marched through the city as refugees, displaced persons, and evacuees.
2. The period of sieges: the first phase—the layer of the additionally upgraded fortress—is covered by the battles in the second phase, which makes it a terrain. Material destruction, carcasses of horses, dead and wounded soldiers as well as civilians, epidemics, lack of food, and improvised supplies characterize the period of the sieges. This phase ends with the surrender of the fortress and its occupation by the Russian army in March 1915. The destruction and exhaustion of the military equipment and fortifications ordered and carried out by the fortress command mark the final phase and thus form the last layer of the fortress. The last act discussed here is the entry of the Russian soldiers into the surrendered city.

4 Actors and Sources

4.1 *The Landscape*

Landscape has already been presented and discussed in the introductory section. As an actor, it represents the landscape of Przemyśl and its immediate surroundings, which was tangible for the people in the fortress as well as for the military and could be used or perceived. To capture the diversity of the Przemyśl landscape and how it was perceived and used, it is divided into several spaces. At the centre of the fortress is the town of Przemyśl, which was furthest away from the fighting, as the place of residence of the remaining civilian inhabitants. The second space is the area within the fortress ring, which served as the garrison's manoeuvring space. Finally, the fortifications of the outer belt with the interval line that connected them and the apron positions form the last space. Here—in the field—battles were fought and this area was completely militarized. This division is necessary for the analysis because

each space served different purposes and it is also important for the analysis of the war experience of the actors, because their position in these spaces also influenced their perception and interpretation of the events around them and in the entire fortress.

4.2 *The Austro-Hungarian Army*

As explained in the introduction, an army serves to resolve conflicts between sovereign states by means of force.[19] To gain an understanding of what role a belt fortress has for the army and what the army has to do to defend this type of fortress and to regulate everyday life in it in the event of war, handbooks from the k. u. k. Kriegsschule Wien (war school of Vienna) are referred to. They form a good transition to the actual orders of the Przemyśl fortress command, which proceeded according to these theoretical indications. The orders and reports from the fortress were written by different commanders of the Przemyśl defence districts, as well as by the commander-in-chief, thus conveying a broad view of events.

4.3 *The People and their Memoirs*

To shed light on the events inside the fortress from several perspectives, diary entries by combatants and civilians are discussed. The four selected authors all stayed in Przemyśl, but their activities, reasons for coming to Przemyśl, and their work and duties differed greatly. They viewed events in Przemyśl from their own perspective and attributed very different meanings even to major events affecting the collective. Josef Tomann[20] was a military doctor in the Imperial and Royal Army. He describes the events of the second siege from 22 December 1914 to 4 May 1915. Tomann died a few days after the fall of the fortress, on 16 May 1915, as a result of illness. His diary displays a perspective shaped by his work in the hospitals, focusing mainly on the events and developments surrounding the care of the sick and wounded.

Ilka Künigl-Ehrenburg[21] published her diary under her maiden name Ilka von Michaelsburg as late as 1915, but after she had left the city and Galicia. Her husband, Count Emil Künigl-Ehrenburg, was called up as a medical officer to the fortress hospital in Przemyśl to where she followed him and worked as an

19 OeStA/KA MEB Militär-Schulen, Kt. 59, Wilhelm Reinländer, "Vorträge über Taktik gehalten an der k. k. Kriegsschule," Bogen 1–15 (Vienna, 1870), 1.

20 ÖStA/KA Neue Feldakten (NFA), Festungskommando Przemysl, Kt. 1322, Akt. 1345, 206, Josef Tomann, Tagebuch.

21 Ilka von Michaelsburg, *Im belagerten Przemysl: Tagebuchblätter aus der großen Zeit* (Leipzig: Armelang, 1915).

auxiliary nurse. She stayed in Przemyśl itself from September 1914 to May 1915, but also notes her journey to the fortress town and her return to Vienna. In her descriptions, she combines what happened in the hospitals with private worries about her husband and keeping her own household running.

The diary of Eduard Freunthaler presents a contrast with the first two.[22] He came from Lower Austria and fought with the Austro-Hungarian army in the rank of corporal and later as a platoon leader. He describes his participation in battles at Przemyślany, Gródek, and the first and second sieges of Przemyśl until the fall of the fortress and his capture. His descriptions of service in the fortress belt, which always begin with a weather report, seem almost monotonous and passive. However, there are also passages in which he describes events in more detail, giving free rein to his emotions, which illustrates the personal significance of his perceptions.

Finally, the most extensive and elaborate diary of Helena z Seifertów Jabłońska[23] should be mentioned. Together with her mother, she travelled from Sanok to Przemyśl in August 1914 to look for an apartment and rented a building from absent relatives. In the wake of the chaotic situation, she was obliged to accommodate refugees as well as soldiers and officers in these apartments and to support caregivers in the city. Among others, an Italian officer lived with her until the Russian takeover of the fortress, and Jabłońska's mother left for Vienna with his wife before the first siege. An analysis of her diary is particularly interesting because, as a Pole, she is the only author apart from the Austrians to report on the events in Przemyśl. None of the other authors describes the themes of chaos and executions as frequently and in such detail as Jabłońska. Her diary, along with that of Ilka Künigl-Ehrenburg, is also interesting because it shows how important it was for women to build up a social network in the turmoil of war. This was necessary to procure rare products and food, but above all to obtain new information and news.

The focus in this part is on the narrative/description of practices in relation to the landscape. As different as the diaries and notes are, they all depict the development of the fortress town of Przemyśl during the time of the sieges. Not all the authors' observations coincide, but they reveal a deteriorating situation that the actors perceived and described from their different perspectives.

22 OeStA Nachlässe (NL), Eduard Freunthaler, B/497.

23 Helena z Seifertów Jabłońska, *Dziennik z oblężonego Przemyśla 1914–1915* [Diary from the besieged Przemyśl 1914–1915] (Przemyśl, 1994).

5 Militarization of the Landscape

The first phase of the war in Przemyśl begins with the preparation of the fortress town for a possible upcoming siege. It was now necessary to prepare rations and weapons, as well as to dominate the entire landscape surrounding the fortress and thus control it. It may seem absurd to speak of militarization in the case of a fortress—a building that primarily serves military purposes. In the case of Przemyśl, however, this is true. The landscape of the fortress, which had already been militarized for years, was massively upgraded during the course of the mobilization. Thus the already known militarized landscape was once again significantly changed. The fortress was composed of several areas. In the centre was the city, enclosed by its own fortification ring—the inner ring. The second fortification ring was located a few kilometres away from the city and enclosed the entire first area. However, the fortress in this state was far from prepared for war. In the event of war, it still had to be equipped. This concerns the additional troops for the garrison, additional armament, and closure of the outer belt by an interval line.[24] The fortress functioned as a supporting supply point and magazine for the field armies.[25] Hermann Kusmanek von Burgneustädten, commander of the Przemyśl fortress, wrote in a general report on the fortress after his return from Russian captivity in 1918[26] that it was not in good condition before the war, which was also confirmed by reports from his generals. He even goes so far in his report as to describe it as not able to be held.[27] Besides that, the fortress lacked every possible material—food and equipment—for the soldiers. The equipping time of 42 days, immediately followed by the siege, Kusmanek classified as "very short", but he emphasized

24 A line consisting of trenches for the infantry that connected neighbouring fortification works. In OeStA/KA MEB Militär-Schule, Kt. 58, Operativer Generalstabsdienst, Studien-Behelf, 4. Heft. Festungskrieg. Besondere Operationen (Vienna, 1911), 4–16.

25 In Conrad von Hötzendorf's view, fortresses were unsuitable for modern warfare, as they could cause an unnecessary commitment of larger troop units in a military conflict, which were to be used for field operations. In Hermann Heiden, *Bollwerk am San* (Oldenburg: G. Stalling, 1940), 33–34.

26 Kusmanek's accounts of the events were written after the siege. This report was part of his request for the Order of Maria Theresa. For his report he partly used files from the war archives in Vienna, which had already been written at the time of the siege. In OeStA/KA NL, Kusmanek von Burgstädten, B. u. C/1137, 1–12.

27 OeStA/KA NL, Kusmanek von Burgstädten, B. u. C/1137, 13.

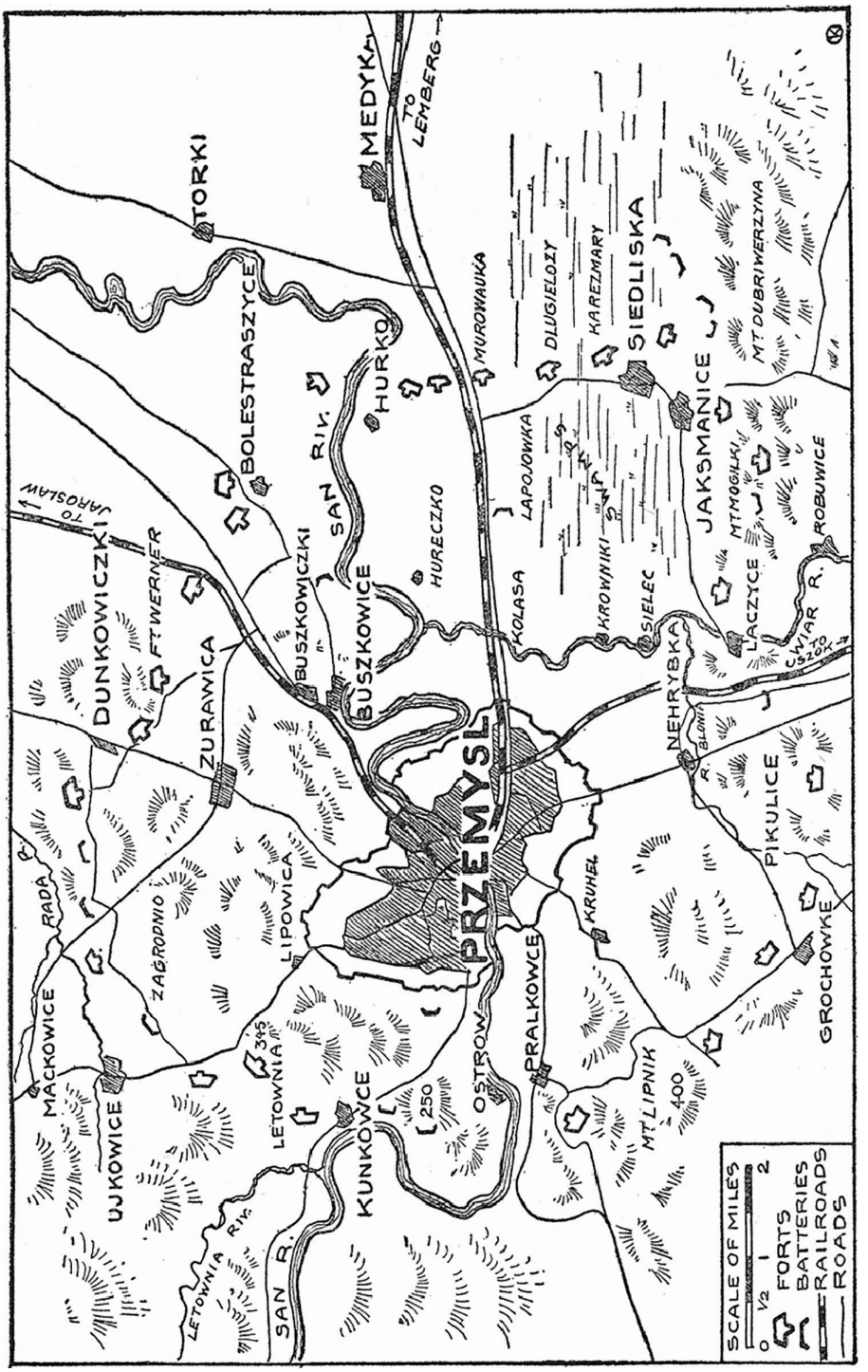

FIGURE 8.1 Map of Przemyśl Fortress: from Allen L. Churchill, The Story of the Great War. Vol. v, eBook, Dez. 14, 2007, p. 1449

that "everything possible" was done to complete the still lacking and important additional fortifications in time.[28] (Figure 8.1)

Helena Jabłońska and Ilka Künigl-Ehrenburg arrive in the city shortly before it is surrounded by the Russian army. Their impressions and observations can be summed up in one word: chaos. Many inhabitants had to leave the city, and people from the greater area around Przemyśl fled to safety or were deported by the military. In addition, the retreating k. u. k. Army flowed through the city. Künigl-Ehrenburg realizes the extent of the war during those days. She reports that until then she had no idea "what an army is—what hundreds of thousands are".[29]

Eduard Freunthaler had a different experience as a soldier. He camped with his regiment outside, in a meadow within the fortress ring, at what he calls a "beautiful sleeping place".[30] He also describes the road to the fortifications in Siedliska, in the south-east of the fortress belt, as "beautiful". These small remarks could at first be overlooked as unimportant, but they certainly represent the perception of the fortress especially by those soldiers who, before arriving, endured a heavy retreat in bad weather and even worse roads. Künigl-Ehrenburg also refers to the different perceptions of the city: "To someone from Vienna" Przemyśl is said to have seemed like a "danger", but for the soldiers coming from the field, the city represented a "point of rest, a short breathing space, stretching out and resting".[31]

In early August 1914, 27,000 soldiers from the construction regiments were sent to Przemyśl to further expand the fortifications and new positions. The developments on the Eastern Front already showed on 26 and 27 August, after the defeats of the 3rd Imperial and Royal Army,[32] that it was necessary to build up Przemyśl. The accounts of the clearing of the villages in preparation for the impending siege are linked to the perception of the misery of their former inhabitants by the authors of the diaries. Deserted stretches of land that lay in ruins are described.[33] With these arrangements, the landscape is further militarized, transformed, and the natural elements of the landscape are affected.

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28 OeStA/KA NFA, Gefechtsberichte 1914–1918, Kommanden, Kt. 149, Festung Przemysl 1914–1918, Folder 74: "Aus dem Ordensgesuche des Gen.Obstn. Hermann von Ksumanek, Die Festung Przemysl vom Kriegsbeginn bis zur Kapitulation," Vienna, October 26, 1920, 1–5.

29 Michaelsburg, *Im belagerten Przemysl*, 17.

30 OeStA NL, Eduard Freunthaler, B/497, 28.

31 Michaelsburg, *Im belagerten Przemysl*, 12.

32 Włodzimierz Borodziej and Maciej Górny, *Der vergessene Weltkrieg: Europas Osten 1912–1923, Volume 1: Imperien 1912–1916* (Darmstadt: Theiss, 2018), 74–83.

33 Cf. Michaelsburg, *Im belagerten Przemysl,* 25; cf. Jabłońska, *Dziennik z oblężonego Przemyśla*, 39.

To provide the artillery with a clear field of fire and to offer the enemy no hiding places, the apron of the fortress was cleared.[34] In practice, this meant blowing up and setting fire to surrounding communities and clearing or burning down neighbouring forests. The General Engineer Inspector describes the clearing of the apron with admiration and reports that this was accomplished in a "somewhat liberal manner [and] to a perhaps unprecedented extent".[35] All the villages within 5–6 kilometres of the fortress were completely burnt down or blown up.[36] While observing this procedure, Ilka Künigl-Ehrenburg expresses her sympathy for the peasant families affected. She refers to "poor Galicia", where the horrors of war were played out.[37] Besides the addition of seven new intermediate belt works and 1000 kilometres of barbed wire, a total of 21 villages and 1000 hectares of forest were destroyed.[38] Inside the fortress, parts of villages were destroyed. Mostly Ruthenian churches were demolished, which were believed to have served as potential markers for the enemy artillery.[39] This danger came from the assumption that Ruthenians were pro-Russian, whereby it becomes clear here that people were and are an integral part of the perception and interpretation of the landscape.

Karl Waitzendorfer was in the fortress as commander of the 111th Infantry Brigade of Landsturm and of the 3rd Defence District in the western part of the fortress. He associates this phase with extensive work on the fortress as well as with repeated rotations of troops between different works.[40] He considers this disadvantageous, as the garrisons and their officers had to repeatedly get used to the new conditions of the individual works. The surroundings of the individual fortification works were very different. In the west and south-west, the landscape was dominated by forested mountains, in the south by mountains, and in the north and east by extensive plains. Depending on the location of the work and the nature of the landscape in the forefront, one had to reckon with different actions by the enemy, who also tried to use the landscape for their own strategy. Because of the difficult terrain and the fortifications,

34 OeStA/KA NFA, Gefechtsberichte 1914–1918, Kommanden, Kt. 149, Festung Przemysl 1914–1918, General der Infanterie d. R. Karl Waitzendorfer, "Darstellung der Ereignisse bei Przemysl in den Jahren 1914/15," 6.

35 OeStA/KA NFA, Gefechtsberichte 1914–1918, Kommanden, Kt. 149, 1914–1918 Festung Przemysl, "K. u. k. Generalgenieinspektor."

36 OeStA/KA NFA, Gefechtsberichte 1914–1918, Kommanden, Kt. 149, 1914–1918 Festung Przemysl, "K. u. k. Generalgenieinspektor."

37 Michaelsburg, *Im belagerten Przemysl*, 27.

38 Franz Forstner, *Przemyśl: Österreich-Ungarns bedeutendste Festung* (Vienna: ÖBG Pädagogischer Verlag, 1997), 149.

39 OeStA/KA NFA, Gefechtsberichte 1914–1918, Kommanden, Kt. 149, 1914–1918 Festung Przemysl, "K. u. k. Generalgenieinspektor."

40 OeStA/KA NFA, Karl Waitzendorfer, "Darstellung der Ereignisse bei Przemysl in den Jahren 1914/15," 5.

Kusmanek did not expect attacks from the north, north-west and south. The south-eastern area of the fortress, on the other hand, is said to have been inviting for an attack, as the enemy could use the terrain for cover. However, his assumption was not entirely confirmed.[41] The 3rd Defence District (to the west) stated in its first siege report that the wooded area offered the enemy a covered approach to the fortress. The report suggests a "radical remedy" of burning down the woods. This was also said to have been attempted, but only to a limited extent, because of a period of rain. A second measure was cutting down the trees. Due to the short time the garrison had for preparation, the trunks were left lying, which were said to have been no obstacle for the enemy, but to have served as cover.[42]

When comparing the reports of the commanding officers with the diaries of other actors, it is immediately noticeable how differently the strategically prompted transformation and destruction of the landscape is thematized. In official military reports, the practical view dominates, with the aim of using the landscape for one's own advantage. The authors of the diaries, even if they knew the reasons for these practices, express their empathy for the now destroyed forests and villages.

6 The First Siege

The Russian army closed in on the fortress on 17 September 1914. This first siege lasted until 10 October. The reports of the commanders of the defensive districts in Przemyśl, written at the time, give a good overview of conditions during the first siege. From September 1914 to March 1915, there were about 160,000 people inside the fortress, of whom between 120,000 and 130,000 formed the garrison. The first siege, which lasted just under a month, left many deficiencies for the fortress, ranging from the infrastructure to the food supply. The following example from the 6th Defence District may serve to give a small insight into the events of the battle: within only the short month of the siege, the Russian artillery hit the district with 45,000 rounds. The defenders are said to have fired about the same number of times.[43]

41 OeStA/KA NFA, "Aus dem Ordensgesuche des Gen.Obstn. Hermann von Kusmanek, Die Festung Przemysl vom Kriegsbeginn bis zur Kapitulation," 20.

42 OeStA/KA NFA, Gefechtsberichte 1914–1918, Kommanden, Kt. 149, 1914–1918 Festung Przemysl, "Auszug aus dem Berichte über die Aktion im III. VertBez. während der Einschlisßung," 2.

43 OeStA/KA NFA, Gefechtsberichte 1914–1918, Kommanden, Kt. 149, 1914–1918 Festung Przemysl, "VI. Verteidigungsbezirksartilleriekommado, Bericht über stattgefundenen Kämpfen."

One of the tasks of the commander of the fortress was to tie as many enemy troops as possible to the fortress. To achieve this, the garrison launched several attacks against the Russian positions. The terrain and ground conditions played an important role in this. One such sortie had to be postponed for a day because the troops designated for it did not reach their assembly point until late in the evening due to "the surfaceless roads"[44] caused by rain. The report from the 3rd Defence District noted that the fortifications were not suitable for modern warfare. The works stood out too much from the surrounding landscape, although they should rather have been built deep into the ground. This also applied to the interval line, which was far too visible because it was not integrated into the course and layout of the terrain.[45] This observation was also confirmed by the 4th Defence District. The detached works offered the enemy a precise line of fire on them. The apron of the fortress was additionally littered with wire obstacles, mines, and trenches.[46] Wire obstacles 12 metres wide are said not to have withstood a prolonged bombardment and therefore a width of between 30 and 50 metres was suggested for the obstacles. The Russian army also tried to take advantage of the landscape and terrain. Russian soldiers dug trenches at up to 9 kilometres from the fortress and in this way worked their way little by little to the front of the obstacles erected in the fortress apron,[47] as they were covered by the terrain itself and by their construction measures.

The attacker was also deceived by mock buildings. These are said to have been constructed in detail so that they could not be distinguished from the actual military installations. This means that the defenders not only built a mock position, but in addition to this, other obstacles, head protections and even water pipes on wheels, to pretend to have their own artillery position.[48] This created "blocking areas" in their own space that were intended to draw enemy artillery fire.

Besides the militarization of the terrain, the air also served military purposes. The enemy used balloons for reconnaissance, which is why there was a demand for anti-balloon guns. For their own side, there was a lack of such reconnaissance balloons or aeroplanes.[49] The enemy is said to have repeatedly

44 OeStA/KA NFA, "Aus dem Ordensgesuche des Gen.Obstn. Hermann von Kusmanek, Die Festung Przemysl vom Kriegsbeginn bis zur Kapitulation," 23.

45 OeStA/KA NFA, "III. VertBez. während der Einschlisßung," 2–3.

46 OeStA/KA NFA, Gefechtsberichte 1914–1918, Kommanden, Kt. 149, 1914–1918 Festung Przemysl, "IV. VertBezKommando der Festung Przemysl," 2.

47 OeStA/KA NFA, Gefechtsberichte 1914–1918, Kommanden, Kt. 149, 1914–1918 Festung Przemysl, Schwabl m.p. Oberst, "IV. VertBezKommando der Festung Przemysl."

48 OeStA/KA NFA, Schwabl m.p. Oberst, "IV. VertBezKommando der Festung Przemysl."

49 OeStA/KA NFA, "III. VertBez. während der Einschlisßung," 3.

used terrain elevations to reach the fortress. According to the 3rd Defence District report, reconnaissance by patrols in a fortress war was not considered suitable,[50] if it was used, then it should be in woods and from trees.[51] This makes it clear that the entire landscape formed a closed space in which potential danger lurked everywhere. The Imperial and Royal Army attempted to control this space through military action.

This observation and perception are also conveyed to us in the diaries of the selected actors. The total cordoning off with no possibility of communication with the outside world—except for the supreme commander—is said to have evoked a strange feeling.[52] After the fighting on the battlefields, Eduard Freunthaler felt as if he was caught in a "mousetrap" in which one was simply locked in by an overpowering enemy.[53] Freunthaler and Ilka Künigl-Ehrenburg believed one had to get used to the new situation first. For both—although they had different duties and tasks—the change inevitably meant their "imprisonment" within the city.[54]

The air also played a significant role in another respect. The threat of viruses also lurks in the air, which every living being needs to live. Epidemics and plagues in an enclosed space pose a serious danger, especially when no outside help can be expected and the contaminated space cannot be left. In addition to the construction of barracks and sanitary facilities, epidemic sites and isolation barracks were also built, as the spread of an epidemic in the fortress could have catastrophic effects.[55] Contamination of the air, and of places, objects, and living beings, together with the weather, were among the most important factors that the fortress garrison had to deal with. These have a direct effect on people's bodies in terms of disease, cold, and wetness. An indirect effect was caused by poor organization of the food supply in Przemyśl. The supply problems did not only affect the people but of course also the animals within the fortress. For example, hay was brought in in large quantities, but it was stored in the open where it was exposed to weeks of rain. Hay was immensely important for feeding the animals, especially horses, which were used as draught horses.[56] An interesting and at the same time pitiful use of animals in the war is illuminated by the report of the 4th Defence District. It describes how the Russian army prepared cattle to destroy the obstacles in front of the fortress

50 OeStA/KA NFA, "III. VertBez. während der Einschlisßung," 4.
51 OeStA/KA NFA, Schwabl m.p. Oberst, "IV. VertBezKommando der Festung Przemysl," 3.
52 Michaelsburg, *Im belagerten Przemysl*, 17.
53 OeStA NL, Eduard Freunthaler, B/497, 31.
54 Michaelsburg, *Im belagerten Przemysl*, 12.
55 OeStA/KA NFA, Schwabl m.p. Oberst., "IV. VertBezKommando der Festung Przemysl," 5.
56 OeStA/KA NFA, "III. VertBez. während der Einschlisßung," 10–11.

belt and to "deactivate" the mines set up there. In the end, they were not used because the attack was broken off.[57]

One element of Przemyśl's landscape was mentioned only briefly and in passing: water. The Inspector General's report on the first siege provides valuable information on this, although it is limited to the military installations. For drinking and utility water, there were wells in the vicinity of the fighting positions and dugouts. The San River, which ran through the fortress, was subject to military use and control, as was the rest of the landscape. A river was a potential border and defence line, an obstacle or danger due to flooding.[58] To create additional crossings over the river, a bridge was built in the west (near the village of Ostrów) and in the east (near Hurko) within the fortification belt. To protect the bridges, river barriers made of floating beams were also placed near them. It is said that there were fixed river barriers here, but they were destroyed by floods.[59]

The first siege represents a learning process for the garrison. The city of Przemyśl was chosen for its good strategic location for expansion into a belt fortress, with the landscape playing the decisive role. Nevertheless, it was found that not enough attention was paid to the terrain everywhere; some strategically important parts of the landscape were overlooked. In front of the fortifications, there were in some places mountains and hills that were higher than the fortifications themselves. It was only in the period shortly before the first siege and also in the interim up to the second siege that the surrounding landscape was integrated even more into the fortifications of the fortress, usually through the construction of forefield positions, in order to be able to better control the surroundings of the fortress.

7 The Second Siege

The second siege lasted from 4 November 1914 to 22 March 1915, but despite the suggestions for improvement and actual improvements made during the first siege, the initial situation was even worse than before it. After the successful relief in the first days of October, Przemyśl functioned as a supply depot for the field armies advancing against the enemy. In exchange, thousands of

57 OeStA/KA NFA, Schwabl m.p. Oberst., "IV. VertBezKommando der Festung Przemysl," 3–4.

58 OeStA/KA MEB Militär-Schulen, Kt. 65, "Supplement zum Behelfe für das Studium der Militär-Geographie des nordöstlichen Kriegsschauplatzes" (Vienna, 1903), 9–18.

59 OeStA/KA NFA, Gefechtsberichte 1914–1918, Kommanden, Kt. 149, 1914–1918 Festung Przemysl, "K. u. k. Generalgenieinspektor."

wounded were transported from the front to the fortress. After the situation again developed in favour of the Russian army, attempts were made to provision the fortress for another siege and to move the wounded and the civilian population out of the city. In the end, after the renewed siege, there were about 18,000 civilians, 1,000 captured Russians, 127,000 soldiers—the intended number would have been 85,000 soldiers—and about 14,500 horses remaining in the fortress. As early as December, food rations had to be reduced and the slaughter of horses had to begin.

The entire period of the second siege was marked by a continuous and rapid deterioration of the supply situation. The lack of food and medical as well as hygiene rations made everyday life more difficult, which in turn facilitated the spread of diseases and epidemics. According to Künigl-Ehrenburg, the entire fortress became a "single hospital".[60] In her memoirs, she paints Przemyśl even more bleakly with her description of death "going roaring around the fortress".[61] A quote from Commander Waitzendorfer from the 3rd Defence District vividly describes the situation of the garrison:

> To illustrate the state of the people's strength, I would like to make the following observation, which I was able to make on the occasion when the 3rd Intelligence Battalion, returning home, needed four and a half to five hours to get from its position to the Lipowica barracks camp (about 6 km).[62]

The scene described clearly shows the debilitated condition of the defending troops in the spring of 1915. Due to their malnutrition and constant exhaustion, the soldiers were essentially prevented from accomplishing the tasks they had to perform for the service. Waitzendorfer was aware of the situation and even showed understanding for desertions, which, according to him, occurred mainly because of the disastrous state of the men's rations.[63] In the south of the fortress, the soldiers were repeatedly given the opportunity to advance further in front of their own apron positions. They did so because sugar beet, cabbage, and potatoes were still lying under the frozen ground covered with a thick layer of snow. They were still lying there because the garrison had not

60 Michaelsburg, *Im belagerten Przemysl*, 139.

61 Michaelsburg, *Im belagerten Przemysl*, 139.

62 OeStA/KA NFA, Karl Waitzendorfer, "Darstellung der Ereignisse bei Przemysl in den Jahren 1914/15," 29.

63 OeStA/KA NFA, Karl Waitzendorfer, "Darstellung der Ereignisse bei Przemysl in den Jahren 1914/15," 29–30.

had time to harvest the fields before the encirclement. The difficult situation of the starving garrison is also shown by the fact that the soldiers made these forays even under artillery fire.[64]

Josef Tomann began his diary on 22 December 1914. Shortly before Christmas he felt "lonely … in the middle of enemy territory".[65] He writes about his longing for his family and for his home. In addition to the depiction of the miserable situation of the starving and freezing people and the description of the material destruction of Przemyśl and the dozens of carcasses of horses lying around,[66] dead of exhaustion and hunger, he also draws a vivid picture of the clearly deteriorating morale of the garison and civilians: nurses were said to have served primarily "the lusts of the officers and the doctors", and to have hindered rather than helped him and other medical personnel.[67]

The increasingly serious physical destruction of the fortress and the city is also a recurring theme in the diaries. Künigl-Ehrenburg, who lived in the city, thus in the centre of the fortress, compares the fortress works, with their cannons circling the city, to a "fire-fed volcano", calling the cannons "faithful guards".[68] Freunthaler, who was not in the city but was quartered in the barracks in the fortress ring near the works, compares the cannonade to hell.[69] Hell was also played out before the eyes of their own soldiers in the advance positions. After the first siege, hundreds of families returned to their homes devastated by the military. After the second enclosure, these people found themselves between the Russian and Austro-Hungarian positions and neither side showed any willingness to let them through. The starving people were the next of kin of soldiers of the 18th Infantry Landsturm Regiment recruited from the Przemyśl area.[70] This is only one, unfortunately very sad, example of the fact that when analysing the perception of the landscape, the people must also be considered.

64 OeStA/KA NFA, Gefechtsberichte 1914–1918, Kommanden, Kt. 149, 1914–1918 Festung Przemysl, Hermann von Kusmanek, "Tatbeschreibung," 47.

65 OeStA/KA NFA, Festungskommando Przemysl, Kt. 1322, f. 1345, 206, Josef Tomann, Tagebuch, 2.

66 OeStA/KA NFA, Festungskommando Przemysl, Kt. 1322, f. 1345, 206, Josef Tomann, Tagebuch, 10.

67 OeStA/KA NFA, Festungskommando Przemysl, Kt. 1322, f. 1345, 206, Josef Tomann, Tagebuch, 13.

68 Michaelsburg, *Im belagerten Przemysl*, 34.

69 OeStA NL, Eduard Freunthaler, B/497, 35.

70 OeStA/KA NFA, Karl Waitzendorfer, "Darstellung der Ereignisse bei Przemysl in den Jahren 1914/15," 30; and Appendix no. 5, 11.

As a contrast to the miserable landscape inside the fortress, there are views of the landscape outside Przemyśl, which becomes apparent in stark contrast to the suffering inside the fortress. The theme is the unattainable idyllic winter landscape of Galicia, the River San, the soft ridges of hills outside the city, the horizon and the sunsets. It seems as if peace was expected on the horizon, in the far distance, where the destruction was no longer visible. The contrast is further enhanced by the felling of the trees inside the fortress. This was necessary to obtain sufficient firewood. It must be mentioned that the availability of firewood probably varied depending on one's position in the fortress. Tomann writes that because of the lack of wood, on some days it was not possible to light the fire in the hospital where he worked.[71] Waitzendorfer, on the other hand, reports from the 3rd Defence District that his soldiers brought the logs that had already been felled in the clearing into the fortress and were thus sufficiently supplied with fuel. This shows very well that the priority was the garrison in the outer belt and only then the rest of the fortress—this presumably also depending on whether they had access to firewood at all.

Künigl-Ehrenburg also connected the act of deforestation with the future of Galicia and asked herself: "For how many decades to come will this unfortunate country suffer!"[72] In her diary, she also shows how she perceived Galicia as particularly dangerous, at least geopolitically. According to Künigl-Ehrenburg, anyone living in the "protected heart of the fatherland"[73] had to be happy, since their own family could live in protection. At this point it becomes clear that she perceives Galicia as a periphery, unprotected and far away from the "heart of the monarchy". Along with people, animals also suffered. Josef Tomann repeatedly mentions numerous horse carcasses along the roads. He speaks of heroes who pulled diligently in the hunger and frost until they received a mercy killing. Because of exhaustion and lack of food, several hundred horses are said to have been slaughtered every day. They then served as food for the people.[74]

The shortages concerned not only food and fuel but many everyday items, as well as war equipment. A railway workshop was modified according to need. Thus different sgarrisons, flare guns, nails, ropes, staples, horseshoes, wire cutters, hand grenades, toothpaste, shoe polish, soap, matches, and more could be produced. Other factories produced food for the garrison and fodder for

71 OeStA/KA NFA, Festungskommando Przemysl, Kt. 1322, f. 1345, 206, Josef Tomann, Tagebuch, 9.

72 Michaelsburg, *Im belagerten Przemysl*, 28.

73 Michaelsburg, *Im belagerten Przemysl*, 28.

74 OeStA/KA NFA, Festungskommando Przemysl, Kt. 1322, f. 1345, 206, Josef Tomann, Tagebuch, 9–10.

the animals. These included birch flour, bone meal (from the horses), canned horse liver, and horse fat.[75]

The material wear and tear and destruction were also accompanied by "wear and tear" and debilitation of the people in the fortress. To this fact, Josef Tomann adds the moral decay of the people in Przemyśl. Tomann's criticism was directed primarily at the officers before the fortress was handed over to the Russians in March 1915. In his reports, their lifestyle and behaviour contrasts sharply with the starving and completely exhausted soldiers. He complains of officers who had contracted several venereal diseases and of those who, to escape fighting at the fortifications, fled to the hospitals. On one day there is said to have been only one wounded person among 58 sick; they are said to have come under the pretext of various illnesses that had already been treated and had suddenly either worsened or allegedly "returned".[76] Freunthaler also highlights the gulf between the soldiers and their officers with an account of a dinner to which he and another soldier were invited. This took place in an officers' dugout in an earthen shelter, which was supposedly furnished and comfortable. Freunthaler questioned, above all, the origin of the food offered, since after all there was officially almost nothing left to eat in the fortress. That evening, however, there was chicken soup, roast lung with rice, potatoes and even beer, which had already disappeared from the city in September 1914.[77]

Before the fortress was surrendered, another breakthrough attempt was made in the eastern direction on 19 March 1915. Here, the landscape again played a dominant role. As described at the beginning, a wide plain begins in this direction. The condition of the depleted troops did not allow them to break out into difficult terrain. The attempt was not successful, however, and so the fortress was prepared for surrender to the Russian army. First, all guns were fired during the night to get rid of the ammunition. Then, from 5 a.m., the first prepared mines detonated. The outer and inner fortifications, three bridges, the powder magazines—everything was blown up. Weapons and bayonets were broken, carts were burned and all horses still alive were shot. Later, on 22 March 1915—at 9 a.m.—the first Russian soldiers marched into the city.[78]

During the spring offensive of the combined troops of the Imperial and Royal Army and the German units, the fortress was recaptured. Thanks to the

75 OeStA/KA NFA, Gefechtsberichte 1914–1918, Kommanden, Kt. 149, 1914–1918 Festung Przemysl, Hermann von Kusmanek, "Tatbeschreibung," 49–50.

76 OeStA/KA NFA, Festungskommando Przemysl, Kt. 1322, f. 1345, 206, Josef Tomann, Tagebuch, 39–40.

77 OeStA NL, Eduard Freunthaler, B/497, 72–73.

78 OeStA/KA NFA, Gefechtsberichte 1914–1918, Kommanden, Kt. 149, 1914–1918 Festung Przemysl, Hermann von Kusmanek, "Tatbeschreibung," 56–57.

shift of the front line far to the east, Przemyśl lost its importance. In the further course of the war on the Eastern Front, it functioned as a magazine and transport hub for the troops and their rations. Thus Przemyśl partially fulfilled the role that Conrad von Hötzendorf already attributed to the fortress before the war.

8 Conclusion

In the presented chapter, the fate of Przemyśl Fortress, its inhabitants, its garrison, and its landscape were illuminated. The peaceful pre-war landscape was covered by a new layer of war. The initiation of the landscape transformation was a rapid one, accompanied by massive interventions. Neither the natural and nor the cultural landscape inside and outside the fortress were spared. When comparing the preparations of the field armies for the first battles, which related to the deployment to the designated locations, it becomes clear that the landscape was transformed to a much greater extent by the constructional undertakings and clearings in Przemyśl during this first preparatory phase.

The source group of military records describes in detail numerous undertakings of the garrison: their intervention in the terrain (in the soil) through numerous obstacles, deforestation, burning, the disinfection and control of the air, the control of the San, as well as the use of animals. As indicated in the introduction to this chapter, in the event of war, all elements of the landscape were to serve military purposes. Whether this undertaking could have long-term negative consequences was of no concern. Nevertheless, attempts were made to prevent contamination of the fortress landscape and outbreaks of disease. After the siege, the entire fortress was also cleared of battle and war remnants. Here, however, there can be no question of an environmental understanding. It was not the case that these actions and practices were a contribution to environmental protection, rather, they were people – and war-oriented. As the equipment of war, the army naturally needed healthy soldiers, as well as civilian populations in the hinterland to be able to supply the troops.

The diaries from the same time and place open up an additional perspective that is not to be expected in the official military records due to their purpose—reporting and documentation. In personal accounts, the natural beauty of the landscape also comes to the fore. In nature, the actors sought an escape from their miserable situation. Concerns about the future and empathy for animals and nature are also described. Detailing the daily struggle for survival, everyday worries, the perception of natural beauty and destruction, and militarization of the terrain and its transformation, the selected sources present a wide range

of topics that, although not directly related to the actors' understanding of the environment, shed light on their interventions in the natural and cultural elements of the landscape, as well as on dangers emanating from the landscape. The landscape of Przemyśl was transformed in two regards. One was the physical and material changes, the second was the perception and interpretation of this landscape by all actors. Human survival was the top priority for everyone. Official military records focus on the main goal of an army—to win the war—and people were understood as an important means and resource. It is different in diaries. The authors, of course, do not see themselves as resources but pity nature and animals and seek at least a brief peaceful moment in contemplating the natural beauty that the landscape offered. The actors behaved according to their needs, interests, duties, opportunities, and desires. The commanders, soldiers, and civilians were influenced by the landscape in different ways and they intervened in it in different ways. For some, this conflict landscape was their home; for others, it was their place of deployment, where they had to perform their duty with weapons in hand or caring for others; and for others, it was a place where they followed their loved ones. Thanks to them, it is possible to shed light on the physical as well as imaginary and cultural transformation of Przemyśl's landscape.

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CHAPTER 9

Landscapes of the Eastern Front of the First World War in Narratives and Survival Practices of Ukrainian Refugees

Liubov Zhvanko

European states entered the Great War of 1914–18 hoping to achieve a quick and brilliant victory, but it turned into the five-year horror of the first industrial and truly total war in history. Europe, divided into western and eastern theatres of war, shuddered with unprecedented battles that were radically changing the landscape of the continent. Refugees then entered the stage—millions of voiceless, hitherto unknown extras, actors in all the wars that followed in the 20th century.[1] This chapter addresses the life-worlds of refugees in the war-torn region of Galicia, in particular the marginalized Ukrainian voices. By scrutinizing their experiences, we get a glimpse of the daily struggles of refugees in relation to military necessities, economic pressures, and food crises, as well as the public health dimensions of epidemics, births, and deaths.

In 1914, the territories with ethnic Ukrainian populations which were part of the Austro-Hungarian or the Russian Empires, and were divided into front line and rear according to their status. Today's territory of Ukraine, primarily eastern Galicia, Transcarpathia, northern Bukovina, and the western part of Volhynia, was one of the important theatres of military operations on the Eastern Front. This was the zone of operations of the South-Western Front, on which Russian troops fought against Austria-Hungary and later Germany.[2] The fronts, figuratively speaking, went not only across territories, they passed through human souls, destroying the existing system of values and devastating the *Lebenswelten* of the ordinary people. Refugees became an inherent feature of wartime society. Many of them found themselves in a foreign and unknown world, and became a "novelty" of its landscape. Thus, the following article examines the problem of the "little man"—a refugee who found refuge

1 Liubov Zhvanko, *Bizhenci Pershoï svitovoï vijni: ukraïns'kij vimir (1914–1918 rr.)* [Refugees of the First World War: Ukrainian Dimension (1914–1918)] (Kharkiv: Apostrophe, 2012), 10.

2 Liubov Zhvanko, "Ukraine," in *1914–1918-online. International Encyclopedia of the First World War*, eds. Ute Daniel et al., trans. Gary Goldberg (Berlin: Freie Universität Berlin, 2014), http://dx.doi.org/10.15463/ie1418.10245.

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in the Ukrainian provinces—and the practices of his survival in the realities of wartime provinces.

The article distinguishes three periods in the existence of refugees in Ukrainian territories during the war, covering different state formations: the Russian Empire (August 1914–February 1917), the Ukrainian Central Rada and its proclaimed Ukrainian National Republic (March 1917–April 1918), and the Ukrainian State of hetman Pavlo Skoropadsky (April–December 1918). On the one hand, this division was conditioned by different political processes, which were taking place in the Ukrainian lands during 1914–18: the existence of the autocracy and its abolition, the revolutionary processes of 1917, the presence of Austro-German occupational forces, and the hetman's coup of 1918. On the other hand, different political regimes had their own visions for solving the problems of refugees. At the same time, the article moves away from the analysis of the activities of state entities in the sphere of refugees, which have been thoroughly analysed in the research literature,[3] with the main focus being on the life-worlds of refugees through the analysis of ego-documents on perceptions of the military conflict and warscapes.

Separate studies of World War I refugees appeared only in the last decade of the last century. Until then, scholars were primarily interested in the military history of the armed conflict, and its economic, political, and diplomatic components. One of the pioneers in the development of this topic was Peter Gatrell, whose groundbreaking work, in particular *A Whole Empire Walking: Refugees in Russia During World War I*,[4] illuminates the causes of refugeeism as a new and emerging phenomenon, recreating a broad picture of the global movement of civilians from the western frontier to the rear regions, tsarist policies toward this population, the activities of various charitable committees, and the impact of the Russian February Revolution on the ethnic consolidation of refugees. An example of a study of the history of Polish refugees is the book by Mariusz Korzeniowski, Mariusz Mondzik, and Dariusz Tarasiuk *Tułaczy los: Uchodźcy polscy w imperium rosyjskim w latach pierwszej wojny światowej* [The fate of wanderers: Polish refugees in the Russian Empire during the First World

3 Peter Holquist, *Making War, Forging Revolution: Russia's Continuum of Crisis, 1914–1921* (Cambridge, MA: Harvard University Press, 2002); Liubov Zhvanko, *Social'ni vimiri Ukraïns'koï Derzhavi* (*kviten'–gruden' 1918 r.*) [Social Dimensions of the Ukrainian State (April–December 1918)] (Kharkiv: Prapor, 2007); Liubov Zhvanko, *Bizhenstvo Pershoï svitovoï vijni v Ukraïni: dokumenti i materiali* (*1914–1918 rr.*) [Refugees of the First World War in Ukraine: Documents and Materials (1914–1918)] (Kharkiv: KHNAMG, 2010).

4 Peter Gatrell, *A Whole Empire Walking: Refugees in Russia During World War I* (Bloomington: Indiana University Press, 2005).

War].[5] The international project "Europe on the Move: The Great War and Its Refugees, 1914–1918", funded by the British Academy of Sciences for the centennial of World War I, resulted in the publication of the same name, in which scholars from Europe and America reconstructed aspects of the lives of refugees on different sides of the European fronts.[6] The article by Kamil Ruszała on the fate of Galician refugees who stayed in Austria-Hungary during World War I is closest to the subject we are studying here. He explored the worlds of three groups of actors: the refugees, the local population, and the authorities, who had to face a problem previously unknown, at least at this magnitude. He addresses the limits of hospitality and the efficiency of the bureaucratic apparatus, questions of identity, self-organization, and, most importantly, the reactions in each group's confrontation with asylum seekers.[7] At that time, refugees were not yet seen as part of the military landscape on the Eastern Front, as a factor that changed the landscape of host cities and villages. In fact, one could argue that the refugee could almost be the protagonist of the project "Embattled Nature: Men and Landscapes on the Eastern Front of WWI", as he is both a witness to the changes in nature and the landscape under the influence of the war effort, and the main narrator of this to the local population, and a victim of these changes.

It is important to emphasize the difference between the deportation of citizens of the Russian Empire, who were defined in the documents as "Christians" and "Slavs", and the deportation actions directed against Germans, Austro-Hungarians, Turks, and Bulgarians. The Polish population was regarded by the Reich as voluntary Slavic refugees who were guaranteed free rail travel, food on the routes into the hinterland, the opportunity to earn a living, and local support. Despite their Russian citizenship, non-Slavic ethnic groups were regarded by the official authorities as "enemy reservists". They were ostracized, administratively expelled from the frontline areas under police supervision, and were not entitled to state and public support. They were de facto deported and can be categorized as "deportees". The Jewish population constituted a

5 Mariusz Korzeniowski, Marek Mądzik, and Dariusz Tarasiuk, *Tułaczy los: Uchodźcy polscy w imperium rosyjskim w latach pierwszej wojny światowej* [Wandering Fate: Polish refugees in the Russian Empire in the years of the First World War] (Lublin: Wydawnictwo UMCS, 2007).

6 Peter Gatrell and Liubov Zhvanko, eds., *Europe on the Move: The Great War and Its Refugees* (Manchester: Manchester University Press, 2019).

7 Kamil Ruszała, *Galicyjski eksodus: uchodźcy podczas I wojny* światowej *w monarchii Habsburgów* [Galician exodus: Refugees during World War I in the Habsburg monarchy] (Kraków: Towarzystwo Autorów i Wydawców Prac Naukowych "Universitas," 2020).

special group of displaced persons, suffering not only from displacement and flight, but also from a widespread anti-Semitism.[8]

The term "refugee" in relation to part of the displaced population of the Russian Empire was clearly defined in the "Decree on the Assistance of Refugees" signed by the emperor on 30 August 1915. In this document, "refugees are recognized as persons who have left the territory under the threat of enemy advance, or who have already been occupied by the enemy, or who have been expelled from the area of military operations by order of the military or civilian authorities".[9] The first transports of refugees arrived in the Russian Empire in the autumn of 1914, mainly from the western Polish provinces. This spontaneous movement was voluntary and "a natural consequence of the enemy's advance into our territory".[10] The mass influx of refugees from the western theatre of war to the rear provinces of the Russian Empire began in July-August 1915, as a result of the Russian retreat and the implementation of the "scorched earth" doctrine by the military. It reached its peak in September/October and ended in November/December of the same year.

The world of the World War I refugee who found shelter in Ukrainian towns and villages was mostly the world of women, children, and the elderly. Refugee men's view of evacuation life is very difficult to discern, as the vast majority of them were mobilized into the tsarist army. In their letters, refugees wrote about the things that bothered them: food, clothing, and the possibility of making money somewhere. Many of the letters were written in the same handwriting because many of the refugees were illiterate, so they paid money to have someone write a letter for them. This source material is complemented by military documents, such as orders and snippets from the provincial press.

The telegrams and orders of General Alexei Mavrin, the chief of supply of the armies of the South-Western Front, issued in the summer of 1915 by the local authorities, can be considered important sources for understanding the attitude of the authorities to the refugees, the organization of their relocation, the provisioning of them on the road, and the vision of the landscape changed by the war and by these people.[11] Periodicals established by provincial and district zemstvo offices, city governments, and public unions, various "dailies", such as *Ekaterinoslavskaya zemstvo* newspaper, *Yuzhnaya Rosiya* (Nikolaev), *Yugo-Zapadnyj kraj* (Vinnitsa), *Chernigovskoe Slovo*, *Yuzhny Krai* (Kharkov), *Odessa Listok*, *Volyn* (Zhitomir), *Poltavskiy Den'*, and *Rodnoy Krai* (Kherson), responded

8 Zhvanko, *Bizhenci Pershoï svitovoï vijni*, 39.
9 Zhvanko, *Bizhenci Pershoï svitovoï vijni*, 92.
10 Zhvanko, *Bizhenci Pershoï svitovoï vijni*, 31.
11 State Archives of Poltava Oblast, f. 83, op. 1, d. 143, 37–38, 41.

to a new social phenomenon, unknown in previous wars—refugeeism. Analysing the content of the press (working through 68 editions) with material about refugees, it was possible to identify a certain pattern: in the publications from the beginning of the war there were no references to refugees, which was explained by the situation at the front; from the summer of 1915, when the mass evacuation of the civilian population from the western provinces of the Russian Empire began, the press began to actively cover it, and there was even a special newspaper, *Yugobezhenets* (Odessa), published by the office of the head of the commission for the refugee settlement of the South-Western Front. A significant number of articles about the life of refugees can be found on the pages of the press in 1916, because it was in this year that refugees began to settle in their new locations. From the spring of 1917, when the revolutionary element swept the Ukrainian lands, the newspapers did not pay much attention to refugees, but in 1918 they covered the problems of their return home.[12]

As a historian, I have been dealing with the problems of World War I refugees in Ukraine for over 20 years, but not even in my darkest dreams could I have imagined that in 2022 the fate of the protagonists of my books and articles would befall me. Now I am an "academic refugee", and when a Russian bomb falls on my home in Kharkiv, all the materials I collected in archives and libraries over many years will be destroyed. At the same time, to go and pick up the stored source materials, as well as to work in the Ukrainian archives, is now simply life-threatening, so this article is written from the published and preserved materials in my laptop. In fact, this article is a compressed summary of the many years of pre-war research. It includes "voices" of local inhabitants and refugees—quotations from articles and letters—so that the reader can make their own assessment of the situation at that time, reflecting it onto the present realities of European cities and the presence of Ukrainian refugees in them.

1 The Statistical Dimension of the Refugee Question on the Eastern Front

Refugees constituted a variable population that was in constant flux, and this made it difficult to collect objective data. Natural demographic factors (births and deaths) influenced refugee numbers, with the added complexity of movement from one area to another, along with conscription, family reunion, and so

12 Zhvanko, *Bizhenstvo Pershoï svitovoï vijni*, 17–19.

forth. The best estimate is that refugees in the territory of Ukrainian provinces numbered more than 400,000 in November 1915, increasing to about one million in the winter of 1918. In autumn 1915, some 220,000 refugees sheltered in Yekaterinoslav province, making it home to the largest number in the Russian Empire. Naturally, these data should be considered tentative. Following the February Revolution, an uncontrolled movement of refugees took place from Russia to Ukraine, which they regarded as a place of transit. Additional contingents of refugees included Romanian refugees who fled the German occupation of their country. Nearly 900 such refugees were sent to Kremenchuk, Poltava, and the Poltava district in the first three months of 1917. Others found temporary shelter in Yekaterinoslav and Kherson provinces. In total, refugees on Ukrainian soil belonged to 20 different national groups, including Ukrainians, Russians, Belarusians, Poles, Germans, Latvians, Lithuanians, Estonians, Czechs, Slovaks, Moldavians, Romanians, and Serbs.[13]

Analysing the gender and age profile of the refugee population, we can conclude that the main contingent were women and children. Although it is difficult to determine the exact number of women refugees, since some of them were included in the statistical data prepared by the local refugee committees in the column headed "No gender division", it is still possible to assert the predominance of women among refugees.[14] In July 1915, a Yekaterinoslav newspaper wrote: "The majority of refugees are multifamily, almost exclusively women and children".[15]

The archival sources are more revealing. For example, on 3 March 1915, 37 women and 148 children aged from one month to 16 years arrived in Kharkiv from Lublin district. In one case, a 19-year-old refugee from Pultus district of Warsaw province, Regina Gaak, came to Kharkiv with her son who was only two weeks old. Considering the circumstances of the railways and martial law, it is fair to assume that the boy was born on the road. In all, of the 806 refugee children who arrived in Kharkiv between 28 February and 15 March 1915, 404 children were under the age of seven. Almost all of the women had several children. Here is just one example: on 2 March 1915, 63 families from Płock province arrived in Kharkiv, among whom was 35-year-old Amalia Pym. Eight

13 Liubov Zhvanko and Oleksiy Nestulya, "Ukrainian Assistance to Refugees during the First World War," in *Europe on the Move: The Great War and Its Refugees*, eds. Peter Gatrell and Liubov Zhvanko (Manchester: Manchester University Press, 2019), 112–13.

14 Liubov Zhvanko, "Sud'ba zhenschiny-bezhenki. Po dokumentam Pervoj mirovoj vojny" [The Fate of a Refugee Woman. Based on the documents of the First World War], *Historians* (2017), https://www.historians.in.ua/index.php/en/doslidzhennya/1029-liubov-zhvanko-sudba-zhenshchyny-bezhenky-po-dokumentam-pervoy-myrovoy-voyny.

15 "Pomosch slavjanam-bezhentsam," *Yekaterinoslavskaya Zemskaya Gazeta*, July 14, 1915.

children came with her: Wanda (15 years old), Emil (13), Charlotte (11), Ludwig (9), Elsa (7), Juliana (4), Herman (3), and Anna (2).[16]

By the end of 1916, refugees had become a common sight in the local population; no one was surprised by the queues outside the premises of the committees to get meagre aid. There was no longer particular zeal among the organizers of the various donations; refugee women remained alone with their troubles, cradling infants born of soldiers stationed nearby,[17] and orphan children lost by their parents no longer touched correspondents with their pitiful appearance. Essentially, we can say that refugees, and more often refugee women, were settling into a new social role as breadwinners in a new place:

> Refugees are no longer an extreme phenomenon. The refugees themselves and the natives have become accustomed to the situation and the refugee issue has become routine, ordinary. Refugees, in most cases, settled down, acclimatized. Some have opened their own business, some have taken jobs, but all have established a "settled" order in their homes and in their relations with the population. You hear "in Warsaw", "in Grodno" less often. We are accustomed to saying, "here in Poltava".[18]

2 Ethnic Characteristics of Refugees

For ethnic refugees who found shelter in Ukrainian towns and villages, everything was alien, from the language, as the sources repeatedly point out, to the national cuisine. For example, several families of Polish refugees lived in the Kryvenetska Estate of Count Branicki, Taraschany district, Kyiv province. According to a newspaper article from October 1915, the local peasant women were very sympathetic to these unfortunate people, but, it was noted, "they do not freely understand each other, as the refugees speak only Polish".[19] It is interesting to note that some of the local committees even gave food to the refugee women to cook their national food. The fate of ethnic refugee women is a separate page in the history of refugee women, as nominally staying within the same state, they faced a completely different world in the evacuation.

During the First World War, more than 20 nationalities had refugee status on the territory of the Ukrainian provinces. Among them were Ukrainians,

16 State Archive of Kharkiv Oblast (SAKhO), f. 18, op. 21, d. 3, 30–32.
17 State Archives in the Autonomous Republic of Crimea, f. 63, op. 1, d. 1163, 25.
18 "Sredy ulitchnykh detej" [Among street children], *Poltavskij den'*, August 2, 1916.
19 V. Tsehelnyuk, "Bezhentsy," *Kyivskaja Zemskaya Gazeta*, October 1915, 26–27.

Russians, Belarusians, Poles, Germans, Latvians, Lithuanians, Estonians, Jews, Czechs, Slovaks, Moldavians, Romanians, Serbs and others. Unfortunately, it is not possible to determine the quantitative composition of the individual groups under the conditions of their constant movement. The largest groups were "Russian refugees" (usually a generalized term for Belarusians, Ukrainians and Russians) and Poles.

The fate of Polish refugee Antonina Urban, who was evacuated to Kharkiv from Lublin, is interesting and at the same time tragic. The "Refugee Book" of 1916 showed the following family composition: "father—Peter Urban, 29 years old; mother—Antonina Urban, 22 years old; children—Lucina, 2 years old, Jozefa, 1 year old". In 1917, Jadwiga was born. Antonina's husband died in 1919 from a smallpox epidemic, the same year little Jozefa also died. Antonina was left alone with two small daughters without a livelihood, without knowledge of the language, and only kind people prevented her and her children from starving to death. This woman lived in Kharkiv for many years, but her only dream, of returning to her native Lublin, according to her granddaughter Liudmila Toporkova, remained unfulfilled, which she regretted all the time.[20]

From the distant outskirts of the empire, refugees brought different ways of life, religions, and languages, even different appearances, to the Ukrainian provinces. At the time, even the clothes of female refugees served as a kind of marker, by which entire provinces were recognized. An eyewitness from Odessa wrote:

> Province after province. After a few hours on the road, you can already tell the difference between a province and a gubernia. You will recognize it by the hairstyles of the women. From under the kerchief to the forehead trimmed "fringe". Like our ladies wore 20 years ago.[21]

3 Refugees in the War Landscapes on the Eastern Front

Ukraine's provincial towns and villages perceived the outbreak of war differently and were affected by different aspects of it. By and large, in the first days the city was struck by euphoria at the coming victorious war, while the countryside was plunged into despair and grief. The complex urban system that is

20 Zhvanko, "Sud'ba zhenschiny-bezhenki."

21 "Religiosnaja prozessia," *Odesskyi Listok*, October 15, 1915.

the city had undergone dramatic changes since the outbreak of the war. Cities can be divided into three notional categories: front line, destroyed in the initial phase of the war; front line, where the war left its significant destructive traces; and rear, which lived in anticipation of war. It was the latter that became the place of accumulation of the alien element—refugees, prisoners of war, deportees, displaced persons, all those who were a direct consequence of the resolution of this military conflict.

With their arrival, the city's natural and cultural landscape, its space, and visual appearance underwent changes. These included barracks for temporary residence, entire towns for refugees, which were built near train stations and in city parks, new signs on the houses that told the average citizen about the existence of committees to help these people in the city, various posters with appeals to help refugees, job ads, signs for various "Labour Bureaus for Refugees", and trucks of donation collectors on the streets. And the refugees themselves—symbols of suffering and foreignness—changed the face of the city. They dissociated themselves from the usual urban landscape. Moreover, it was as if they demanded attention and help, generating feelings of guilt, but the refugee, as it turned out, was not always a positive innovation for the urban environment. Along with various crooks and fake fundraisers, "pseudo-refugees" also appeared.

The cultural space of the provincial city also underwent transformation: speakers of another language, of another psychology, another mentality appeared in it. At the same time, the city served as an environment where ethnic refugees, particularly Poles, sought to preserve their identity with the help of even small local diasporas.

An eloquent marker of the war is the railway station, where sanitary trains carrying wounded, refugees, and prisoners of war arrived. And while wounded soldiers and prisoners of war were perceived as a normal manifestation of war, the large number of refugees was a rather unusual phenomenon, unknown from past wars. By and large, it was not entirely clear to the average person where such a large number of displaced people came from, and why.

There were also points at the stations for receiving information about refugees who had lost their relatives on the way, and points for helping these same refugees. Representatives of various NGOs, volunteers, and students were on duty at these stations to receive refugees. It was simply impossible to transport a huge mass of refugees at one time, so special distribution points were organized at the major railway junctions and towns, which were located on the routes of their intensive movement. In a short time, actual refugee towns

appeared in Kharkiv and Yekaterinoslav, as the most important cities for the transit movement of refugees. In Yekaterinoslav it was called "Pokrovskiy Gorodok", named after the station square, where it was located.[22]

The so-called "refugee camps", sometimes built in the centre of cities, also became a kind of reminder of the war for the society in the rear. For example, on 12 July 1915 the first "Camp in the Poltava City Garden" began its work, for the needs of which, on 15 July, the city government gave all the buildings in the city garden.[23] Thus, temporary barracks for refugees, barracks for prisoners of war, infirmaries, and hospitals became inalienable external attributes of urban landscapes of provincial Ukrainian towns and villages.

In the Ukrainian countryside, the war broke out in the midst of the harvest, displacing a significant number of workers, and therefore was perceived as a terrible natural disaster. The war took the male breadwinner. The unploughed field was a symbolic image of the countryside during World War I. It was especially difficult in the countryside for the families of the mobilized to receive the same paltry material aid. In the village, the competition between the "arrivals", even if not of their own free will, refugees and prisoners of war, and the local population became even more pronounced, as the peasants who worked in the landlords' economies saw the same prisoners as potential competitors.

In the countryside, letters from the front were probably one of the main sources of information about the war, and the same information was also disseminated among refugees. This gave them an opportunity to compare their experiences on the road with what they heard from the relatives of a soldier who was fighting. It should also be noted that soldiers, mostly potential prisoners of war, sent letters from the front with "trench truths" that quite often made a shocking impression on the psychology of unprepared readers in the rear.

4 The Trials and Practices of Survival on the Road

The first refugee carts appeared in the Ukrainian provinces as early as the autumn of 1914, mostly from the western provinces of the Russian Empire and the Kingdom of Poland. This spontaneous movement was voluntary and was

22 Liubov Zhvanko, "Provintsia I chelovek vo vremja Velikoj vojny. Nekotorye akzenty problem" [Province and Man in the Time of the Great War: Some Accents of the Problem (1914–1918)], *1915: Vojna, Provintsia, Chelovek: ukrainsko-polskie akzenty problem* [1915: War, Province, Man: Ukrainian-Polish Accents: Materials of the International Scientific Symposium], ed. Liubov Zhvanko (Kharkiv: Maidan, 2016), 72.

23 Central State Historical Archive of Ukraine in Kyiv, f. 715, op. 1, d. 1748, 14.

"a natural consequence of the enemy's attack" on their territory.[24] The mass arrival of refugees to the rear provinces from the western theatre of operations began in July–August 1915, as a result of the retreat of the Russian armies and the implementation of the "scorched earth" doctrine. It reached its peak in September–October and ended in November–December of the same year.

In terms of the method of movement of refugees to the rear provinces, two stages can be distinguished. In the first one, which lasted from the summer to the beginning of the autumn of 1915, the main method of evacuation was cartage. The overwhelming majority moved in their own wagons, covered with tarpaulins and loaded with their most valuable belongings. Sometimes in a hurry, they packed what was at hand. Immediate participants of those events in Volyn described their simple utensils as follows:

> A box with clothes, towels and rows, a bread tub, a shovel for planting bread, a tub of bacon, a sack of flour, a shovel, an axe and a saw were put on the wagon. And no more could fit on the cart. Each of them was covered from the rain on top. Because it was dry, the carts really creaked.[25]

Analysing what was hastily put on the wagons, we can conclude that these people counted only on themselves, taking away food and tools, perhaps the main thing for both women and men. The refugee woman thought, she hoped, that somewhere along the way she would surely get to a house with an oven, in which she could bake bread and take out her own shovel, as she had done so many times at home. In fact, in a new and at the same time foreign place, these people, by and large, wanted to lead a way of life "like home". And a shovel, an axe, and a saw were the tools with which houses were built at the beginning of the last century. So refugees drove their wagons deep into the empire with the hope of waiting out the blizzard of war that had whirled their families and scattered them in foreign lands.

It was very difficult for the woman on the road, for whom the journey was an ordeal. She gave birth and buried her babies, her way was marked by the burial mounds of babies and elderly parents who died on the road, she was caught up with the news of the death of her husband, her beloved, her father at the front.

The transportation of refugees by railway began in the autumn, and new problems arose. Compared with European countries, the Russian Empire's backward rail infrastructure significantly complicated the process of refugee

24 "Refugees and the organization of assistance to them in connection with the work of the Special Meeting," *Izvestiya Vserossiiskogo Soyuza Gorodov* (1916, 1927–28), 174.

25 Zhvanko, *Bizhenstvo Pershoï svitovoï vijni*, 45.

transportation. Often there were hours of delays at stations in the absence of an adequate number of trains. All this led to antisocial behaviour from the refugees, which could be understood, as it was a question of simple human survival. For example, on 15 October 1915, the head of the Slavyansk gendarmerie department telegraphed to Kharkiv governor Nikolai Protasiev: "The refugee women with children, driven to extremes, having received no fuel from anyone, are openly robbing coal from the wagons at the station, going by railway. I find it difficult to carry out repressive measures".[26] And there were many such telegrams:

> When you enter the territory of Volyn, you see with your own eyes what the resettlement of people means. The entire region has risen and moved somewhere forward, away from the theatre of military operations. … And everywhere, in all those trains, the picture is the same: you cannot believe how so many people could fit into them, and with what effort they were pushing their bundles, bags and suitcases everywhere they could. …
>
> And at the stations—the long streets of dark-red goods wagons, driven into the railway deadlocks, waiting in line to go further. For now, they live in the wagons. And they live in a very real way: they put up tables, spread out and hang up their household rubbish. They turned out to be mobile apartments. … But they are the lucky ones. And the majority took the surviving "ponies" to the unknown road.[27]

Unknown landscapes posed a particular danger for the refugees. At the same time, there were cases when deliberately false rumours were spread among the refugees, further exacerbating the already tragic situation. For example, when a batch of refugees from Volyn arrived in Kherson, the refugees were simply afraid to get out of the wagons because someone had spread a rumour that they would all be drowned in the sea. Refugee women wailed in horror: "They're taking us to the sea to drown us!"[28]

5 Destruction and Refugees

The road of refugees to evacuation was a continuous ordeal, which was due not only to personal tragedies but also to the depressing landscape of the war. The

26 SAKhO, f. 18, op. 21, d. 10, 144.

27 "In Volyn," *Nezhynets*, August 29, 1915.

28 "The destitute," *Novosti Chersonskogo zemstvo* 41 (1915), 1112.

familiar, peaceful sights of cities, roads, and streets disappeared. Refugees witnessed the burnt-out villages; moreover, they became part of this landscape. German general Erich von Ludendorff wrote in his memoirs about refugees of a hostile state: "the Russians, retreating, deliberately and systematically … burned settlements. … Refugees, when they hindered the movement, were driven off the road into the swamps".[29]

The refugees were extremely distressed when their own homes were destroyed. In fact, we can say that a burned down house was the impetus for a person to be ready to evacuate, since the civilian population of the front-line provinces did not want to leave their homes and stayed until the last possible minute. Here is how one of the guides of groups of refugees to the place of evacuation in Kvasnitsky described his meeting with refugees in the summer of 1915:

> They [refugees] encamped in the forests, built themselves huts from planks and young wood, cut down here, and sat around continuously burning fires. I myself walked around this camp, which stretched for 3 *versts*. Few people agreed to go: some were still going to sell cattle and horses, others were busy washing and mending laundry; many of the owners, having left their families in the sticks, went to investigate in their villages whether it was possible to go back to their native places. Some of the latter, in my presence, returned from such reconnaissance and said that they had nothing to return home to, as their settled nests had been turned to ashes.[30]

Destroyed buildings, depressingly familiar sights from the beginning of the refugee journey, decreased in number with the advance into the rear Ukrainian provinces. Unfortunately, we have not been able to find any mention in refugee letters of this terrible destruction, but a Polish refugee found shelter in Kharkiv in the summer of 1915, who put his feelings on the road to evacuation, as well as the experiences of others, into poetic form. That refugee was one of Poland's outstanding poets, Leopold Staff (1878–1957). In his collection *Rainbow of Tears and Blood* (Tęcza łez i krwi), published in Kharkiv in 1918, there is a poem "Wychodzcy", dedicated to refugees (which is the meaning of the title), their hard evacuation journey, and experiences.[31]

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29 Erich Ludendorff, *Moi vospominania o vojne. 1914–1918* [My Memories of the War. 1914–1918] (Moscow: Tsentrpoligraf, 2007), 77.

30 Zhvanko, *Bizhenstvo Pershoï svitovoï vijni*, 199.

31 Liubov Zhvanko, "The First World War, Poles, and Forced Displacement: Kharkiv's Sylwetki," *Europa Orientalis. Studies on Dziejów Europy Wschodniej i Państw Bałtyckich* 11 (2020): 119.

6 Death and Burial around Refugees

Already from the first moments of the transformation of the civilian to refugee, his companion on the road becomes death. Death on the road, death in the refuge, death all around them—in newspaper articles, in conversations, in mourning processions.

The hastily carved cross symbolizes the end of refugees' suffering on the road. Nameless crosses were left in memory of relatives, which was very difficult for many refugee peasants, who did not know the area and the names of settlements that were foreign to them. Quickly buried family members who could not bear the hardships of the "involuntary journey"—these terrible pictures were with them in the evacuation as well: "Graves of the weakest—children and the elderly—began to appear on both sides of the roads".[32] Even some higher military ranks remarked on this, such as General Vasily Gurko, who in his memoirs noted: "The entire route of this mass escape was marked by graves with hastily carved crosses".[33]

Death lived in the wagons in which the refugees moved in the evacuation. For example, in a telegram, which was not an isolated case, Chairman of the Committee for Assistance to Refugees of Sumy nobleman Ilya Traskin wrote to the governor of Kharkiv: "The cars are overcrowded. The Southern Railway refuses to take them. Refugees make the station unsanitary. Deaths".[34]

Death was a companion to the lives of refugees in various shelters. In autumn 1915, journalist Timofey Emtsev, a former village teacher, related the terrible story of an eyewitness who had visited a refugee shelter in Kherson district:

> Day and night a baby was sobbing its heart out. It shouted itself hoarse and, having turned blue, it was swinging its thin greyish worm-like legs and moaning like an adult. Its mother with tormented face full of tears put her empty breast to its mouth and faltered … "Die! I've got no milk! Oh! Die! I cannot!" She clasped her head and moaned … "Ah! I cannot take any more! God, take it! I cannot". At night the baby suddenly died. It did

32 Vital Luba and Jevgeny Miranovic, eds., *Refugees of 1915* (Belastok: SPHU "Podlaska," Zakład Poligraficzny, 2000), 7.

33 Vasily Gurko, *Vojna I revolutsia v Rossii. Vospominania komandujuschego Zapadnym frontom* [War and Revolution in Russia. Memoirs of the Commander of the Western Front. 1914–1917] (Moscow: Tsentrpoligraf, 2007), 157.

34 SAKhO, f. 18, op. 21, d. 6, 243.

> not cry anymore and did not swing its worm-like legs and its mother was sitting and striking her head against the wall.[35]

In turn, for refugee children, orphanhood was a terrible ordeal: the deep psychological wounds of losing loved ones and the incomprehensible long journey to a foreign land where the unknown awaited them. All of this filled the children's souls with fear, and their faces acquired an adult expression of anguish. Tragic images of children's ruined fates were encountered by zemstvo workers, who repeatedly visited the orphanages where refugees lived. Here is what a representative of the Yekaterinoslav Refugee Aid Committee saw:

> "And here is an orphan!" … a woman says to me, pointing to a lonely girl sitting on the bunk. From the account of those around her, it was clear that her mother had been dead for several days and that her father was gone. And so lives the six-year-old by herself. Nice, smart girl. Wise-looking blue eyes, beautifully combed hair; all in all quite clean-cut, unlike the children just seen. She sits with her legs covered.
>
> After her mother's death, 9 roubles of money and a sheepskin coat remained.[36]

7 Evacuation Survival Practices

One of the most difficult problems proved to be the task of providing refugees with adequate food. Refugees received food at specially arranged canteens or cafeterias. For example, in Volyn, on average, around 47,000 refugees received food daily at canteens,[37] of which 9,000 refugees were fed daily in two such establishments in Zhytomyr.[38] These stations became places for mutual exchange of information between compatriots, and here we can begin to see the impact of the war on people's lives and character.

In August 1916, the correspondent of a Kyiv newspaper described one establishment that he visited as follows:

> It is lunch time. A dense grey crowd. Senior citizens, teenagers, children—but the majority are women. Grey "Little Russian" [*Malorossiia*] coats,

35 Timofey Emtsev, "Nedostatkyy," *Novosti Chersonskogo zemstvo* 41, October 1915.
36 Zhvanko, *Bizhenstvo Pershoï svitovoï vijni*, 56.
37 "Chronicle," *Volynskaja zhisn'*, January 20, 1916.
38 Zhvanko, *Social Dimensions of the Ukrainian State* (*April – December 1918*), 133.

> jackets, city coats, Galicia fur hats. The nuns who bring meals are scarcely able to make their way through the crowd. Refugees eat at long tables, others are waiting their turn, and some are receiving rations to take away. On one side there are the tables of inquiry offices: Russian, Polish, Jewish.[39]

Refugees received monthly monetary "food aid" to buy their own food. It averaged 6 roubles per month per adult. Food was also distributed mainly to ethnic refugees for whom the local cuisine was quite peculiar. The diet of refugees was not varied, it differed in the various provinces of Ukraine mainly in the amount of food issued, which depended on local conditions and the ability of the committees and local governments to purchase it.

The prolonged evacuation did not make the refugees any healthier, so they turned to local high-ranking officials for help when they were unable to work. For example, on 3 June 1916, refugee Zalma Lasman wrote to the Kharkiv governor:

> I have the honour to ask you, Your Excellency, to help me get money, from the committee, needed for my existence. My husband is at war. I am left with a child and an old mother without any means to live. I myself am very ill and therefore cannot earn money.[40]

It should be noted that with each new year of the war, the situation with the provisioning of refugees became more and more difficult and the authorities looked for radical ways to solve this problem. For example, in March 1916, the chief of supplies for the armies of the South-Western Front telegraphed to the Volyn provincial zemstvo board that all refugees in the province should be involved in the upcoming field work, provided they were not deprived of their rations in the meantime. In the case of refugees who refused to work, the council was invited to deny them their state rations.[41]

Refugees who settled in Ukrainian towns and villages were given free medical care in outpatient clinics, inpatient hospitals, epidemic barracks, and hospitals. The vast majority of the evacuees needed emergency medical care because their health was undermined by "the shocks experienced, the change in lifestyle and climatic conditions, the lack of timely nutrition, etc.".[42]

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39 Zhvanko and Nestulya, *Ukrainian Assistance to Refugees during the First World War*, 115.

40 SAKhO, f. 18, op. 21, d. 63, 108.

41 "Involvement of refugees in field work," *Volynskaja zhizn,* March 13, 1916.

42 State Archives of Poltava Oblast, f. 992, op. 1, d. 3, 2.

There were outbreaks of especially dangerous epidemics—typhus, cholera, smallpox—among them. In general, the level of efficiency of the medical care provided to refugees did not exceed the general level of health care in the Russian Empire. The main responsibility for the service of the evacuated people lay with the zemstvo and town councils, and that is why all the problems of the region had a negative impact on them as well. The ethnic committees were also engaged in organization of the medical care for the refugees. One example is the Lithuanian committee in Odessa, the activity of which was described in the newspaper *Yugobiezheniec* on 1 November 1915:

> Medical help is rendered by the doctors, students and cadets of the senior course. One group is in charge of the asylum, another takes in the sick on the committee's premises who do not live in the asylum; the seriously ill are treated at home. Medicines are given to the sick free of charge.[43]

In 1918, due to the difficult epidemiological situation in Ukraine, vaccinations against smallpox, cholera, and typhoid were organized for refugees. For example, in Poltava province, inoculations were given in the premises of the zemstvo administration and by a mobile zemstvo epidemic unit in Lubensky district. In July 1918, over 2,000 refugees were inoculated on a mass scale.[44]

A problematic issue was providing the evacuees with housing. Since the events of the conflict were unfolding in such a way that it had the prospect of turning into a long war, it was necessary to find options capable of providing for a stay of several years in a foreign land. It should be noted that the diverse mass of refugees—families with many children, orphans or children lost on the road, the elderly, the disabled, and the sick—required different approaches to solving the housing problem. Local committees prioritized "intelligent and semi-intelligent refugees", i.e. people with an education and "workers in intellectual professions", as well as girls and single young women who were potential victims of sexual violence, for whom special shelters were opened.

The authorities of the Russian Empire took the path of least resistance in this matter, settling the bulk of the refugees sent to the countryside with the local population. Such a move was a ticking time bomb, since over time social conflict arose. The local population, which had recently welcomed the refugees with hospitality and sympathy, in some cases simply threw them out into the street. The reactions of local inhabitants were understandable, since they had the considerable burden of providing their own homes for the new arrivals.

43 Zhvanko, *Bizhenstvo Pershoï svitovoï vijni,* 175.
44 Zhvanko, *Bizhenstvo Pershoï svitovoï vijni*, 372.

One could also speak of an interference in one's own world, with strangers living in one's home for several years. On the other hand, refugees did not always feel comfortable either, certainly there were domestic quarrels and grievances, and therefore getting a roof over their heads did not even represent an illusory peace of mind in the war.[45]

8 Conclusion

The Great War of 1914–18 was a tremendous ordeal for human civilization and led to fundamental changes in geopolitical and ethno-social dimensions. It brought not only catastrophic destruction, with huge numbers of victims on the battlefields, but also transformed the system of moral guidelines, degrading the very value of human life. Society's system of social roles was changed. New groups—refugees, deportees, prisoners of war—entered the scene, united in modern Western historiography by the single notion of displaced persons. Their emergence, as well as the fact of the movement itself, was a direct consequence of the military conflict.

A special place among these groups is occupied by refugees—civilians who, by the will of the military or out of fear for their lives, left their homes and settled in a foreign land for many years. This phenomenon acquired a special scale, unprecedented in comparison with previous wars, in the Russian-Austro-German theatre of military operations. The "eastern vector" of refugees was extremely powerful in terms of both voluntary evacuation and deportation actions by the Russian command. Ukrainian towns and villages received huge numbers of refugees, most of whom were women and children. Refugee women bore the brunt of the burden of the evacuation of families and the organization of life in the new places. Fear, uncertainty about the future, and the feeling of separation from their homeland were the daily companions for refugee women.

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CHAPTER 10

Galician Landscapes through the Camera Lens: Visualizing Combat Spaces of the First World War

Alexandra Likhacheva

This article investigates photographic practices employed to depict experiences of the First World War on the Eastern Front and construct militarized life-worlds.[1] The evidence is drawn from photographs taken by Russian servicemen and journalists in Galicia and currently held in the Russian State Film and Photo Archive (RGAKFD), as well as library and museum collections. The study relies on a synthesis of methodologies derived from spatial studies, military-historical anthropology, visual anthropology, and environmental history. The author proceeds from the hypothesis that photographic practices served to construct the mental maps of combat landscapes, to appropriate spaces annexed by the law of war, and to process individual front-line experiences.

Our analysis shows that, despite being perceived by contemporaries as frank accounts of reality, Galician landscape photographs were in fact complex phenomenological constructs. The photographic composition was in itself an act of interpretation. Images were created within the photographers' horizon of expectations, which was shaped by military propaganda and the photographers' cultural experience. The representations of reality through photographic imagery were determined by the technological limitations of the WWI period. Much also depended on whether the photographs were taken for personal purposes or on commanders' orders. The visualization of spaces of violence and mass death could perform therapeutic functions, with the camera acting as a protective barrier between the photographers and their subjects. Photographic albums compiled during the First World War and documenting the daily life of individual units of the Russian army in specific areas of Galicia should be regarded as coherent visual travelogues. A latent dimension of WWI military photographs which is discernible to the present-day researcher is the environmental impact of the First World War in Eastern Europe.

1 The research for this chapter was undertaken within the research project no. 21–59-14003 "Great War and the Anthropocene: 'Imperial Debris' and Environmental Change in Central-Eastern Europe;" supported by the Russian Foundation for Basic Research (RFBR).

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With the development of the photographic medium in the early 20th century, the visual representation of individual and collective experiences became a common practice during the "age of catastrophes". The increasing availability of affordable, light-weight cameras in the 1910s made it possible for World War I combatants to capture their wartime experiences; for the first time in human history, a military conflict was turned into a mass spectacle.[2] The snapshots of the devastated fields in Flanders or the ruined cities in France and Belgium shaped the visual canon of the Great War in the memorial traditions of the combatant countries. While amateur photography had already become the dominant photographic genre on the Western Front, most pictures from the Eastern Front during the first months of WWI were produced by war reporters. Fearing enemy espionage, the Russian military command and state censorship bodies imposed strict control on photography and filming in the front-line areas. The policy document "Provisions on Military Reporters in Wartime" (1912) limited the total number of war photographers permitted access to the front-line to just 20, including 10 foreign nationals; the photographers were allowed to illustrate their materials with short captions.[3] Later, the protracted nature of the conflict and the versatility of functions performed by photographs caused the authorities to lift the restrictions, which led to a growth in the number of both camera crews and pictures taken. Written sources also refer to the use of cameras by officers and medical personnel working on the front and in the front-line areas. However, differentiating between professional and amateur photographs with sufficient reliability may not always be possible.

Photographs of military operations and their consequences were mostly used as illustrations for reports written to inform the military authorities of the movement of forces or to describe the state of supply for the army; alternatively, photographic images could also serve as sources of cartographic data or appear in the context of propagandist publications aimed at the Russian and international readership in the rear. The choice of strategies for the visual representation of military experiences in the First World War cannot be explained solely by the effects of ideological propaganda and rigid censorship. By photographically documenting military operations and the realities of everyday life at the front, combatants and civilians were better able to capture, mentally process, and construct war spaces. In the post-WWI period, photographs shaped communicative and collective memories of 20th-century landscapes of death and destruction.

2 Klaus Jürgen Bremm, *Propaganda im Ersten Weltkrieg* [Propaganda in the First World War] (Darmstadt: WBG, 2013), 188.

3 RGVIA, f. 2000, op. 1., d. 4895, 1.78–84, Regulations on war correspondents in wartime.

At the turn of the 19th to 20th centuries, Galicia was the subject of close attention for the Russian Empire.[4] This was reflected in the activities of charitable and educational societies that mobilized the Russian population to help Russians "related" by origin and religion. An important role in this military propaganda was played by a combination of geographical and natural factors – the Carpathians as the "cradle of the Slavs", similar flora and fauna, and the unity of river systems. Galicia as the goal of the war for the Russian Empire was more understandable to the public, but it cannot be argued that, strategically, Galicia was the main area of military operations, compared, for example, with East Prussia. Following the offensives in Galicia and Bukovina in 1914–15 and later in 1916–17, the Russian army found itself in unfamiliar territory, which had to be integrated into the Russian empire. Although Russian military propaganda maintained that Russian and Galician countryside was alike, in actual fact the urban and rural scenery encountered by the Russian soldiers in the Austrian provinces differed markedly from central Russian landscapes. The new technologies of destruction, the hostility of the population, and the unfavourable epidemiological situation transformed the environment into a space of constant mortal threat. Images of nature as an uncontrollable adverse force and a targeted object abound in sources ranging from propaganda newsreels to private photographs. On the surface, the photographed war landscapes seem to be little more than a backdrop for historic events. However, combat spaces form the dominant subject in the majority of photographic materials. The reconstruction and interpretation of the photographic composition play a crucial role in the scientific analysis of images created on the front. In the absence of technological facilities for picture editing, the photographers had to carefully develop the composition of the shot in minute detail. As a result, the militarized environment became the principal subject matter of WWI snapshots, serving as a means to achieve the required visual effect and as a strategy for recording the emotions and impressions experienced by the photographer.

This study will proceed from the assumption that photographic representations of the Russian campaign in Galicia offer vast prospects for research on the previously unexplored strategies for the appropriation of alien spaces, on personal integration in combat landscapes, and on the development of nonverbal narratives about the first industrial war. Photographic practices and dissemination of front-line photographs in military culture acquire special significance for exploring the mental constructs pertaining to the new wartime

4 Mark von Hagen, *War in a European Borderland: Occupations and Occupation Plans in Galicia and Ukraine, 1914–1918* (Seattle: University of Washington Press, 2007).

reality. In particular, photographic practices offer valuable insights into the memorial culture of the First World War, a culture based on visual imagery.

1 Practices of Natural Landscape Photography During the First World War: Historiographical Debates and Methodological Approaches

The visual turn in the humanities has created important methodological premises for historians to regard photographs, including military snapshots, as proper objects of scientific study rather than merely pictorial accompaniments. However, most research addressing the Eastern Front of the First World War rarely goes beyond defining the role of photography in the military propaganda launched by the participating countries, including Austria-Hungary,[5] Russia,[6] and Germany. Until recently, opportunities for reconstructing the spatial and military history of WWI by analysing photographic images have been largely overlooked by researchers.

In this chapter, I will attempt to explore the visual narrative about the conflict between human beings and the natural environment. The methodology used here for investigating the visualization of military operations on the Eastern Front of the First World War is based on a symbiosis of approaches derived from spatial studies, visual and military-historical anthropology, and environmental history.

According to Nicholas Saunders, the understanding of the term "war landscape" is not only based on "the original geographical location, geological nature, the cultural landscape at the time of the military event"; it also depends on "the various ways in which it lives on in memory and is physically reconfigured so that real worlds and memory worlds are brought into alignment".[7] Johannes Renes's cultural-geographical concept of "layered landscapes" includes the intellectual layer, which results from the construction

5 Hannes Leidinger, "Vizualizaciya Vostochnogo fronta v Avstro-Vengerskoj propagande Pervoj mirovoj vojny" [Visualization of the Eastern Front in Austro-Hungarian propaganda of the First World War], *Quaestio Rossica*, no. 1 (2014): 112–28.

6 Veronika Anatolyevna Smorodina, "Dokumental'naya fotografiya v rossijskih illyustrirovannyh izdaniyah perioda Pervoj mirovoj vojny (1914–1917 gg.)" [Documentary photography in Russian illustrated periodicals of the First World War (1914–1917)], (PhD diss., St. Petersburg State University, 2000), 295.

7 Nicholas J. Saunders, "The Dead and their Spaces. Origins and Meanings in Modern Conflict Landscapes," in *Conflict Landscapes: Materiality and Meaning in Contested Places*, eds. Nicholas J. Saunders and Paul Cornish (London: Routledge, 2021), 386.

of imagined natural and anthropogenic spaces via cultural products seeking to make sense of certain events and situations.[8] Both of these assumptions are relevant to my study as they suggest that war photographers, rather than portraying combat landscapes for what they are, construct them in the visual canon by blending the real environment and its imagined analogues.

For the audiences, including viewers that remained in the rear and had no personal exposure to front-line experience, the photographs would have portrayed an unfamiliar reality. Both the recipient and the producer of visual images shared an illusion of appropriating the enemy's environment. This sentiment, albeit not with regard to war landscapes, was expressed by Susan Sontag, who wrote: "Just as photographs create the illusion of owning a past that does not exist, they help people to own a space where they do not feel confident".[9] In describing the photographic experience, Roland Barthes claimed that photographs defy classification. He believed that each photograph must be interpreted individually as its meaning may not be discoverable other than by analysing the subjective experiences which caused the photograph to come into being.[10]

Bernd Hüppauf emphasizes the inextricable connection between the visual reflection of totalized violence and the construction of reality via the photographic composition. The author suggests that the abundance of amateur Holocaust photographs may be explained by the role of the camera as a protective barrier for the photographer, which provided an imaginary opportunity to detach oneself from the atrocities.[11] This approach seems particularly relevant to interpretation of First World War photographs which depict dead bodies, suffering refugees, and other consequences of the humanitarian disaster brought on by the war.

An analysis of the (chiefly staged) photographs taken during the industrial war requires a methodology that combines principles of the phenomenology

8 Johannes Renes, "Layered Landscapes. A Problematic Theme in Historic Landscape Research," in *Landscape Biographies*, eds. Jan Kolen, Johannes Renes, and Rita Hermans (Amsterdam: Amsterdam University Press, 2015), 403–21.

9 Susan Sontag, *O fotografii* [On Photography], trans. Victor Golyshev (Moscow: Ad Marginem Press, 2013), 20, 52.

10 Roland Barthes, *Camera lucida: Kommentarij k fotografii* [Camera Lucida: Reflections on Photography], trans. Michail Ryklin (Moscow: Ad Marginem Press, 2011), 28.

11 Bernd Hüppauf, "Der entleerte Blick hinter der Kamera" [The emptied view behind the camera], in *Vernichtungskrieg. Verbrechen der Wehrmacht 1941–1944,* eds. Herausgeber von Hannes Heer and Klaus Naumann (Hamburg: Hamburger Institut für Sozialforschung, 1995), 504–30.

of the image with traditions of research on the visual representation of war events and combat landscapes. A large body of visual sources available from the RGAKFD offers considerable potential for investigating the combatants' practices of recording front-line experiences and constructing militarized life-worlds. Our analysis of the photographic situation on the Eastern Front and the subsequent functioning of visual imagery in group and collective communication draws on the following materials:

1. The albums "Defensive positions and destruction caused by the enemy; views of streets and buildings on the sites of military operations on the South-Western Front in Chernovitsy, Dubno, and Lutsk"[12] and "Views of Galicia and destruction brought by war" (1914–16).[13] These are of especial interest in the context of this study. Most of the photographs contained in the albums portray a variety of combat landscapes, including natural, rural, and urban spaces affected by the war or located in the front-line areas and adapted for military purposes. This group of materials also incorporates a series of photographic albums documenting the campaign and battlefield realities of the Russian staff and army formations on the South-Western Front.[14] Photographic albums form a special data source which must be regarded as a coherent visual narrative. A considerable research challenge associated with these materials is the absence of textual data. In the vast majority of cases, information on the identity of either the photographers or the subjects is unavailable; the dates and sites of the events are often missing and may only be reconstructed from the context or the logical sequence of images in the albums.
2. Individual photographs, organized by RGAKFD into the themed categories "The First World War" and "The Battle of Galicia". This group includes separate images which do not occur as part of collections or albums. The photographs of this type represent active hostilities in Galicia (including the Carpathians), the views of ruined fortresses in Przemyśl and Lviv, and the aftermath of the Austrian retreat. Most of the photographs

12 RGAKFD, al. 36, Combat positions, destruction by the enemy; views of streets and buildings in places of military operations of the South-Western Front in the cities of Chernivtsi, Dubno and Lutsk.

13 RGAKFD, al. 966, Views of Galicia and destruction brought by war, 1914–16.

14 RGAKFD, al. 92, Photographs from the military life of the headquarters and units of the 9th Army, 1914–16; RGAKFD, al. 121, Photographs from the military life of the headquarters and units of the 9th Army, 1914–16.

documenting the camp and campaign life on the South-Western Front feature images of the mass death of combatants.[15]

2 The Wartime Visual Travelogue: Galician Landscapes through the Photographic Lens

Photographic materials which originated during the period of military successes in Galicia (before the late spring of 1915) manifest the key messages of the Russian military propaganda which sought to represent the Russian invasion in the Austro-Hungarian provinces as fair and justified. Due to the potential for the photographic medium to be perceived as a source of objective information about reality, the photographic images were used to reinforce the state-constructed war discourse among the Russian public. The photographs taken during the Russian westward offensive and the occupation of Galicia mainly focused on the economic potential of the seized territory and its agricultural specialization, visually symbolized by ploughed fields, herds of cattle,[16] and natural wealth (bodies of water and forests).[17] (Figures 10.1 and 10.2)

This visual evidence resonates with impassioned media publications which motivated the reading public to support the war and shaped the image of Galicia as a land flowing with nature's bounty, whose resources promised considerable economic benefits for the Russian Empire: "The conditions for trade development in Galicia are nothing less than brilliant";[18] "The north-western corner of Galicia offers a remarkable variety of mineral resources such as zinc, lead, iron and sulphur ore as well as significant deposits of hard coal".[19]

Early WWI photographs contained another ideological dimension that figured among Russia's goals in the war against Austria-Hungary, namely the

15 RGAKFD, al. 531, ph. 156, Soldiers in the trenches; RGAKFD, ph. 233189, From a trench, soldiers watch the enemy's driveway; RGAKFD, al. 23, ph. 26, Soldiers in the trenches at Przemyśl, 1915.

16 RGAKFD, al.1243, ph. 35, Teenage children from the village of Rakitno ploughing the land with a horse-drawn plough, March 27, 1916; RGAKFD, ph. 233466, Cattle prepared for slaughter.

17 RGAKFD, al. 1243, ph. 56, A waterfall near the village of Rzhavintsy in Bukovina, May 19, 1916.

18 Dmitry Nikolaevich Vergun, *Chto takoe Galiciya?* [What is Galicia?] (Saint Petersburg: Lukomorye, 1915), 59.

19 Vasily Yakovlevich Ulanov, *Galiciya v ee proshlom i nastoyashchem* [Galicia in its past and present] (Moscow: I. N. Kushnerev & Co, 1914), 10.

FIGURE 10.1 RGAKFD, al. 1243, ph. 35 Teenage children from the village of Rakitno ploughing the land with a horse-drawn plough. March 27, 1916

FIGURE 10.2 RGAKFD, ph. 233466 Cattle prepared for slaughter

imperative to free the Slavic (Orthodox) people from the German and Hungarian yoke. The vision of Galicia was constructed by photographers via images reflecting the customs and mores of peasant life and via pictures of everyday labour.[20]

The primary focus of attention remained on Galicia's geographical environment and features which were untypical of the Russian nature and climate. One such prominent feature is the Carpathians, the most significant physical barrier between Galicia and the rest of Austria-Hungary. Photographers tended to select subjects uncharacteristic of the "Russian" living environment, such as the "forested" mountains, Carpathian wildlife, or the contingency between mountainous and river landscapes.[21] The exoticization of the appropriated space served to reaffirm Russia's military presence and to document the process of resource exploitation in the invaded area. The Russian propaganda portrayed the Carpathians as the cradle of the Ruthenian (Rusyn) ethnicity in the heart of Europe: "What then endears Galicia to us? As an adult cherishes the cradle they once lay in, so it is natural that we should be interested in the Carpathians, the 'kolyska' [cradle] of our people, the place 'from whence the Russian land came to be', as the scientists claim."[22] This geopolitical message was augmented by visual means. The photos project the image of the Carpathian Mountains as strong and immutable; the exoticization of the Carpathians is achieved by emphasizing their monumentality and fairy-tale ambience.

Besides the geographical and biological imagery, many photographs of the territories seized by the Russian army depict urban landscapes. Photographs organized into albums form a coherent narrative, a visual travelogue.[23] Images of this type are a non-verbal counterpart to travellers' notes, aimed at visually reaffirming Russia's presence in the captured territory. Views of cities fall into two groups: pictures of buildings untouched by destruction, and pictures of spaces disfigured by war.

The first group of photos shows the recognizable architectural and historical landmarks of Galician cities, including Lviv and Przemyśl; the visual message appears to resonate with verbal testimonies of Eastern Front combatants: "The headquarters have moved … much closer here. This is good—we can at

20 RGAKFD, al. 1243, ph. 67, View of the bivouac of the 1st Battery in the village of Voskresentsy near the town of Kolomyia in Galicia, June 17, 1916; RGAKFD, ph. 201, Peasant hut, children.

21 RGAKFD, al. 1243, ph. 85–95, View of the mountains near Degtentsy in the wooded Carpathians, August 14, 1916.

22 Vergun, *Chto takoe Galiciya?*, 54.

23 RGAKFD, al. 121, ph. 57–59, Lviv on the first day of the Russian occupation. Street patrol; closed shops.

least see some new places".[24] The motif of new impressions from combat landscapes manifests itself in the combatants' accounts of visits to tourist attractions, including natural landmarks like caves, waterfalls, or cliffs. The stories evoke images of peacetime sightseeing tours: "I passed Brzeżany, a remarkably clean, lovely town …",[25] "Zaleszczyki is a half-ruined town on the side of the Dniester". The Galician landscapes photographed during the Russian occupation display visual markers of war, such as Russian Cossack patrols on the streets of Lviv, or the closed shops on the city square.[26] At the same time, urban combat landscapes are constructed in conformity with the canons of painting: the carefully selected angles, the elaborate composition, the absence of casualties or serious war damage. This group of photographs was intended for Russian viewers and sought to demonstrate the chaos of war defeated by the Russian army and to promise fast restoration of peaceful life.

The second group typically portrays ruined buildings and structures.[27] These photographs may have accompanied reports submitted by the local administration to inform superior authorities of the estimated costs of rebuilding. The protracted hostilities and changes in the initial strategic plans regarding Galicia altered the representation mode employed by Russian war photographers. Fewer and fewer photos express emphatically heroic stances; increasingly more pictures taken on the Eastern Front during the 1915 campaign represent demolished civilian objects, including city buildings. Panoramic pictures in which urban spaces resemble enormous piles of debris rather than recognizable cityscapes were aimed at dehumanizing the adversary and exposing the atrocities committed by the enemy, as well as informing the viewers of the cost of the Russian victory at Przemyśl. (Figure 10.3)

There are several distinct patterns that can be identified in the photographic construction of the Galician environment and space. The most prevalent pattern illustrates how the horizon of expectations of Russian society is shaped by propagandist messages marking Galicia as alien and strange at present, but

24 RNB, f. 1139. d. 340. 1. 34, Ognev Ivan Nikolaevich, pilot, letters to Nikolai Vasievich and Tatiana Ivanovna Ognev 1916–1917.

25 Joseph Ilyin, *Skitaniya russkogo oficera: Dnevnik Iosifa Il'ina. 1914–1920* [Wanderings of a Russian Officer: Diary of Joseph Ilyin. 1914–1920] (Moscow: Knizhnitsa, Russian Way, 2016), 117.

26 RGAKFD, al. 104, ph. 38, View of one of the streets of Lviv during the occupation of its Russian troopship; RGAKFD, ph. 39, The first day of the lesson in Lviv. Patrolling on the city street and closed shops.

27 RGAKFD, al. 966, ph. 23, A ruined railway bridge; RGAKFD, ph. 415670, Ruins in Gusyatino, 1916.; RGAKFD, ph. 243320, Destroyed Bridge over the Vistula, 1915.; RGAKFD, al. 32, ph. 41, Bridge blown up by Russian troops on the Tremovlia-Strusov-Korovyaki road, 1915.

FIGURE 10.3 RGAKFD, ph. 34107 Dead Russian soldiers in the defensive positions near Jarosław. Galicia, 1914–1916

part of Russia in prospect. Curiosity and recognition are the two dominant emotions experienced during the movement across the occupied province; the emotions pervade both the visual narrative of travel and the combatants' written narratives with their verbal "tourist snapshots".

The images are echoed by the verbal testimonies of the military involved in the Russian occupation of Galicia. Infantry officer Yakov Yevgrafievich Martyshevsky remembered the idyllic Galician landscapes as a space for exploration and discovery rather than invasion. This message is emphasized by means of the travelogue clichés and tourist terminology used by the author: "Observing the surroundings, I could not help thinking about the thing that had forced me to take up arms against this alien, comfortable, and seemingly peaceful land—I could not help thinking about the war. Sometimes the beautiful, heartwarming countryside landscapes made me think that whatever was happening here was but a pleasure trip or research expedition abroad, not a war".[28]

3 Visualizing the Trauma of Military Defeat

The Great Retreat of the Russian army in 1915, the loss of almost all captured lands, and the beginning of hostilities on the territory of the Russian Empire

28 Yakov Yevgrafievich Martyshevskij, *Po skorbnomu puti. Vospominaniya. 1914–1918* [On a sorrowful path. Memories. 1914–1918] (Moscow: Kuchkovo pole, 2016), 33.

brought about a shift in the visual narrative. This shift was particularly evident in the content domain: pictures of heroes and attacks were now almost entirely replaced by photographs emphasizing the importance of social responsibility, charity, ensuring adequate food supply, and support for the field army.[29]

The once peopleless city vistas and views of unspoilt nature gradually gave way to photographs filled with explicit "markers" of war. Over time, the suffering civilian population, women and children, became canonical symbols of the tragic consequences of war.[30] One vivid example of a photograph that captured work on belligerent spaces and was used for reporting purposes is an image that shows members of the local community building a dam in a frontline area in Galicia. Some of the workers involved in the dam construction and groundworks are women; the broad camera angle conveys the scope and complexity of the project. The construction work, which apparently became necessary because the original structure had been demolished, illustrates the interaction between the local residents and the occupation administration: the Russian authorities were compelled to rely on female labour resources due to the shortage of male workers.

The practice of photographing combat landscapes performed a therapeutic function, acting as a psychological response to the horrors of the war.[31] By processing traumatic experience, photography served as a kind of portal into a new/unfamiliar reality. The visual depiction of wartime social phenomena leads to their gradual acceptance and thereby helps with mentally distancing oneself from them. Thus, photos showing dead bodies connote the "normality" and high prevalence of death in war.

Photographs dating from the early period of the First World War are consistent with the art canons governing the representation of heroic death in 19th-century battle painting. Pictures showing a single dead person, which were prevalent at that time, represent death on the battlefield as unique and honourable, much as their precursors in painting did.[32] This artistic continuity, however, broke down due to the protracted nature of the conflict. Photographs

29 Lejdinger, "Vizualizaciya Vostochnogo fronta," 112–28.

30 RGAKFD, al. 92, ph. 6, Building a dam on the Lypa River. Work on driving and backfilling of piles.; RGAKFD, ph. 65, Building a dam on the Lypa River. Women performing groundworks; RGAKFD, ph. 76, Building a dam on the Lypa River. Construction works. General aspect, 1915.

31 Margarita Kevac, "Fototerapiya kak instrumentarij psixoterapii" [Phototherapy as a psychotherapy tool], *Konsul'tativnaya psixologiya i psixoterapiya* [Counseling psychology and psychotherapy] 23, no. 3 (2015): 117–26, https://doi.org/10.17759/cpp.2015230309.

32 RGAKFD, ph. 34107, Dead Russian soldiers in defensive positions near Jarosław. Galicia, 1914–16.

FIGURE 10.4 RGAKFD, ph. 2–48400, Dead soldiers near a wire entanglement, 1914

FIGURE 10.5 RGAKFD, al. 966, ph. 23 A ruined railway bridge.

representing multiple casualties testify to the fact that mass death at the front in the new context of the industrial war was gradually normalized. The photos typically show survivors posing for the camera against the background of the dead laid out in the field, like in a snapshot taken in Bukovina in 1916;[33] the image vividly demonstrates the transformations which had taken place in visual (self-)censorship. By 1916, photos of dead people, which used to be rare during the first months of the invasion, had lost their potential to shock. Many pictures were staged, judging by the impeccably straight horizon, the clear symmetry of the objects, and the people looking directly at the camera. (Figures 10.4 and 10.5)

The heavy human losses on the front and the complicated epidemiological situation on the battlefields made it necessary to organize burials in the captured territories in an orderly manner. Mass and individual graves were a common subject of photographs taken on the Eastern Front. Photos of burial ceremonies and funeral services typically show comrades-in-arms of the fallen servicemen, and members of the Russian Orthodox clergy; a Russian army field church features in many of the pictures.[34] Panoramic broad-angle views of cemeteries contain overt religious symbolism and proceed from the desire to pay respect to Russian Orthodox traditions and the last tribute to the dead.[35] On the other hand, photographs of this type may document compliance with the official regulations governing military burials: "soldier graves must be marked with the number of the personnel buried, officer graves with names".[36] The importance attached to the photographic recording of burial sites is also confirmed by the cartographic material from the Russian-Austrian Front.

4 Industrial War through the Camera Lens: a Record of Destroyed Spaces

One element present in many photographs of combat landscapes is the innovative weapons (heavy cannons,[37] large bombs and shells,[38] spy planes, and

33 RGAKFD, al. 966, ph. 74, Dead soldiers on the battlefield near Khyriv, 1916.

34 Multimedia Art Museum, Near Jarosław: Graves of Russian soldiers and officers that died in hospitals and on the Austrian Front, 1915; RGAKFD, ph. 293532, Church on the Front: Construction of a church of spruce branches on the front positions, 1914–16.

35 RGAKFD, 2–100-481, Funeral team at the bodies of the dead.

36 GARF, f. 13216, op. 1, d. 42. 1.70, Extract from the instructions on the order of burial of the killed on the battlefields and the recovery of these fields.

37 RGAKFD, 2–48350, Motorization of the army. A tank during the war of 1914.

38 RGAKFD, al. 1243, ph. 62, 12" bombs and shrapnel captured by Russian troops in the vicinity of Okna station. Bukovina, 1916.

zeppelins).[39] The "studio-portraiture approach" and the domination of static images are apparent: the soldiers pose with the military "curiosities", which serve as props and visual tokens of the subjects' experience;[40] hence the emotional atmosphere of such photographs which commonly show soldiers smiling into the camera. Apart from the obvious message sent by the demonstration of military technology and weapons, the photos convey connotative meanings,[41] the imagery of technological facilities performs multiple functions. Russian military equipment[42] is always photographed in perfect working state to signal the high technical standard and invincibility of the army. Enemy equipment and weapons, on the contrary, are represented as military trophies, often damaged or abandoned, and act as a tangible symbol of victory over the adversary.[43]

One latent dimension of the First World War images, which went unnoticed by their authors but is evident today, is the environmental impact of the military operations. The composition aids the appreciation of the enormity of the damage that the war had caused to nature; for example, this effect can be achieved by showing human figures looking disproportionately small next to a shell crater.[44] Connotative messages are conveyed through the postures of the human subjects and by means of the camera angle. The foreground concentrates the viewer's attention on the standing servicemen, whereas the background demonstrates the scale of the recent battle and its effect on the natural landscape. Additionally, human impact on the environment is demonstrated by showing stocks of gas cylinders on the front line,[45] heaps of bombshells,[46] large metal debris at battle sites,[47] and soil bombturbation.

The effects of destructive weapons on the Eastern Front battlefields form the subject of many photographs. Some pictures record the increasing technical

39 RGAKFD, II-203, index 3010, Russian soldiers and officers watching a flying zeppelin.

40 RGAKFD, al. 1243, ph. 78, Russian soldiers near a German 3-inch gun captured in a battle near Grushki, West Ukraine, 1916.

41 Barthes, *Camera lucida*, 378–92.

42 RGAKFD, al.1243, ph. 17, A machine-gunner firing a Maxim machine-gun from the machine-gun niche of the Azov Regiment's trench against the village of Dolzhka. March 11, 1916; RGAKFD, ph. 19, Machine-gunners firing at enemy aeroplane from a trench of the Azov Regiment. March 11, 1916; RGAKFD, ph. 36, Armoured steam locomotive.

43 RGAKFD, al. 37, ph. 31, Soldiers stacking captured Austrian rifles. The region of Chernivtsi, 1916; RGAKFD, al. 1243, ph. 62, 12" bombs and shrapnel captured by Russian troops in the vicinity of Okna station. Bukovina, 1916; RGAKFD, al. 1243, ph. 78, Russian soldiers near a German 3-inch gun captured in a battle near Grushki, West Ukraine, 1916.

44 RGAKFD, ph. 2–113533, Officers standing in a crater from a large-calibre shell explosion.

45 RGAKFD, ph. 232942, A battery of gas containers in a defensive position.

46 RGAKFD, ph. 243296, Casings from artillery shells near a railway line (Russian–German Front).

47 RGAKFD, ph. 257876, Destroyed automobiles and tanks on a battle site near a forest road. The Austrian Front, 1914.

FIGURE 10.6 RGAKFD, al. 1243, Bukovina 1916. Album with photographs of destruction (P.O.Dembitsky's album was transferred to the archive in 1966), ph. 185

FIGURE 10.7 RGAKFD, ph. 257876, Destroyed automobiles and tanks on a battle site near a forest road, The Austrian front, 1914

FIGURE 10.8 RGAKFD, ph. 232942, A battery of gas containers in a defensive position.

FIGURE 10.9 RGAKFD, ph. 243296, Casings from artillery shells near a railway line (Russian–German Front)

sophistication of protective equipment in response to the broader use of poison gases for attack or defence. Photographs may show charcoal gas masks on both servicemen and baggage animals. One particular photo vividly illustrates the close interrelation of the environmental and technological aspects of the war.[48] It may have been intended as an illustration to a report on a recent protection equipment test. (Figures 10.6, 10.7. 10.8 and 10.9)

5 Conclusion

In the years of the First World War, and specifically during the Russian occupation of Galicia, photography performed practical functions: it served to document the movement and current state of the Russian forces, to illustrate reports submitted to military authorities, to conduct reconnaissance, or to inform the audiences in the rear. Today, World War I photographs provide a valuable source of evidence for research on the spatial and environmental history of the first industrial conflict.

The Galician combat spaces represented in photographs dating from 1914–16 may be grouped into several types: natural landscapes which represent an exoticized portrayal of Galicia; urban landscapes which reinforce the presence of the Russian army in the occupied areas; and militarized landscapes which reflect the nature and consequences of the military conflict.

The documentary essence of photography cannot be automatically transferred to the description of the functioning of the photographic language and the perception of photography by the viewer. On the contrary, the special connection between photography and real objects or events, i.e., the ways these objects and events are constructed in direct communication and delayed commemoration, deserves close examination. Galician landscapes captured in photographs are a phenomenological construct rather than actual reality or indisputable evidence: their primary purpose was to reconstruct the experience of industrial warfare and the appropriation of combat landscapes. Photographic images emerge as acts of interpretation as the photographers were driven by imperatives of their own (pre-war) life experience and by their beliefs formed under the impact of dominant discourses. The reflection of first-time exposure to unfamiliar landscapes is laden with the ideologies and cultural baggage of the combatants and war reporters. My comparison of visual and written sources suggests that photographic images are aligned with messages

48 RGAKFD, al. 1243, ph. 85, View of the mountains near Degtentsy in the wooded Carpathians, August 14, 1916.

conveyed by the military propaganda, with individual combatants' narratives, with interdepartmental discourses of military authorities and the occupation administration, and with cartographic products.

The analysis of photographic sources reveals a dynamic connection between the strategies used for wartime experience representation, on the one hand, and the course of military operations, on the other. The retreat of the Russian army from Galicia following a period of occupation was marked by a thematic and compositional transition from glorifying the war to representing the destructive consequences of armed conflicts in general. Similarly, the protracted warfare induced changes in the practices of photographing the dead servicemen and burial sites; over time, increasingly more war photographs featured multiple rather than individual dead bodies or organized soldier and officer graves. The photographs capture the atmosphere of the humanitarian disaster experienced by the local residents: the dam construction, the ploughing boys and women, all left alone in a land occupied by the enemy army.

Photographic albums recording the life of individual units of the Russian army or containing series of snapshots taken across Galicia are most effectively interpreted within the framework of the visual travelogue. Visual narratives of this type display all the signs of "classic" traveller stories. The use of the photographic medium makes it possible to expand the verbal description into a dynamic narrative about the movement across the occupied territory, to situate events in space and time while seamlessly incorporating human subjects, war hardships and obstacles, and thereby to visually appropriate Galicia and mentally annex it to the Russian Empire.

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RGAKFD. Al. 121. Ph. 38–39, 57–59. Lviv on the first day of the Russian occupation. Street patrol; closed shops.

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RGAKFD. Al. 1243. Ph. 17. A machine-gunner firing a Maxim machine-gun from the machine-gun niche of the Azov Regiment's trench against the village of Dolzhka. March 11, 1916.

RGAKFD. Al. 1243. Ph. 19. Machine-gunners firing at enemy aeroplane from a trench of the Azov Regiment. March 11, 1916.

RGAKFD. Al. 1243. Ph. 201. Peasant hut, children.

RGAKFD. Al. 1243. Ph. 35. Teenage children from the village of Rakitno ploughing the land with a horse-drawn plough. March 27, 1916.

RGAKFD. Al. 1243. Ph. 36. Armoured steam locomotive.

RGAKFD. Al. 1243. Ph. 56. A waterfall near the village of Rzhavintsy in Bukovina. May 19, 1916.

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RGAKFD. Al. 1243. Ph. 78. Russian soldiers near a German 3-inch gun captured in a battle near Grushki, West Ukraine, 1916.

RGAKFD. Al. 1243. Ph. 85–95. View of the mountains near Degtentsy in the wooded Carpathians. August 14, 1916.

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PART 4

Imperial Debris: Demilitarization of Landscapes in the Era of Imperial Collapse

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CHAPTER 11

Toxic Heritage of the War: Demilitarization of Eastern Front Landscapes

Yulia Zherdeva

1 Introduction[1]

The Great War altered human–environmental interactions. Nature, regarded before 1914 as a wellspring of romantic sentiment, a factor of economic prosperity, or a space free from human presence, came to be seen after 1918 as entirely subject to anthropogenic influence. People now faced a greater danger from poisoned water and air, mined fields, decaying corpses, and other consequences of human impact than from the natural elements. The relationship between military and civilian spaces also shifted. In the pre-war period, European urban residents saw outings to the countryside as a means to flee the constant pressures of civilization; the war made such trips unfeasible (in some areas forever), forcing city dwellers to seek escape instead in the social practices of "the roaring 1920s". These changes may have been due to the fact that the Great War, as Aaron J. Cohen emphasized, "collapsed the distance between the frontlines and the home front on an unprecedented scale".[2]

The militarized space of the First World War displayed a number of physical and mental features that were markedly different from those found in a peaceful pre-war landscape. The war zone was dangerous, both actually and potentially, with fields and forests scarred by deep trenches, indented with shell craters, filled with rotting human and animal bodies, and littered with landmines, abandoned weapons, and forgotten shells; soil polluted with toxic chemicals; rivers and wells contaminated with infections; and forests turned into swamps and fields into "scorched earth". Not only soil and water but the very air had become hazardous; according to Nicholas Saunders, "air itself had

1 The research for this chapter was funded by the Russian Foundation for Basic Research (RFBR) within the framework of research project № 21-59-14003 "Great War and the Anthropocene: 'Imperial Debris' and Environmental Change in Central-Eastern Europe".

2 Aaron J. Cohen, "Neither Here Nor There: War Memorial Landscape in Imperial Russia, the Soviet Union, and the Russian Emigration, 1914–1939," in *Landscapes of the First World War*, eds. Selena Daly, Martina Salvante, and Vanda Wilcox (Basingstoke: Palgrave Macmillan, 2018), 175.

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been weaponised, carrying also the stench of death, the sounds of dying, and the palpable heat of killing".[3] How lasting was the impact of military practices on the environment? How much time and what resources were required to overcome the most scathing effects of the war? How did the armies drawn into the military conflict approach these challenges?

The Eastern Front of World War I covered a vast territory sweeping across the East European Plain from Baltic to Black Sea, and extended the theatre of war over the western fringes of the Russian Empire and the eastern regions of Austria-Hungary and Germany. The war led all three empires to a catastrophic decline, causing them to disintegrate into new sovereign entities mostly known at present as Eastern European states.[4] The primary focus of this chapter is Galicia, which formed part of Austria-Hungary at the beginning of WWI and was the foremost area of Russia's territorial claims. However, the instability of the Eastern Front and the logic of the demilitarization processes, which by late 1917 had affected the entirety of the Russian forces throughout the Eastern Front, make it necessary to incorporate the neighbouring regions into the scope of our analysis. Consequently, our study will address the regions where the Russian army was present during the final stages of the war and the associated demilitarization (Bukovina, the Volhynia Governorate in Right-Bank Ukraine,[5] the north-western Minsk and Vilna Governorates, and the Baltic provinces).

The war created an obvious tension between space and time. As Christoph Nübel correctly stressed, "fundamental experiences of the war were intrinsically spatial";[6] interaction with space remained an ever-present dimension of warfare. Demilitarization was "hardwired" into military spatial experiences: the transportation of wounded soldiers and officers from the battlefield, the burial of dead men and livestock, weapon collection, and the dismantling of military structures are just some of the most visible examples of spatial demilitarization practices during active hostilities. The end of the war, however, changed both the pace of demilitarization and the forms this process took.

3 Nicholas J. Saunders, "The Dead and Their Spaces: Origins and Meanings in Modern Conflict Landscapes," in *Conflict Landscapes: Materiality and Meaning in Contested Places*, eds. Nicholas J. Saunders and Paul Cornish (London: Routledge, 2021), 7.

4 Timothy C. Dowling, "Eastern Front," in *1914–1918-online. International Encyclopedia of the First World War*, eds. Ute Daniel et al. (Berlin: Freie Universität Berlin, 2014), http://dx.doi.org/10.15463/ie1418.10316.

5 Daniel Beauvois, *Gordiev uzel Rossiĭskoĭ imperii: Vlast' shliakhta i narod na Pravoberezhnoĭ Ukraine (1793–1914)* [The Gordian knot of the Russian Empire: The power of the nobility and the people in Right-Bank Ukraine (1793–1914)], trans. Marija Krisan' (Moscow: Novoe literaturnoe obozrenie, 2011), 7.

6 Christoph Nübel, "Warscapes: Managing Space on the Western Front, 1914-1918," in *Past Societies: Human Development in Landscapes*, eds. Johannes Müller and Andrea Ricci (Leiden: Sidestone Press, 2020), 182.

After the First World War, these dangerous qualities of the combat landscape would not disappear overnight, once the military operations had ceased and the peace treaty had been signed; moreover, on the Eastern Front, the transformation of combat landscapes into peaceful ones was slowed by new military conflicts. In a study addressing the Western Front, Tait Keller quoted the American author Corinna Haven Smith, who travelled to the war-scarred area near Ypres in 1920 and was struck by how "grass has grown over the shell holes and sheep and goats are grazing among abandoned tanks".[7] In 1919, an unknown British officer visiting the field of the previous year's battle left the following melancholic account of this experience in his diary:

> The place was scarcely recognisable. Instead of a wilderness of ground torn up by shells, a perfect desolation of earth without a sign of vegetation, the ground was a garden of wild flowers and tall grasses. Nature had certainly hidden the ghastly scene under a veil of many colours.[8]

The situation on the Eastern Front, however, was quite different. In spring 1919, the Soviet Ukraine Commission for Rehabilitation of Refugee Households, quoting the surveys conducted in the Volhynia zemstvo, described the catastrophic state of the front-line territories where the war was still raging. The hostilities had turned the once prosperous Volhynia into a "wasteland":

> Many prosperous towns and villages have turned into scorched ruins … the fields, which have not been tilled for several years, are overgrown with weeds beyond recognition; the colossal forests, not to mention the orchards, have been destroyed; in some areas ponds have dried out, leaving vast swaths of land parched, while in the others croplands have degraded into swamps.[9]

"We are now to create life in the wasteland", this was the economic imperative faced by Soviet officials in Volhynia in 1919,[10] and even until 1920 in Kharkiv,

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7 Tait Keller, "Mobilizing Nature for the First World War. An Introduction," in *Environmental Histories of the First World War*, eds. Richard P. Tucker et al. (Cambridge/New York: Cambridge University Press, 2018), 2.

8 Richard van Emden, *Tommy's Ark: Soldiers and Their Animals in the Great War*, 1st ed. (London/New York: Bloomsbury, 2010), 305.

9 GARF, f. R3333, op. 3, d. 140, l. 9, memo "Regulations on the Commission for Rehabilitation of Households in the Regions of Ukraine Destroyed by Foreign War," May 1919.

10 GARF, f. R3333, op. 3, d. 140, l. 17, journal of the Commission for Rehabilitation of Refugee Households, May 24, 1919.

which is located further eastward.[11] To what extent the combat space decontamination experience accumulated by the Russian army over the period 1914–1917 could have been useful in addressing these challenges and what impact this experience may have had on the post-war demilitarization are issues which demand particular attention.

In this paper, I will examine the practices of overcoming the toxic legacy of the war, including, in particular, efforts aimed at the sanitation and rehabilitation of battlefields that had been subjected to gas attacks and the demobilization of animals. These practices will be analysed over a period spanning from 1914 to 1918, with a focus on their regulatory aspects. Demilitarization will be construed here as a cluster of activities undertaken during and after the war which involved the physical transformation of combat landscapes and the repairing of the noxious damage caused by World War I. Examples of these activities include the withdrawal of field armies; disposal of military equipment and facilities; and termination of specific wartime practices such as soil intoxication, water pollution, deforestation, flooding of forests and fields, etc.

The study draws evidence from documents issued by the command of Russian armies that fought in Galicia, Bessarabia, and, to a lesser extent, in Poland and the Baltic Sea region. All the sources used here are held in Russian archives (Russian State Military-Historical Archives/RGVIA, Russian State Military Archives/RGVA, Russian State Historical Archives/RGIA, and State Archives of the Russian Federation/GARF). Many of the documents are open access on the website of the large-scale online project "In Memory of Heroes of the Great War".[12] In order to obtain a clearer understanding of the ways these regulations were implemented, I will be relying on ego-documents, primarily those authored by persons directly involved in field sanitation.

2 Battlefield Sanitation

The first section of my chapter will centre on battlefield sanitation. Predictably, sanitation issues at the beginning of World War I were closely connected with practices of individual and mass burials. Autumn 1916 witnessed some serious changes in regulations governing these practices. While the regulatory documents dating to the first months of the hostilities reflected the experience

11 RGVA, f. 47, op. 1, d. 598, l. 572, reports on the activities of the Military District Administrative office from 1917 to 1920, 1920.

12 "In Memory of Heroes of the Great War. 1914–1918," Online project, accessed May 28, 2023, https://gwar.mil.ru.

of previous wars involving the Russian army, by 1916 the instructions had absorbed the experience specific to the Great War. Let us analyse this evolution in more detail.

The symbolic transformation of the burials of Russian soldiers during the Great War is as important an aspect of these practices as the physical burial itself. Analysing this transformation, Aaron J. Cohen stressed that "in the generations before 1914, military and civilian cemeteries were separated by distance and public function". The Russian imperial government regarded military cemeteries as "symbolic capital", a means to demonstrate Russia's military might and the successes of the ruling dynasty.[13] The Great War created a new memorial landscape which restored the boundary between burials and commemoration sites both symbolically (through acts of remembrance) and physically (by creating memorial burials on the home front). The home front was witnessing the invasion of front lines; in the front-line areas, conversely, the unusually close proximity to civilian settlements made it necessary to adopt interment practices that would protect the civilians from risks posed by mass burials.

The body disposal and battlefield sanitation policies referred to in the 1914 instructions mainly concerned three practices: "correct" burial, disinfection, and the sowing of fields with grass and grain crops. "Instructions on the Interment of Servicemen Fallen on Battlefields and the Decontamination of Battlefields" from 10 September 1914 emphasized the following:

> 16. Corps Physicians will be responsible for implementing battlefield decontamination (sanitation) efforts.
>
> If a battlefield remains near the operation location of a division, the decontamination efforts will be supervised by the Division Surgeon.
>
> 17. Battlefield sanitation shall be mainly construed as the correct interment of the bodies of fallen servicemen, the digging in of dead animals and, if necessary, disinfection, all of which must be performed immediately after every battle. …
>
> 20. To ensure fast battlefield decontamination, it is recommended that the local residents sow the fields with grass and grain crops.[14]

It should be noted that the instructions discursively marked operations with animal and human remains as belonging to two distinct categories: the term "interment" was used about people, and "digging in" about animals.

13 Cohen, *Neither Here Nor There*, 174.

14 RGVIA, f. 2067, op. 1, d. 13, l. 24–25, Instructions on the Interment of Servicemen Fallen on Battlefields and the Decontamination of Battlefields, September 10, 1914.

This difference in terminology reflected the attitude of the commanders to animals at war. Although animals in military practice were viewed as "helpmates" to humans (horses transported cannons and munitions and evacuated the wounded from the battlefield; dogs functioned as mascots, sentinels, and bearers; pigeons delivered messages)[15] and animal handling was increasingly humanized and anthropomorphized, official documents regulating warfare on the Eastern Front still treated animals as a "resource".

A similar situation could be observed on the Western Front. On the one hand, the British command tended to regard horses as a "weapon"; the need to preserve horses as a valuable resource was expressed in the well-known formula "prevention is better than cure".[16] On the other hand, as Jane Flynn pointed out, the daily interaction between combatants and horses became increasingly personal as humans and animals suffered the same deprivations and spent most of their time on the front side by side.[17] It was not incidental that Private Christopher Massie compared the war horse to a fellow soldier: "He is a mate of ours—one of us. A Tommy".[18]

This contradiction between animal management practices and official instructions was bound to have an impact on burial practices. Some military animals were given special burials; combatants would even sacrifice valuable resources like wooden boards to construct a decent grave for animal "servicemen". British rifleman Aubrey Smith remembered that the digging of a pit for his "late steed Jack" and transportation of the horse's body to the burial spot was a strenuous job which took the efforts of several men.[19] The symbolic act of burial was not only a matter of Smith's personal sorrow; it was a manifestation of values shared by his comrades-in-arms, even though some of them refused to take the matter seriously: the officers passing the grave "laughed loud and long", clearly regarding the horse burial as a joke. Nevertheless, the present-day understanding of laughter and ironic estrangement suggests that the onlookers' reaction may have proceeded from deeper causes, such as a more humane attitude to animals, emotional attachment to them, and self-irony. It is hardly surprising that the poetic epitaph on Jack's grave indicated that although the horse was reluctant to leave his comrades, he was lucky to be leaving army service:

15 Lucinda Moore, *Animals in the Great War: Rare Photographs from Wartime Archives* (South Yorkshire: Pen and Sword Military, 2017), 41, 60, 94, 209.

16 Jane Flynn, *Soldiers and Their Horses: Sense, Sentimentality and the Soldier-Horse Relationship in the Great War* (New York, London: Routledge, 2020), 64.

17 Flynn, *Soldiers and Their Horses*, 65.

18 Van Emden, *Tommy's Ark*, 302.

19 Van Emden, *Tommy's Ark*, 180.

> Here lies a steed, a gallant steed, whose Christian name was Jack.
> How oft he lugged our limbers to the firing line and back.
> Although he's loath to leave us, he is happy on this score –
> He won't be in this – rotten Army any more.[20]

Special animal burials have also been recorded on the Eastern Front. It is a well-known fact that the connection between the serviceman and the war horse is exceptionally powerful. The bonds between people and horses in the Russian army were strongest in the Cossack units. The image of the war horse as a friend was romanticized by the day-to-day contact between the Cossacks and their horses and by the vivid descriptions of human-horse relationships in literature, including in works by Mikhail Lermontov, Anton Chekhov, and Leo Tolstoy. However, the official regulations studied here represent a far less humane perspective on animals at war.

Returning to the 1914 sanitation instruction, let us clarify the scope of this document. The regulations governed such aspects as the timing of the burial, grave depth (at least 1 m for individual and 2 m for mass graves), ground tilt (best avoided), distance from settlements (at least 1 km for mass graves), soil type (preferably sandy), and disinfection methods (cinders or quicklime). The document also warned of the damage which could be caused by rainfall or melting snow to graves located on mountain slopes. The requirement to leave at least 1 km of free space between populated areas and mass graves demonstrates that, even at the beginning of World War I, mass burials of combatants were known to pose a serious threat of infection to civilian settlements. To prevent disease outbreaks, the military command required that graves be protected from destruction by rainfall or melting snow.

Control over sanitation procedures was entrusted to corps and division physicians. The enactment was delegated to sanitation units which were responsible for human burials; in summer 1915, special veterinary disinfection units were also created to dispose of animal carcasses. The key purpose of veterinary infection control units was to combat and prevent animal diseases by disinfection methods. An instruction issued on 16 February 1915 required that infection control units had to work on "the former battlefields", to maintain cleanliness in storage areas for salted and dried animal hides in places of slaughter, and to "inspect livestock burials and waste disposal sites".[21] The establishment of a designated army unit, whose purpose was to oversee health safety, amply

20 Van Emden, *Tommy's Ark*, 180.

21 RGVIA, f. 2067, op. 1, d. 3889, l. 297 ob.–298 ob., instructions for veterinary infection control units, February 16, 1915.

demonstrates the huge scale of problems with food waste disposal and livestock burial, and indicates that dead animals were construed by the commanders first and foremost as a sanitation hazard.

The challenges of veterinary infection control efforts are captured in personal documents and reports by corps physicians. For example, corps physician Vasily Kravkov wrote in his diary in March 1915 that army doctors "were faced with the Sisyphean tasks of soil sanitation and the improvement of the drinking water supply".[22]

At the beginning of 1915, aiming to prevent infections among army horses and epidemic outbreaks in and around Lviv, the sanitary services inspected the city's burial site for fallen animals; eventually, it was resolved that the burial site be moved to the suburbs.[23] This measure seems justified, given that during the period when the Russian army was based in Lviv the workload for the slaughterhouses was several times higher than before the war.

Numerous ego-documents produced by Eastern Front combatants painted a terrifying picture of unburied animals and poorly buried people in the front-line areas as early as autumn 1914. "In many places, dead bodies lie exposed after the soil has settled!" corps physician Vasily Kravkov wrote in his diary in December 1914.[24] General Mikhail Bonch-Bruyevich, recalling his trip across Galicia in September 1914, wrote that "carts stuck in the swamp; dead horses lying with bloated stomachs" were a common sight everywhere:[25]

> The road to Rava-Ruska crossed the area of the recent battles. Broken gun carriages and overturned carts could be seen everywhere; at times, the field that we were passing—possibly the site of a cavalry battle—looked like a strange horse cemetery. Some horses lay in unusual attitudes, stiffened in the same positions in which their sudden death had taken them. Viewed from afar, they resembled some weird statues scattered across the brown stubbled field.[26]

22 Vasily P. Kravkov, *Velikaia voĭna bez retushi: zapiski korpusnogo vracha* [The Great War without retouching: Notes of the corps physician] (Moscow: Veche, 2014), 137.

23 *Otchet o deiatel'nosti voenno-veterinarnogo upravleniia vremennogo voennogo general-gubernatorstva Galicii v period vremeni s 15 ianvaria po 1 iiunia 1915 g.* [Report on the activities of the military Veterinary Department of the Provisional Military Governor-General of Galicia during the Period from 15 January to 1 June 1915] (Kiev, 1916), 2.

24 Kravkov, *Velikaia voĭna bez retushi*, 376.

25 Mikhail D. Bonch-Bruyevich, *Vsia vlast' Sovetam: Vospominaniia* [All power to the Soviets: Memories] (Moscow: Voenizdat, 1957), 39.

26 Bonch-Bruyevich, *Vsia vlast' Sovetam*, 42.

Unburied horses dangerously attracted packs of wolves—a fact mentioned by Kravkov, who served in eastern Prussia in November 1914.[27] The situation continued to deteriorate over time, particularly during the Great Retreat of the Russian army in 1915.

As hostilities proceeded, particularly during the second occupation of Galicia, the focus of the Russian army instructions changed and sanitation policies became more detailed as a response to the new military experience. "Instructions on the Interment of Servicemen Fallen on Battlefields and the Decontamination of Battlefields" from 6 September 1916, contained the following:

> A. Procedures for battlefield burials
>
> 4. Incineration of fallen servicemen's bodies is not permitted.
>
> 5. … Those that died of blast traumas or effects of gas attacks may not be buried until physicians have confirmed clear signs of death.
>
> B. Procedures for battlefield decontamination
>
> 6. Whenever possible, bonfires should be maintained during works conducted on battlefield to burn all sorts of unusable objects and litter found on site. The ash from these bonfires will be used as a lining for bodies inhumed in graves.
>
> 7. The best way to destroy dead animal carcasses is to burn them. The carcasses must first be skinned, whereupon the hides are to be salted immediately; incineration is to be performed whenever the opportunity presents itself.
>
> If incineration is impossible, the fallen or killed animals must be dug into graves. …[28]

Firstly, the instructions issued in 1916 were divided into two sections, the first of which regulated body disposal procedures, while the second focused on battlefield recovery. Apparently, by September 1916 when the above-mentioned instructions were issued, field sanitation had already acquired particular momentum.

Secondly, in 1916, significant changes were introduced into burial practices. The new instructions open with an emphatic prohibition against cremating the bodies of fallen soldiers—a practice which apparently had been commonly

27 Kravkov, *Velikaia voĭna bez retushi*, 88.

28 RGVIA, f. 2048, op. 1, d. 10, l. 254–55, Instructions on the Interment of Servicemen Fallen on Battlefields and the Decontamination of Battlefields, September 6, 1916.

used at the front.[29] Funeral practices in the Russian Empire during the First World War remained under the control of religious and national communities, "the Orthodox Church administered the cemeteries and performed the funeral ceremony".[30] Cremation as a method of burial was discussed in church circles just before the outbreak of war, but was rejected by the Holy Synod, the highest body of church-state administration, as a method "contrary to the will of God and a sacrilegious matter", and remained forbidden in Orthodox burial rituals until 1918.[31] Furthermore, special attention was to be paid to servicemen killed by blast injuries and gas attacks; medical confirmation of their death was to be obtained. It is not unreasonable to suggest that occurrences of soldiers being buried alive might have taken place, making it necessary to ensure physicians' compliance with the new burial procedures.

Thirdly, in 1916, disinfection of mass graves and animal burials emerged as a serious challenge facing the Russian high command. A comparison of texts written in 1914 and 1916 shows a marked difference in the level of detail regarding burial arrangements:

1. Soil selection: clayey soils were to be avoided.
2. Mass graves: the specifications for mass graves became more detailed; the requirement to use quicklime as a lining between layers of bodies was added; precise instructions regarding grave depth were provided.
3. Spacing and depth of animal burials: the 1916 instructions required animals to be buried at a depth of at least 5.5 m (an increase from just 2 m in 1914).

It should be stressed that the new instructions were remarkably meticulous regarding dead animal disposal. In 1916, cremation came to be regarded as the best method of destroying animal carcasses. This measure is likely to have been introduced to neutralize the epidemiological threat posed on the Eastern Front by unburied or poorly buried animals.

Additionally, the experience of the Great Retreat of 1915 made it necessary to adopt practices for utilizing the hides of dead animals, which had come to be treated as a valuable leather production resource potentially able to cover the army's footwear needs.[32] As early as July 1915, during the retreat from Galicia,

29 RGVIA, f. 2048, op. 1, d. 10, l. 254 ob., Instructions on the Interment of Servicemen Fallen on Battlefields and the Decontamination of Battlefields, September 6, 1916.

30 Sergei Mokhov, *Rozhdenie i smert' pohoronnoj industrii: ot srednevekovyh pogostov do tsifrovogo bessmertija* [The Birth and Death of the Funeral Industry: from Medieval Pogosts to Digital Immortality] (Moscow: Common place, 2020), 200, 204.

31 Mokhov, *Rozhdenie i smert' pohoronnoj industrii*, 210.

32 RGVIA, f. 2067, op. 1, d. 43, l. 139, South-Western Front Armies Order No. 148, January 28, 1916.

Commander-in-Chief of the South-Western Front General Nikolai Ivanov signed an order demanding that accurate records be made of hides taken off dead animals and that the hides be dispatched to the Quartermaster's Department. Later orders indicate that this directive was often disregarded: hides were sold to individual customers; the money from the sales was used for general expenses.[33] At the end of January 1916, the Quartermaster's Department intervened in the situation through the Supreme Commander-in-Chief, who obliged military officials to sell hides to the Quartermaster's Department at the established prices. In April 1916, the Russian armies in Poland and the Baltic Sea region had to adhere to the "Instructions on the Salting, Delivery and Accounting of Animal Hides".[34] As well as detailed recommendations, the instructions contained technical drawings. The sanitation guidelines which required that dead animals be skinned prior to burning may have proceeded from this experience; wherever possible, the hides were "to be salted immediately". If burning was unfeasible, animals had to be buried in conformity with the regulations regarding the distance from dwellings, soil types, and disinfection measures as applied to military burials. The standard depth for animal burials, which had initially been greater than for human graves, was further increased.

Finally, the recommendation to sow fields with grass "to ensure fast battlefield decontamination" is also notable.[35] This recommendation had the force of a guideline rather than an actual directive, despite having featured in regulatory documents since 1914. Moreover, the recommendation was targeted at civilians rather than the army. Apparently, this measure was planned to be implemented after the front had retreated. The cursory, unelaborated approach to environmental concerns suggests that field recultivation played only a minor role among other sanitation efforts.

Omitted or withheld information is of particular importance to the guidelines and instructions studied here, most of which draw a discreet veil over the recovery of agricultural land after bombing. Descriptions of fields disfigured by bombs, giant shell craters, and enormous pits filled with water and decaying depositions abound in both mass culture and ego-documents. In 1915, one the best-known photographs in the Russian illustrated press depicted a group of Russian soldiers sitting circus-acrobat-like on each other's shoulders

33 RGVIA, f. 2067, op. 1, d. 43, l. 137, South-Western Front Armies Order No. 147, January 27, 1916.

34 GARF, f. 826, op. 1, d. 371, l. 11–11 ob., Instructions on the Salting, Delivery and Accounting of Animal Hides, April 1916.

35 RGVIA, f. 2067, op. 1, d. 13, l. 25, Instructions on the Interment of Servicemen Fallen on Battlefields and the Decontamination of Battlefields, September 10, 1914.

to demonstrate the depth of a crater left by a German *chemodan* (suitcase) (a colloquial nickname for a shell with a calibre of 152 mm or larger).[36] Later, shell holes continued to act as "landmarks" of combat space or emblems of daily front-line reality: officers would commonly have their photograph taken inside shell craters, as Vasily Kravkov's comrades-in-arms did in November 1916, attempting to illustrate the extraordinariness of the landscape they faced.[37] Predictably, shell craters were never backfilled promptly as the situation on the front could change at any moment. So how was the war-affected productive land managed?

After the beginning of the Brusilov offensive, in June 1916 the Russian command discussed the plan to create a Committee for Assistance to the War-Affected Population of Galicia; the plan was designed by a commission headed by the former Military Governor-General, Count Georgiy A. Bobrinsky.[38] The committee was expected to oversee the "recultivation of farming lands" entrusted to the Department of Land Use Planning and Engineering; however, the official documents failed to stipulate any specific procedures which were to be used for this purpose.[39] In accordance with "The Temporary Regulations Concerning the Committee for Assistance", the Russian command had to control multiple economic and security issues (sowing, ensuring food supply, organization of feeding stations, rebuilding of ruined houses and household structures, as well as a variety of sanitation measures).

The issue of "field planting" gained particular momentum in 1915, which is apparent from the resolutions passed by the Council of Ministers on 30 September 1914 and 8 May 1915, which mentioned "the necessity to help the residents of the war-affected areas with food, seeds and fodder". Galician peasants were to be offered government funding (in the form of loans), which, however, sometimes failed to reach their prospective beneficiaries. In early March 1916, General Nikolai Ivanov requested the Russian Ministry of Home Affairs to promptly allocate 500,000 roubles "for sowing fields in the areas of Galicia occupied by the our forces" (Ternopil Governorate), stating that no directives

36 *Priroda i liudi* [Nature and people], no. 26 (1915): 416.

37 Kravkov, *Velikaia voĭna bez retushi*, 209.

38 Vladimir B. Liubchenko, "General-gubernatorstvo oblasteĭ Avstro-ugorshchiny, zainiatikh po pravu viĭny (1916–1917 rr.)" [Governorship of the Austro-Hungarian regions occupied by the right of war (1916–1917)], *Problemi istorii Ukraini* XIX–*pochatku* XX *st.* [Problems of the History of Ukraine of the XIX–XX centuries] 19 (2011): 346.

39 RGVIA, f. 2067, op. 1, d. 503, l. 87, Temporary Regulations Concerning the Committee for Assistance to the War-Affected Population of Galicia, February 4, 1916.

concerning the handling of the funding allocations had been made.[40] The request was granted immediately. Nevertheless, it is hard to say whether the efforts described led to any positive outcomes as in May 1916 the Russian front in Galicia was pushed back again. Although General Ivanov explained the urgency of his request by the approaching sowing season, his efforts might have come too late. Moreover, the correspondence on this issue demonstrates the sluggishness of Russia's administrative and financial machinery: governmental funding during the war was hard to obtain unless the request came directly from the commander-in-chief of the front.

One important factor was that the Russian government had a vested interest in Galicia and was planning to Russify the area in the future; this is why the recovery of the war-affected productive lands in Galicia was closely linked with the political agenda. Thus, Governor-General Bobrinsky applied for governmental funding in the amount of 1–3 million roubles to help Polish landowners in Galicia with sowing. In early 1915, the Council of Ministers declined the request as it was seen to contradict their "goals in Galicia", which had been "part and parcel of Russia since the beginning of time."[41] Galician peasants were to be offered government funding to the total amount of 11 million roubles "in order to cover their needs in food and seeds". For comparison, the government subsidies for rebuilding the destroyed households in the Warsaw General Governorate and Chełm Governorate during the same period totalled 50 million roubles. The Polish landowners, however, were consistently refused assistance since the Russian leadership regarded them as a potential source of opposition rather than food security stakeholders.[42] The situation with the Polish landowners was a major source of conflict. The Russian commander-in-chief, Grand Duke Nikolai Nikolaevich, tried to convince the Council of Ministers and its chairman Ivan Goremykin that the rehabilitation of Polish farming in Galicia had to be approached from a pragmatic rather than a political perspective: he hoped that field recultivation would cover the Galician farmers' need for grain, decrease the burden on the military transport and railway network, and prevent a typhus epidemic among the starving local residents which could pose a hazard for the army. However, this approach did not find support.

40 RGIA, f. 1276, op. 12, d. 1513, l. 2, 4, proposal of the Ministry of Home Affairs for the release of funds to the population of Galicia, March 8, 1916.

41 RGIA, f. 1276, op. 11, d. 1250, l. 3, memo on the appropriation of funding for the needs of Polish landowners, March 30, 1915.

42 RGIA, f. 1276, op. 11, d. 1250, l. 4, 6, memo on the appropriation of funding for the needs of Polish landowners, March 30, 1915.

It should be noted that the military damage to the fields, grasslands, and forests was evaluated from a legal rather than a practical perspective; damage mitigation efforts became the responsibility of public organizations rather than governmental agencies. As early as October 1915, the All-Russian Zemstvo Union established a Department for Assistance to War-Affected Populations under the auspices of the South-Western Front Committee, which was empowered to offer financial loans to Galician residents.[43] It was also tasked with providing legal counselling to the local residents seeking compensation for war-inflicted damage. The staff of the legal division visited the affected sites, conducted investigations, and compiled inventories of the damaged properties. Quite naturally, the chief matters of concern for the local communities were the fields, buildings, and livestock. The Department for Assistance to War-Affected Populations collected data about the destroyed and unreaped harvests, crops, or hay, and meticulously registered the amounts of damage to wheat, barley, carrot, potato, and sugar beet crops, as well as to the meadows and tame grass. However, the remit of the department did not extend beyond this task.[44] Such military logic did not provide for field recultivation during the war; it was even proposed that Galician land be nationalized until the hostilities ceased and the rightful landowners were able to return.[45]

Early in April 1917, Russia's Provisional Government called for the drafting of regulations on the management of Galicia and Bukovina. The new policies were to be guided by the opinions of non-governmental organizations set out in a memo of the Galicia-Bukovina Commission. The commission had been established by the All-Russian Zemstvo Union and the Union of Cities of the South-Western Front and included several Ukrainian politicians among its members.[46] Among other things, the memo stated that "the destructive practice" adopted by the civil administrators in Galicia and Bukovina, who "proved incapable of organizing the local economy", had led to the Governor-General transferring all economic responsibilities to non-governmental organizations

43 RGIA, f. 1276, op. 12, d. 1513, l. 2 ob., proposal of the Ministry of Home Affairs for the release of funds to the population of Galicia, March 8, 1916.

44 *Pervyĭ god deiatel'nosti Iuridicheskogo podotdela Otdela pomoshchi naseleniiu, postradavshemu ot voĭny, Komiteta Iugo-Zapadnogo fronta Vserossiĭskogo Zemskogo soiuza* (*20 oktiabria 1915 goda – 20 oktiabria 1916 goda*) [The first year of activity of the legal subsection of the Office for Assistance to Population Affected by War of the Committee of the South-Western Front of the All-Russian Zemstvo Union (20 October 1915–20 October 1916)] (Kiev, 1917), 54.

45 Liubchenko, "General-gubernatorstvo oblasteĭ Avstro-ugorshchiny".

46 GARF, f. 1800, op. 1, d. 174, l. 16, memo of the Galicia-Bukovina Commission, April 1917.

(the All-Russian Zemstvo Union and the Union of Cities) on 12 November 1916.[47] This context seriously complicated sanitation works.

Part of the reason why field recultivation never featured prominently on the agenda was doubtless the unstable situation on the front. Even under the second Russian occupation of Galicia in June 1916–October 1917, the possibility that the province and, consequently, its food and production resources might be recaptured by the adversary remained a serious threat. With the beginning of the demobilization in the Russian army in late 1917–early 1918, battlefield sanitation in the surrendered territories lost all relevance to the military authorities and became the sole responsibility of the local administration.

3 The Effects of Gas Attacks on Fields and Forests

If we accept Susan Lindee's statement that technological knowledge occupied the central position in the First World War,[48] we would be justified in regarding nature management practices as a direct consequence of this technocratic approach, which was largely free from ethical concerns and offered little room for emotional experiences. In his 1915 essay on the impact of the war on the perception of modernity, Sigmund Freud pointed to a special relationship between humans and nature which resulted from advances in science and technology made by the 20th century. He insisted that the "technical advances towards the control of nature" were one of the main achievements of the "Great Powers".[49] However, advances in the use of chemical weapons, particularly asphyxiating gases, became a fast and effective method of environmental destruction.

Methods of warfare may be regarded as a reflection of the socio-economic and political systems of the combatant nations. War is a litmus test which exposes the fundamental social processes experienced by the combatant nations. In this sense, war ecology is inseparable from the problems affecting the rear and must be approached from a variety of perspectives beyond immediate battlefield needs. The very idea that it could be acceptable to use chemical weapons to gain military advantage characterizes practices of the

47 GARF, f. 1800, op. 1, d. 174, l. 17, memo of the Galicia-Bukovina Commission, April 1917.

48 Susan M. Lindee, *Rational Fog: Science and Technology in Modern War* (Cambridge, MA/London: Harvard University Press, 2020), 73.

49 Sigmund Freud, "Thoughts for the Times on War and Death," in *The Standard Edition of the Complete Psychological Works of Sigmund Freud,* vol. XIV (1914–1916) (London: Hogarth Press and the Institute of Psychoanalysis, 1957), 276.

Anthropocene no less vividly than the physical damage they caused to natural and social objects. In view of the above, the following section of this study will address the army–nature interaction practices associated with the use of chemical weapons, namely the decontamination of fields and forests from effects of gas attacks.

Modern historians generally agree that "the use of gas on the Eastern Front was probably not as significant as its use on the Western Front".[50] Even approximate data on casualties from gas attacks suggest a smaller scale of chemical weapons use on the Eastern Front: British casualties are estimated at 186, 000, French at 130,000, German at 107,000, US at 73,000,[51] and Russian at 65,000.[52] Despite attempts by the British and French armies to use tear gas early in the war, only the German army's use of chemical weapons became regular and massive.[53] First, during the capture of the Belgian village of Neuve-Chapelle on 27 October 1914, when 3,000 shells covered British positions in a thick cloud of dark grey dust. Second, on the Eastern Front, near Bolimow (Kingdom of Poland) on 31 January 1915, when the so-called "black grenade" developed by German chemists was used for the first time. Both German attacks failed. The first successful use of chemical weapons was the gas attack by the German army near Ypres on 22 April 1915, which marked the beginning of the "gas war" on the Western Front. It peaked in 1917, when phosgene was joined by mustard gas, which affected not only the lungs but also exposed skin, eyes, and other tissues, and remained destructive for several days.

Chemical warfare became a permanent part of the Eastern Front experience in 1915. The German gas attack of 31 May 1915 (12,000 cisterns with liquid chlorine), which was launched at the Russian positions near Wola Szydłowska, blocking the route to Warsaw, demonstrated a lack of basic understanding of the effects of gas among combatants on both sides of the front line. According to a study of chemical warfare conducted during the interbellum period by the Soviet military expert Alexander de Lazari, German propaganda (albeit

50 Steven J. Main, "Gas on the Eastern Front During the First World War (1915–1917)," *The Journal of Slavic Military Studies* 28, no. 1 (2015): 131, DOI: 10.1080/13518046.2014.963437.

51 Thomas I. Faith, "Gas Warfare," in *1914–1918-online. International Encyclopedia of the First World War*, eds. Ute Daniel et al. (Berlin: Freie Universität Berlin, 2016), http://dx.doi.org/10.15463/ie1418.10813.

52 Steven J. Main, *Gas on the Eastern Fron*t, 130.

53 Mikhail V. Supotnitskiy, Stanislav V. Petrov, and Viktor A. Kovtun, Vlijanie himicheskogo oruzhija na taktiku i operativnoe iskusstvo Pervoj mirovoj vojny (istoricheskij ocherk), chast' 1 [The Influence of Chemical Weapons on Tactics and Operational Art in World War 1 (Essays in the History of Chemical Weapons), Part 1], *Journal of NBC Protection Corps* 1, no. 1 (2017): 58, DOI: 10.35825/2587–5728-2017–1-1–53-68.

with limited success) tried to convince the soldiers that gas was not deadly to humans, that it "only results in a temporary loss of consciousness", and that the attacked Russian troops "showed more *surprise* and *curiosity* than alarm when they spotted the gas cloud", having mistaken the gas for camouflage.[54] Quite predictably, the use of the new weapons engendered chaos and disorder among both warring parties; the results of the first gas attacks provided only a short-term advantage, never strategic value. At the same time, early gas attacks had a powerful psychological impact on the combatants, particularly due to the scale of casualties (the attack of 31 May affected 9,146 servicemen and killed 1,183)[55] and the excruciating physical pain suffered, although the latter remained largely invisible to the enemy. Consequently, the decontamination of territories affected by gas attacks was never considered a priority task unless it concerned safety measures and personnel protection.

The guidelines developed by the Russian Supreme Command Headquarters in April 1916 mostly contained recommendations on preparation for or response to gas attacks. The documents emphasized, however, that some landscape features (such as vegetation or shrubs) "may remain toxic for a long time" due to their capacity to constrain the spread of gas and absorb noxious chemicals; "swampy countryside or areas covered in thick vegetation" were regarded as the least favourable sites "for all manner of gas attacks".[56] The presence of a water basin like a river, lake, or swamp between the Russian trenches and the enemy positions was regarded by Russian military meteorologists as a major barrier to gas attacks.[57] Furthermore, military trainers stressed the differences in the chemical composition and effect of the gas delivered by cisterns versus artillery shells, bombs, and hand grenades: the latter contained less volatile compounds than chlorine, acid gas, and phosgene and were supposed to "sprinkle the soil and grass, landing on them as small drops", which could remain active for over 24 hours.[58] No further recommendations were made on grass and soil decontamination. Instructions and guidelines disseminated among the Russian army clearly showed that the meteorologists were never concerned with the long-term impact of gas attacks on the vegetation

54 Alexander N. de Lazari, *Khimicheskoe oruzhie na frontakh mirovoĭ voĭny 1914–1918 gg. Kratkiĭ istoricheskiĭ ocherk* [Chemical weapons on the fronts of the World War 1914–1918. A brief historical sketch], ed. Iakov L. Avinovitskii (Moscow: State Military Publishing House, 1935), 26.

55 De Lazari, *Chemical Weapons,* 29.

56 GARF, f. 826, op. 1, d. 369, l. 44 ob., instructions for chemical warfare, April 2, 1916.

57 RGVIA, f. 2031, op. 1, d. 375, l. 601, lecture "Meteorology in Gas Engineering," 1916.

58 RGVIA, f. 2031, op. 1, d. 375, l. 640 ob., brochure "Scientific and Technical Basis of Gas Fighting," 1916.

or soil. The opinions of agronomists and veterinaries were also not taken into account.

Russian regulations on the uses of chemical weapons mostly concentrated on gas attack technologies and methods of attack prediction on the basis of weather data. Environmental consequences of gas attacks were largely overlooked. The instructions mostly focus on the effects of the landscape on gas dispersal: with increased wind velocity, "any terrain features or vegetation such as shrubs, trees, tree stumps, etc. will create air turbulence, causing the poison released at low altitudes to diffuse vertically".[59] The asphyxiating gases, Russian military experts stressed, had "a destructive effect on all living and nonliving things in their path: copper objects turn green, iron and steel rust, plants die". They also stated that "vegetation wilting becomes noticeable in just 12–36 hours" and that "currant bushes are particularly sensitive to gas".[60]

In August 1916, the Russian command developed special regulations for decontaminating fields and forests that had been affected by gas attacks. This followed an inquiry into the causes of the considerable damage inflicted on the Russian army by the German gas attacks at Smarhon' in July 1916. The commission that conducted the inquiry paid particular attention to the varying effects that the gas attack had had on the local vegetation.[61]

> The gases had a considerable impact on the landscape and vegetation in the exposed area. The leaves and needles on the trees and bushes have turned brown, giving the deciduous trees an autumnal look. … However, not all deciduous trees have been affected to the same degree; the poplars, for example, have been badly damaged, while the ash trees growing on the same site are completely intact. The birches, lime trees, acacias and chestnuts have also suffered only minor damage; on the contrary, spiraea and some other species of garden shrubs were seriously harmed. As for the grass, it bears almost no traces of gas exposure, whereas the effect of gases on tree species is visible in the area of about 12.8 km.[62]

The commission's report contained recommendations on using water and fire to eliminate the consequences of gas attacks in the trenches and dugouts,

59 RGVIA, f. 2031, op. 1, d. 375, l. 642 ob., brochure "Scientific and Technical Basis of Gas Fighting," 1916.

60 RGVIA, f. 2031, op. 1, d. 375, l. 647 ob., brochure "Scientific and Technical Basis of Gas Fighting," 1916.

61 GARF, f. 826, op. 1, d. 369, l. 14, act of the Commission for Inquiry of Gas Attacks at Smarhon', August 1, 1916.

62 GARF, f. 826, op. 1, d. 369, l. 14, act of the Commission for Inquiry of Gas Attacks at Smarhon', August 1, 1916.

but failed to mention any measures regarding the forests, fields, and water sources.[63]

No references to the effect of chemical weapons on the landscape are contained in reports on gas attacks launched by the Russian command in autumn 1916–winter 1917.[64] The only serious concern expressed in a report about a night gas attack between the Volchino and Litvino Lakes near Minsk in October 1916 was the fact that the gas lingered in the ravine in front of a birch grove until dawn, preventing the Russian forces from performing reconnaissance and attacking the enemy trenches.[65] When assessing the results of the attack, the 1st Army Headquarters reported that the attack "engendered lasting anxiety among the enemy" while their soldiers "experienced a pleasant feeling of satisfaction" from the knowledge that they too could "avenge the enemies using their own tactic".[66] The emotional state of "satisfaction" described in the document may have been valued above the pragmatic effect from the gas attack as the number of casualties in the 21st Murom Infantry Regiment which had performed the attack was quite high: 83 servicemen were poisoned, 12 of them died.

The state of affairs changed with the 1917 February Revolution and the formation of a new Russian government. From March 1917 onward, governmental instructions encouraged army headquarters to exercise more caution when planning gas attacks and implementing safety measures; the control over the arrangements was to be decentralized, with each army, corps, division, battalion or company appointing its own "gas discipline officer". In the memo "Protection against Asphyxiating Gases", disseminated in May 1917, Colonel Alfred Knox, military agent at the British embassy in Russia, urged the Russian army to draw on the British and German experience.[67] Knox recommended maintaining close relations between the field forces and the central scientific committees, pointing out that the new gas mask models, developed by the London-based Chemical Committee could only be effectively tested by the army.[68] However, Colonel Knox's memo did not contain any recommendations concerning soil or vegetation decontamination but was limited to blindages and dugouts.

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63 GARF, f. 826, op. 1, d. 369, l. 26, lectures at the officers' school, December 4–5, 1916.

64 RGVIA, f. 2144, op. 1, d. 25, l. 60–63, 5th Chemical Command report, February 18, 1917.

65 RGVIA, f. 2031, op. 1, d. 375, l. 741, 1st Army Headquarters report, October 13, 1916.

66 RGVIA, f. 2031, op. 1, d. 375, l. 742, 1st Army Headquarters report, October 13, 1916.

67 RGVIA, f. 2048, op. 1, d. 415, l. 162 ob., brochure "Protection against Asphyxiated Gases," May 3, 1917.

68 RGVIA, f. 2048, op. 1, d. 415, l. 162 ob., brochure "Protection against Asphyxiated Gases," May 3, 1917.

Recommendations concerning soil protection first occur in March 1917 in resolutions of a commission at the 2nd Army Headquarters, which called for developing a policy to ensure "response to asphyxiant gas attacks": craters from chemical shells had to be "covered with earth and deacidified with cinders from bonfires or stoves … and quicklime, preferably freshly slaked".[69] The documents stress that soil saturated with dangerous chemicals might continue to discharge noxious gas for up to five days. However, no special measures aimed at soil or plant decontamination were mentioned. Among other things, the recommendations specifically outlined measures regarding horses: in the event of a gas attack, special wet nosebags with chaff were to be placed on the susceptible animals; the movement of animals was to be stopped until the gas waves had passed.[70] This method of animal protection had been practised for a long period and is well documented in photographs published in the military illustrated press.

The duty to assure the serviceability of gas masks in battlefield conditions was delegated to corps physicians, along with sanitation and disinfection. Vasily Kravkov wrote in May 1916 that a shipment of 25,000 gas masks sent to his military unit turned out to be faulty: the paramedics that were testing the masks started suffocating two minutes into the procedure; many masks had parts missing and were therefore unusable.[71] Kravkov's account is full of frustration at the impossibility of performing disinfection procedures on the required scale.

4 Demobilization of Animals

One striking aspect of the Eastern Front demilitarization was the demobilization of animals, whereby hundreds of thousands of horses had to be moved away from the vast front-line territories. Trench warfare transformed the front into a gigantic laboratory which tested the limits of human capacity and survival. Although World War I was a conflict for resources, the natural environment, unlike the human being, was never regarded as an experimental field per se. The insightful concept of war as "a traumatic epidemic", which had

69 GARF, f. 826, op. 1, d. 369, l. 58, resolutions of the Commission of the 2nd Army Headquarters, March 1917.

70 GARF, f. 826, op. 1, d. 369, l. 81 ob., instructions for the 15th Infantry Division, 1917.

71 Kravkov, *Velikaia voĭna bez retushi*, 223.

been suggested by the Russian military surgeon Nikolai Pirogov in 1878[72] and returned to the public discourse by the Russian press in 1914, emphasized the anthropological dimension of the military confrontation: the human being, specifically the human body and its integrity, emerged as the only true measure of war. The First World War added an axiological element to this anthropological interpretation; this is why an attempt to offer a value judgment on the actions of the warring armies and apply the notion of humaneness as a universal—and unifying—category to wartime reality was bound to have some impact on nature and asset management. In that sense, the humane treatment of animals may be regarded as a mental demilitarization practice. This practice acquired particular momentum during demobilization, when the question of whether animals at war were "resources" or "battle comrades" resonated with a new strength.

The "resource-oriented" logic equated the animals with military property. Russian demobilization followed a three-term "pyramid" model which prioritized people over animals, and animals over property. "Transit should be provided firstly for men, then for the horses that would be sold to the residents or delivered to the rear, and finally for valuable property, which should be moved in small quantities, subject to the availability of rail transport".[73]

Unsurprisingly, after the demobilization of the Russian army started in late 1917 to early 1918, the issue of battlefield sanitation was discussed almost exclusively in the context of military asset preservation, although the essence of the problem remained the same: "the theatre of war … is a vast space strewn with dead horses and abandoned equipment. It is a focus of various diseases and epidemics which pose a mortal threat to Russia and Europe", reads a telegram sent by General Bonch-Bruyevich to Supreme Commander-in-Chief Nikolai Krylenko.[74] Early in 1918, the Russian military command was mostly preoccupied with finding the means to evacuate army assets from the theatre of war. The risks associated with military equipment were mostly evaluated in terms

72 Nikolai I. Pirogov, *Voenno-vrachebnoe delo i chastnaia pomoshch' na teatre voĭny v Bolgarii i v tylu deĭstvuiushcheĭ armii v 1877–1878 gg.* [Military-medical business and private assistance in the theatre of war in Bulgaria and in the rear of the active army in 1877–1878], part 2 (St. Petersburg: State Printing House, 1914), 2.

73 RGVIA, f. 2106, op. 7, d. 65, l. 83, telegram from the Headquarters, December 30, 1917.

74 Oksana S. Nagornaya, "Evakuaciia v tom vide, v kotorom ona sushchestvuet, gubitel'na dlia voennoplennykh i opasna dlia gosudarstva: Sovetskaia praktika repatriatsii russkikh voennoplennykh pervoĭ mirovoĭ voĭny" [Evacuation as it exists is disastrous for prisoners of war and dangerous for the state": Soviet practice of repatriation of Russian prisoners of war of the First World War], *Magistra Vitae: Electronic Journal of Historical Sciences and Archaeology* 15, no. 116 (2008): 56.

of partial or complete loss of economic control over the property rather than in terms of environmental hazards.

The fate of army horses depended on their physical state. As early as November 1916, the physician Kravkov noted in a diary written during his service in Galicia, "Our poor horses are so hungry that they gnaw at the team poles, vehicle shafts, and wattle fences … if things continue this way for another week, we may lose our entire complement of horses".[75] In 1917, emaciated horses were classified into three categories: those incapable of movement, the feeble, and the usable. Animals from the first category were to be offered to the local residents free of charge; the unwanted animals were to be disposed of. Horses fitting the second category were expected to be sold to local customers at reduced prices. The third group of horses was preferably to be delivered to Russia if logistically feasible. This task, however, ultimately proved next to impossible.

This approach may be compared with the practices used on the Western Front. Private Fred Lloyd (Royal Army Veterinary Corps) remembered that in 1918 the horses had been evaluated and graded prior to sending them to Britain:

> we classified the horses to see what was coming home and what wasn't. There were three grades, and peacetime vets were saying which ones were fit to go back to England, these went into quarantine; the next grade was to be sold to the farmers, and the others were for food[76]

As a front-line veterinarian, he was puzzled by the frequently occurring horse blindness which he viewed as a consequence of gas attacks:

> A terrific lot of the horses were blind, hundreds of them. They never found out why, perhaps it was exposure to gas. Some of the time, I was leading one awkward horse and three more that were totally blind.[77]

Overall, the Eastern Front "horse demobilization" practices adhered to the same formula that was used on the Western Front. The horses that could no longer travel on their own had to be transported by rail to the site of sale. However, in late 1917 and early 1918, the railway network on the Eastern Front was so disrupted, and the demobilization of the Russian army beset by so many difficulties, that the plan to transport "feeble horses" was rendered unfeasible

75 Kravkov, *Velikaia voĭna bez retushi*, 277.
76 Van Emden, *Tommy's Ark*, 302.
77 Van Emden, *Tommy's Ark*, 302.

"due to complete unavailability of rolling stock", to quote the report issued by the Demobilization Commission of the 1st Army in January 1918.[78]

Moreover, the army command reported cases of "equine sales malpractice", whereby soldiers appointed to sell the army horses kept the revenue for themselves instead of handing it over to the Military Chest. In the end, it was recommended that horse sales be refrained from in the front-line areas already saturated with horse stock, and that instead horses be transported to mainland Russia, which had been suffering from an acute deficit of horse power since animal mobilization at the beginning of the war.[79]

The rapidly decreasing personnel made it particularly difficult to preserve and transport both the army horses and non-living assets. Loyalty to the army was faltering, and although the officers, who mostly remained on duty, struggled to keep the haphazard demobilization process orderly and to maintain discipline, it was the soldiers that were left to guard the storage facilities and to transport the horses and cargos. The number of soldiers available to undertake these responsibilities, however, kept falling, which made the demobilization of military assets and animals problematic.[80]

Livestock transportation became one of the most daunting challenges. Late in January 1918, an order was issued to send the Cossacks and their horses home by "railway carriages which could be coupled to freight trains".[81] However, horse transportation required special conditions, particularly during infectious disease outbreaks, which were common among the animals. Veterinary doctors had to be hired and paid for their services; yet many veterinaries had already demobilized, and the cash-strapped military units were often unable to obtain the funding.[82] The Northern Front Demobilization Commission found an elegant solution to this problem, offering demobilized soldiers an opportunity to travel home in the same carriages that were used for horse transportation and accompany the animals during the journey.

Animal transportation was beset by concerns about fodder, which had to be either stored in amounts sufficient for the trip or bought during the journey. Both these arrangements made horse shipping in winter 1918 next to

78 RGVIA, f. 2106, op. 7, d. 67, l. 1, journal of the Demobilization Commission of the 1st Army, January 16, 1918.

79 RGVIA, f. 2106, op. 7, d. 67, l. 52–52 ob., journal of the Demobilization Commission of the 1st Army, January 16, 1918.

80 RGVIA, f. 2106, op. 7, d. 67, l. 1, journal of the Demobilization Commission of the 1st Army, January 19, 1918.

81 RGVIA, f. 2106, op. 7, d. 64, l. 185, telegram to the 1st Army Commission, January 25, 1918.

82 RGVIA, f. 2106, op. 7, d. 64, l. 199, telegram to the Demobilization Commission of the 1st Army, February 17, 1918.

impossible. The maintenance of army livestock required colossal resources. Richard van Emden, referring to a report by the British War Office, emphasized that "the total weight of oats and hay sent overseas to the Western Front to feed these animals exceeded the weight of ammunition of all types sent to feed the guns, 5.95 million tons and 5.27 million tons respectively".[83]

Early in January 1918, the fodder situation in the troops based in the Baltic Sea region was nothing short of desperate: the local farmers refused to sell fodder at the prices offered by the army, whereas requisition attempts aroused resistance among the peasants, who were supported by the Latvian Riflemen.[84] Soldiers sent to remote locations to forage for animal fodder frequently deserted, leaving the horses to starve to death.

Parting with the horses that lost their health and working capacity on the front was a painful experience. In his diary, Private Fred Lloyd shared a heartbreaking story of how the horses were sold by weight to Parisian slaughterhouses, where the animals were led onto scales four at a time.[85] This account is worlds apart from the romanticized image of an army horse as a "battle comrade". As Lucinda Moore noted, "for those men and horses who survived the war, demobilisation meant a parting of the ways".[86]

While seeking to instrumentalize the understanding of war ecology and identify specific practices of environmental impact during World War I, we should remember that the human perception of nature is first and foremost emotional. Emotions can never be divorced from military experience—or from the environmental practices pertaining to this experience. However, the degree of the combatants' emotional involvement varied depending on the individual. In the times of the First World War, it was believed that emotion was defined by one's class, gender, or education; today, however, we realize that the connection between these variables and emotion is tangible, yet far from linear.

5 Conclusion

In summary, let me note that demilitarization during the war (including the decontamination of trenches and the surrounding space from the effects of poison gases; sanitation; soil recultivation, and the collection of weapons from

83 Van Emden, *Tommy's Ark*, 302.
84 RGVIA, f. 2106, op. 7, d. 64, l. 121, telegram to the 1st Army Commission, January 18, 1918.
85 Van Emden, *Tommy's Ark*, 302–3.
86 Moore, *Animals in the Great War*, 211.

battlefields) was used as a means to maintain the army's combat efficiency. The chaotic demobilization, beset by the more mundane problems of military asset transportation and maintenance, pushed environmental issues into the background. It would be safe to state that the continued demilitarization of the former Russian front was accompanied by its remilitarization from summer 1918.

The Eastern Front reverberated with the terrible echoes of the First World War until the end of 1920. Military operations continued: autumn 1917 saw the beginning of the civil war in Russia between the Bolsheviks and their opponents, which in May 1918 escalated to an open military confrontation involving foreign troops. The first German occupation, spanning from February 1918 to mid-March 1919, was aggravated from November 1918 by the Soviet westward offensive to follow the retreating German army.[87] The period from 1918 to 1920 witnessed military conflicts between Ukraine and Soviet Russia, Ukraine and Poland, and Poland and Soviet Russia. The Polish-German border was unstable; the situation in Bessarabia, which was occupied by Romanian troops, remained tense. It would be no exaggeration to conclude that the terrible bloodbath resulting from these military conflicts on the Eastern Front was partly fuelled by the First World War legacy, not least by the enormous stocks of military equipment once possessed by the Russian imperial army, the largest army to have fought on the side of the Entente. As Adam Tooze noted, "thanks to its own mobilization efforts and the now abundant Allied supply line, the Russian Army of the early summer of 1917 was better equipped than at any previous point in the war".[88]

To conclude, the evolution of nature management and "enemy" resource utilization practices progressed more slowly compared to the developments in the attitude to soldiers. Unlike the environment, the soldiers during World War I had already come to be viewed as a reusable resource, a resource that had to be spared, provided with good medical care, and protected from disease. The Great War was a time when humanity was only beginning to take an interest in the future of the environment once the fighting had ended; no environment-sparing practices were applied during the active hostilities. The only precursors to the "environmental turn" in human mentality could be identified in the

87 Leonty V. Lannik, "Brestskaia sistema mezhdunarodnykh otnoshenij kak prostranstvo germanskoĭ gegemonii v Vostochnoĭ Evrope v 1918 g." [The Brest system of international relations as a space of German hegemony in Eastern Europe in 1918] (Habilitation diss., Institute of World History, Russian Academy of Sciences, 2021), 688, 690, 691.

88 Adam Tooze, *Deluge: The Great War, America and the Remaking of Global Order, 1916–1931* (New York: Penguin Group, 2014), 81.

emotional "domestication"/"humanization" of the alien landscapes that were seen by the combatants as "home" and in the way soldiers and officers looked after the graves of their comrades-in-arms or anguished over the well-being of the animals they had served alongside during the war.

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CHAPTER 12

Conceptualizing the Post-Battle Landscape: the First World War Military Cemeteries and Monuments in Galicia

Kamil Ruszała

1 Introduction[1]

The outbreak of World War I marked the beginning of a series of military engagements that immersed Galicia in a theatre of armed conflict between Austria and Germany on one side and Russia on the other. Initially, Russian forces advanced towards Kraków, reaching the outskirts of the fortress in December 1914, but failing to capture it. Along the way, enemy troops captured the capital city of Lviv in early September 1914, proceeding further west into Galicia. They besieged the fortress of Przemyśl, which fell in March 1915. While some hostile units focused on capturing Przemyśl, the Russian army continued to fight in the west and south. Between winter and spring of 1915, the front stabilized, transitioning into trench warfare. However, the situation changed in early May 1915 when a joint Austro-German offensive along the Gorlice–Tarnów line successfully broke through the front, causing the Russian forces to retreat eastward. As a result, Przemyśl was liberated in June 1915, followed by Lviv. The breakthrough at Gorlice had significant consequences, not only for the course of events in Galicia but also for the entire Eastern Front. The shift in the front line reshaped the political landscape of Central and Eastern Europe, as the German and Austro-Hungarian military administrations became part of the Kingdom of Poland. From that point onward, the Russian army did not return to western Galicia or the Kingdom of Poland, but the theatre of war remained in the eastern part of Galicia.

The large-scale and total nature of the conflict led to a staggering loss of life among soldiers. The battlefields were strewn with the bodies of the fallen, with burials often carried out by the combatants themselves. The soldiers experienced the reality of trench warfare, where they lived, operated, launched

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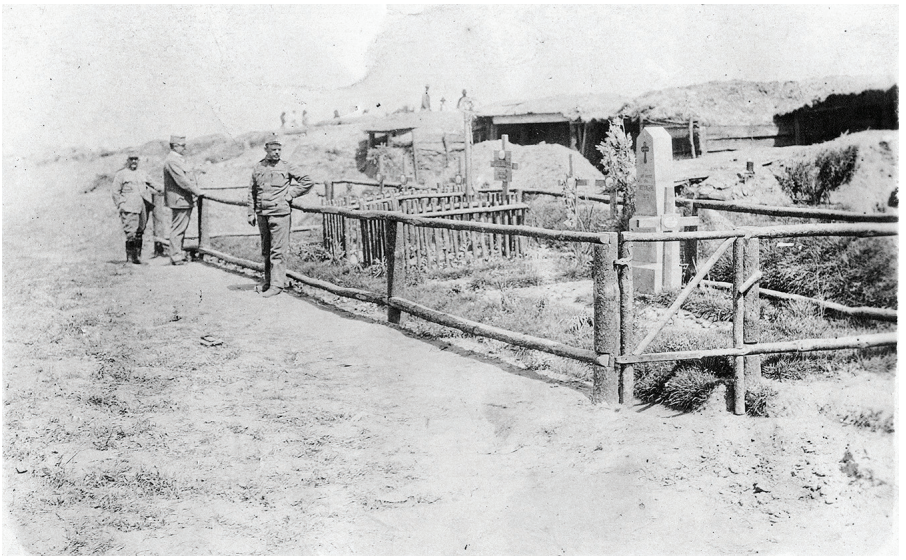

FIGURE 12.1 Trenches on the Dunajec River and graves of fallen soldiers in Sierakowice–Łukanowice (western Galicia)
SOURCE: PRIVATE COLLECTION OF ROBERT KOZŁOWSKI.

attacks, and defended themselves against artillery fire, as well as buried their fallen comrades. As the front line shifted, rear-area command units were responsible for organizing the battlefields, including the digging of mass and individual graves. The recent battlefield was characterized by a landscape filled with scattered corpses and soldiers' graves, making it imperative to undertake organized efforts to create dignified burial sites for the fallen. (Figure 12.1.)

This chapter will present the process by which Austrian military agencies conceptualized the former battlefield by creating cemeteries and military monuments within the landscape already during war. In this way, the chapter argues that the creators of war cemeteries, working for the field agencies of the Ministry of War in Vienna, transformed the landscape of Galicia from a landscape of death and violence into one of memory and glory for the fallen soldiers. A crucial point for understanding this thesis will be discussion of the activities of the KGA-Krakau artists, who showcased the creation of war cemeteries and monuments as a well-organized and significant imperial project, while also allowing for their own artistic expression, combined with the trends arising from the art of war memorials. The experimentation of the cemetery creators within the geographically diverse landscape of Galicia and their integration into that landscape positions these war cemeteries, with their monuments, as a permanent element of Galicia's cultural landscape. An interesting study will

be the discourse surrounding the Battle of Gorlice monument, which, on the one hand, serves as an example of how seriously this endeavour was taken. On the other hand, this debate reveals how imperial rivalry between Germany and Austria-Hungary functioned in shaping the commemorative landscape. It sheds light on Germany's aspirations to be an integral part of the Austrian project, avoiding exclusion while simultaneously seeking to contribute symbolically to the commemoration of the triumph at the Battle of Gorlice.

2 Transforming the Battlefield in Western Galicia: between Military Pragmatism and Imperial Enterprise

Following the bloody military operations, the region of Galicia became a landscape of war violence and destruction of the countryside. The former battlefield was filled not only with ruins and devastation but also scattered individual and mass graves of fallen soldiers. From the perspective of potential epidemiological and sanitary threats, the creation of military graves required greater organization than the ad hoc graves hastily made for the fallen or those who died in front-line hospitals. Often, the graves were dug too shallow, and in the face of the scale of death, they were created hurriedly, and did not always adhere to all the rules associated with recording the fallen soldiers. For this reason, the military authorities in Austria-Hungary undertook the task of establishing appropriate agencies responsible for the creation of a war burial system, including the establishment and maintenance of war cemeteries, the management of cadastres for military graves, and the registration of fallen and deceased soldiers. In November 1915, the 9th War Graves Department was established at the War Ministry in Vienna, which was responsible for above-mentioned issues. This office had established field agencies in the areas covered by military operations, which corresponded administratively with the areas of military commands in the period of peace. Among other areas, such agencies were created on the Eastern Front in Galicia, dividing it into three areas, also corresponding to the military administration. Thus, the War Graves Division in Kraków (Kriegsgräberabteilung Krakau, hereafter KGA-Krakau) was established for the western part of the crown land, the War Graves Inspectorate in Przemyśl for the central part of the country (Kriegsgräberinspektion Przemyśl, hereafter KGI-Przemysl), and the War Graves Inspectorate in Lviv (Kriegsgräberinspektion Lemberg, hereafter KGI-Lemberg) for its eastern part.[2]

2 On the structures of war graves system in Austria-Hungary, see, e.g., Thomas Reichl, *Das Kriegsgräberwesen Österreich-Ungarns im Weltkrieg und die Obsorge in der Republik Österreich: Das Wirken des Österreichischen Schwarzen Kreuzes in der Zwischenkriegszeit* [The war graves of Austria-Hungary in the World War and the care in the Republic of Austria: The

The most spectacular cemetery designs in terms of organization and the creation of war memorials in memory of the fallen soldiers were established under the auspices of KGA-Krakau, which covered the area of western Galicia. The region was divided into ten cemetery districts. (Figure 12.2.) During that time, KGA-Krakau directly created 378 cemeteries in districts I–X, and an additional 22 cemeteries were established in the immediate vicinity of the Kraków fortress when these sites came under the jurisdiction of KGA-Krakau after leaving the fortress's authority.[3] As mentioned above, the boundaries of the agencies of war graves in Galicia coincided with the borders of the military administration of the Habsburg Empire. Therefore, the competences and activities of KGA-Krakau went beyond the Galician crown land and involved the creation of war cemeteries in Austrian Silesia and partially in the Moravian regions. Hence, war cemeteries can also be found in this area located tens to hundreds of kilometres (depending on the period) from the actual front line, and dedicated to soldiers who died in military hospitals. Undoubtedly, the most splendid example can be found in Olomouc-Černovír in Moravia, designed by the architect of KGA-Krakau Gustav Rossmann.[4] However, it was the area of western Galicia that constituted the most important field of activity of KGA-Krakau.

Each cemetery district was led by an artist who was responsible for the concepts and motifs implemented in the objects within their respective district. However, there were exceptions for more significant war cemeteries created in selected locations. In such cases, it was not a specific architect assigned to a particular cemetery district who created the cemetery design, but rather

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work of the Austrian Black Cross in the inter-war period] (Vienna: Heeresgeschichtliches Museum, 2019); Jan Schubert, "Organizacja grobownictwa wojennego w Monarchii Austro–Węgierskiej. 9 Wydział Grobów Wojennych (9 Kriegsgräber–Abteilung) przy Ministerstwie Wojny—powstanie i działalność w latach 1915–18" [War graves in the Austro-Hungarian Monarchy. The 9th Department of War Graves (9. Kriegsgräber-Abteilung) at the Ministry of War—establishment and activity in the years 1915–18], *Czasopismo Techniczne Politechniki Krakowskiej* [Technical Journal of the Cracow University of Technology] 3–A (2009), no. 13, pp. 169–200.

3 On the cemeteries around the Kraków fortress, see Jan Schubert, and Paweł Pencakowski, "Cmentarze Twierdzy Kraków z lat 1914–18" [Cemeteries of Kraków fortress 1914–18], *Rocznik Krakowski* [Kraków Yearbook], no. LIX (1993), pp. 127–51; Agnieszka Partridge, "Cmentarze wojenne XI okręgu cmentarnego 'Twierdza Kraków' w kontekście działalności architektonicznej Hansa Mayra" [War cemeteries of the 11th Cemetery District 'Kraków fortress' in the context of the architectural activity of Hans Mayr], *Rocznik Krakowski* [Kraków Yearbook] no. LXXIX (2013), pp. 141–68.

4 For a list of war graves there, see Kamil Ruszała, "Badania nad grobami żołnierskimi z I wojny światowej na Śląsku Cieszyńskim i Morawach" [Research on WW1 soldiers' graves in Cieszyn Silesia and Moravia regions], in *Górny Śląsk a I wojna światowa* [Upper Silesia and the First World War], ed. Jarosław Racięski and Michał Witkowski (Katowice: Muzeum Śląskie, 2015), pp. 229–50.

FIGURE 12.2 Division of western Galicia into ten cemetery districts, where 378 war cemeteries were created under the auspices of KGA-Krakau
SOURCE: ANK.

competitions were held among various architects from KGA-Krakau to develop an appropriate project that would serve as a monument to the glory of the fallen soldiers, the army, and the emperor. There were also cases where not just one architect was assigned to a specific cemetery district: this occurred where there was a delegation of architects to a particular district, or due to personnel changes within KGA-Krakau or administrative changes between cemetery districts, or in situations where the main architect of a district designed the overall layout while leaving space for another creator to contribute the main architectural element.

In an attempt to provide a collective portrait of the artists of KGA-Krakau, it should be stated that they were all military men, seconded to this job, who represented a different profession prior to the war: mainly as architects, but also as a sculptors. Based on their dates of birth, where we have been able to establish them, they were between 27 and 46 years old when the war broke out (thus, two years can be added to the time when they started their work on the construction of war cemeteries, as the KGA-Krakau project began in 1916). Given that the cemeteries housed the remains of soldiers from multinational armies representing three empires, the task of commemorating the fallen necessitated the collaboration of a diverse team of architects. In reality, Austrian architects predominated, although German architects were also

involved in the creation of several cemeteries. Furthermore, the project also engaged the expertise of Slovak and Polish architects. Each of the designers of the military cemeteries had his own style, which is clearly visible within the cemetery districts. However, similar features were used for each cemetery district, such as the mass-produced cast-iron grave crosses, full of symbols, drawing on syncretism in the arts,[5] which were often repeated throughout western Galicia.

Architects had the considerable task of creating numerous architectural layouts in the cemetery districts, either in places where temporary graves were located, or by creating mass cemeteries and commissioning exhumations of scattered soldier graves. The landscapes of each cemetery district varied significantly. They ranged from geographically diverse locations, including the lower regions of the Carpathian Mountains, such as the Beskids, to lowland areas. The districts also exhibited varying degrees of transportation infrastructure development, with some having well-established railways and roads while others had more limited connectivity. Furthermore, the magnitude of war damage varied among the districts. Specifically, the eastern counties of western Galicia endured more extensive destruction in comparison to the western regions, where some counties remained untouched by military operations (a few counties) or were affected for a shorter duration of less than a month. Accordingly, the architects exploited the terrain's potential or contended with topographic challenges to shape the landscape to commemorate the fallen soldiers. They took special care to honour and incorporate existing burial sites that had been prepared by their fellow soldiers.[6]

Main architects of war cemeteries in KGA-Krakau assigned to war graves districts I–X: (Table 12.1)

5 For analyses of symbolism, see, e.g. Agnieszka Partridge (text), Robert Korzeniowski (photographs), *Otwórzcie bramy pamięci: cmentarze wojenne z lat 1914–18 w Małopolsce* [Open the gate of remembrance: war cemeteries 1914–18 in Lesser Poland] (Kraków: Lettra Graphic 2005); Paweł Pencakowski, "Sztuka w hołdzie bohaterom. Austriacko-węgierskie cmentarze wojenne z lat 1914–18 w Galicji Zachodniej" [Art in tribute to the heroes. Austro-Hungarian war cemeteries from 1914–18 in western Galicia], *Rocznik Historii Sztuki PAN* [Yearbook of Art History, Polish Academy of Sciences], no. XL (2015), pp. 129–62.

6 See Rudolf Broch, and Hans Hauptmann, *Die Westgalizischen Heldengräber aus den Jahren des Weltkrieges 1914–15* [The western Galician heroes' graves from the Years of the World War 1914–15] (Vienna: Druck der Gesellschaft für graphische Industrie, 1918), p. 86. This volume was published in Vienna in 1918 and is a monumental work that describes the achievements of KGA-Krakau, 400 war cemeteries, providing information about their creation as well as practical logistical tips on how to reach each cemetery. It also served as a future guidebook to the former battlefields in Galicia. The author was Rudolf Broch, the commander of KGA-Krakau, while Hans Hauptmann, a conceptual officer, served as the co-author (as well as the literary author of the work, including the inscriptions on the war cemeteries).

TABLE 12.1 Main architects of war cemeteries in KGA-Krakau assigned to war graves districts I–X, Source: ANK, WUoNGW, GW 10; R. Broch, H. Hauptmann, passim; Beata Nykiel, Agnieszka Partridge, and Kamil Ruszała, Sztuka w mundurze: Krakowski Wydział Grobów Wojennych 1915–1918/Art in Uniform: Kraków War Graves Department 1915–1918 (Kraków: Międzynarodowe Centrum Kultury/International Cultural Centre 2022), pp. 114–19.

Cemetery district	Location	Name	Profession	Birth year	Number of cemeteries created within the district	Notes
I	Żmigród	Dušan Jurkovič	Architect	1868	31	Jurkovič also created a chapel in cemetery no. 123 in Łużna
II	Jasło	Johann Jäger	Sculptor	1884	31	—
III	Gorlice	Hans Mayr	Architect	1877	54	Mayr created architectural features of selected military cemeteries around the Kraków fortress area
IV	Łużna	Jan Szczepkowski	Sculptor	1878	27	Guest architect for monument on cemetery no. 118 Hermann Hosaeus (1875–1958)
		Anton Müller	Architect	1873		Exception: cemetery no. 124: by H. Mayr; chapel on Pustki Hill (no. 123) by D. Jurkovič
V	Pilzno	Gustav Rossmann	Architect	1874	26	Designer of a couple of chapels beyond the district: the Christian and Muslim chapel at the garrison cemetery in Olomouc; chapel at cemetery no. 192 in Lubinka (District IV)
		Michael Matscheko von Glassner	Sculptor	1884		Auxiliary architect within District V

VI	Tarnów	Heinrich Karl Scholz	Sculptor	1880	62	Sculptor, beyond District VI he provided some sculpture implemented in other cemetery districts Co-architect of military cemeteries in Łowczówek (no. 171) and Pleśna (no. 173): Siegfried Haller
VII	Dąbrowa Tarnowska	Emil Ladewig	Architect	1884	13	Also the designer of the project of cemetery no. 91 in Gorlice (District III)
		Johann Watzal	Sculptor	1887		Also the architect of several war cemeteries in District VIII
VIII	Brzesko	Robert Motka	Architect	Unknown	52	Creator of the original design for the Gorlice war cemetery in 1915 Author of the unrealized project of the monument on the Dunajec River and in Gorlice
IX	Bochnia	Franz Stark	Architect	1878	46	—
X	Limanowa	Gustav Ludwig	Architect	1876	36	Designer of the monumental cross on cemetery no. 91 in Gorlice; Designer of the monument at cemetery no. 350 in Nowy Sącz is Franz Mazura

SOURCE: ANK, WUONGW, GW 10; R. BROCH, H. HAUPTMANN, PASSIM; BEATA NYKIEL, AGNIESZKA PARTRIDGE, AND KAMIL RUSZAŁA, *SZTUKA W MUNDURZE: KRAKOWSKI WYDZIAŁ GROBÓW WOJENNYCH 1915–1918/ART IN UNIFORM: KRAKÓW WAR GRAVES DEPARTMENT 1915–1918* (KRAKÓW: MIĘDZYNARODOWE CENTRUM KULTURY/INTERNATIONAL CULTURAL CENTRE 2022), 114–19.

3 Creating a Commemorative Landscape for Fallen Soldiers

The aforementioned artists played a significant role in transforming the former landscape of war devastation, ruins, and desolation into a commemorative landscape for fallen soldiers, while also exalting the glory of the Central Powers and Austria. In this way, the creators began conceptualizing the post-war landscape. To achieve these objectives, they adhered to several principles, with the most important and demanding one being the adaptation of war cemeteries and memorials to the diverse landscapes (as is evident in the case of Galicia). Additionally, whenever possible, efforts were made to preserve war graves in the locations where they were originally established by fellow soldiers, whether directly on the battlefield or in immediate rear areas, such as in towns near military hospitals where soldiers often succumbed to their wounds. Nevertheless, it was also crucial to conduct exhumations of scattered war graves (both individual and mass graves) to create larger collective war cemeteries. Often, before embarking on the creation of war cemetery designs, artists would visit the former battlefield to familiarize themselves with its geographical and landscape conditions, and to appropriately locate the respective war cemeteries. This process can be seen in the photographs gathered in the archives.[7] In addition to the conceptual aspects stemming from the ideas and capabilities of war cemetery creators, adherence to proper guidelines established by the military authorities was crucial. These guidelines were compiled in a document titled "Regulations on the Establishment, Maintenance, Beautification, and Documentation of War Graves". This served as a comprehensive resource for the planning, upkeep, enhancement, and recording of war graves.[8] It was a comprehensive document that compiled various solutions regarding the establishment of war graves and cemeteries, outlining the conditions and principles for burials and exhumations, and the creation of war cemeteries. It also provided guidelines for land registration, maintaining cadastres of graves and cemeteries, including their site plans, as well as principles regarding the expropriation

7 Examples can be found in the photographs gathered in the Archiwum Narodowe w Krakowie (the National Archives in Kraków, hereafter: ANK), Wojskowy Urząd Opieki nad Grobami Wojennymi (Military Office for War Graves Care, hereafter: WUOnGW), GW 61–62. Similarly, in relation to the works of Dušan Jurkovič, there are photographs gathered in Slovenský národný archív Bratislava (the Slovak National Archives in Bratislava), osobný fond Dušan Jurkovič (Collection of Dušan Jurkovič).

8 ANK, WUOnGW, GW 9, p. 11 and ff.: Bestimmungen für die Errichtung, Erhaltung, Ausschmückung und Evidenz der Kriegergrabstätten, K.u.K. Feldbuchdruckerei der 4. Armee, 1917 (leaflet). This material has been analysed in literature, see Reichl, *Das Kriegsgräberwesen Österreich-Ungarns im Weltkrieg*, pp. 131 ff.

of land for war cemeteries, the creation and maintenance of green spaces, and, ultimately, principles of humanitarianism in dignified burial practices for soldiers of both the Central Powers and the opposing armies (although special attention was given to the marking of graves of the Central Powers). These guidelines could be fully implemented in areas where the war operations had ceased (as was the case in western Galicia after May 1915), but they were not always applicable to areas where the war operations were still ongoing (as was the case in eastern Galicia throughout the rest of the war period). This difference is also evident in the activities of the War Graves Department in Kraków compared to its sister institutions, such as the War Graves Inspectorates in Przemyśl or Lviv, where the war operations continued for a longer period (KGI-Przemysl area) or even until the end of the war (KGI-Lemberg area).[9] The area between Kraków and the Żmigród-Jasło-Pilzno-Radgoszcz-Szczucin line to the Vistula River provided ample space for approximately 60,000[10] soldiers to be buried in a complex of several hundred war cemeteries. These cemeteries showcased diverse architectural forms within a varied landscape.

War cemeteries in western Galicia were established both in open landscapes and in designated sections within religious cemeteries, primarily Roman Catholic ones. In the Lemko region, they were located on the outskirts of Greek Catholic cemeteries, while in a few cases, military sections were designated within Jewish cemeteries. The placement of these cemeteries was not arbitrary: some of them were directly situated on the battlefield, serving as witnesses to the battles fought and guiding visitors through the former war zone. Others, located within towns and villages, served as resting places for those who died in military hospitals due to injuries sustained in combat, as mentioned earlier. The artistic choices made by the creators of the war cemeteries were purposeful and aligned with the military guidelines regarding cemetery establishment, access to materials, and logistical considerations. Some architects drew inspiration from their previous architectural work prior to the war. On the other hand, there were those who followed the trends originating from German-speaking countries in the realm of war memorial architecture and

9 For the areas with active military warfare, a separate instruction was issued in 1917 titled "Der Friedhof an der Front" [The cemetery at the front]. See Reichl, *Das Kriegsgräberwesen Österreich-Ungarns im Weltkrieg*, p. 137.

10 R. Broch and H. Hauptmann state the number of burials as 60,829. See Broch and Hauptmann, *Die Westgalizischen Heldengräber*, p. 19. This significantly smaller number of burials, compared to area of KGI-Przemysl or KGI-Lemberg also allowed the War Graves Department in Kraków to focus on artistic work and ambitious cemetery projects, rather than solely dealing with exhumations, documentation, and the creation of a much larger number of war cemeteries under wartime conditions only.

cemetery design.[11] The integration of vernacular architecture was not a prevalent feature in this context, as most architects involved in the war cemeteries in Galicia were not native to the region, with the exception of Jan Szczepkowski. However, Dušan Jurkovič made deliberate attempts to incorporate elements of the local architectural tradition in his designs, infusing his works with a distinctively "Slavic" character in contrast to the approaches adopted by other architects. Nonetheless, each of the mentioned cemetery districts had its own distinctive motifs, and a sample of these will be presented below.

Dušan Jurkovič[12] (District I) constructed war cemeteries primarily utilizing wooden materials such as grave crosses and architectural accents. Despite his particular fondness for wood, he did not feel constrained by it and went on to create equally magnificent cemeteries with stone monuments (Krempna, Przysłup, Blechnarka, Łysa Góra, Żmigród, Wola Cieklińska). His artistic endeavours were deeply rooted in local traditions, encompassing Slavic landscape and the natural environment. By observing regional styles prevalent in Lower Beskid, he successfully amalgamated them with motifs derived from the pre-war era. Jurkovič adeptly confronted the challenges posed by war cemeteries situated on elevated terrains, isolated from roadways (Rotunda, Regietów Niżny, Przysłup, Magura Małastowska, Gładyszów-Wirchne, Wysota, Blechnarka), as well as those concealed amidst forested areas housing mass graves (Ożenna), adjacent to Orthodox churches (Ożenna, Krzywe, Długie, Czarne), and within the precincts of local parish cemeteries (Nowy Zmigród,

11 A number of works of this type on war graves and cemeteries have also been published in Germany. See *Soldatengräber und Kriegsdenkmale* [Soldiers' graves and war memorials], ed. k.k. Gewerbeförderungs-Amte (Vienna: Schroll, 1915); *Soldatengräber, Kriegerdenkmäler, Erinnerungszeichen. Entwürfe und Vorschläge* [Soldiers' graves, war memorials, commemorative signs. Drafts and proposals], ed. Bayerischen Kunstgewerbe-Verein München (Munich: Oldenbourg, 1916); Peter Jessen, ed., *Kriegergräber im Felde und daheim* [War graves in the field and at home] (Munich: Bruckmann, 1917).

12 On Jurkovič, see Matúš Dulla, *Vojenské cintoríny v západnej Haliči, sprievodca: Dušan Jurkovič 1916/1917* [Military cemeteries in western Galicia, guide: Dušan Jurkovič 1916/1917] (Bratislava: Vysoká škola výtvarných umení, 2002); Dana Bořutová, Anna Zajková, and Matúš Dulla, *Dušan Jurkovič, súborný katalóg pri príležitosti súbornej výstavy architektonického diela* [Dušan Jurkovič, collective catalogue on the occasion of collective exhibition of architectural work] (Bratislava: Spolok architektov Slovenska, 1993); Dana Bořutová, *Pocta obetiam: Vojenské cintoríny architekta Dušana Jurkoviča* [Tribute to the victims: Military cemeteries of the architect Dušan Jurkovič] (Bratislava: Spolok architektov Slovenska, 2014); Dana Bořutová, "War Cemeteries Built by the K. u. K. Militärkommando Krakau, with Special Regard to Dušan Jurkovič´s Contribution", *RIHA Journal* (2017), Special Issue "War Graves/Die Bauaufgabe Soldatenfriedhof, 1914–1989", DOI: https://doi.org/10.11588/riha.2017.1.

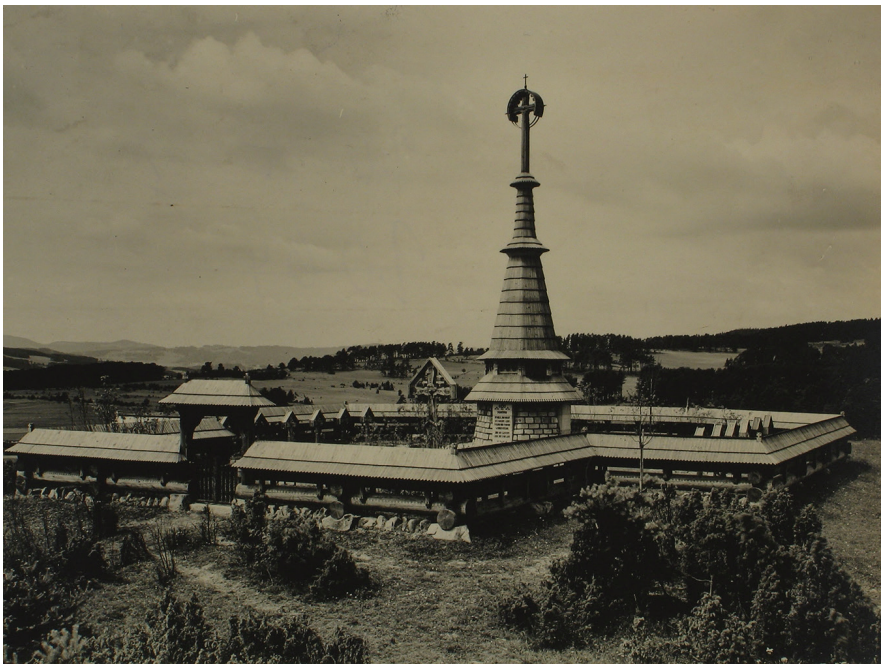

FIGURE 12.3 War cemetery no. 55 in Gładyszów by Dušan Jurkovič
SOURCE: ANK.

Uście Ruskie, Smerekowiec). Consequently, he crafted war cemeteries that harmoniously integrated with the challenging topography of the Lower Beskid region, which was ravaged by the scars of intense warfare. (Figure 12.3)

In the works of Johann Jäger (District 11), an educated sculptor from Dresden, one can observe the prevalence of more robust stone monumental forms. While he occasionally employed wood in certain instances (crosses in Sieklówka, Warzyce, and Tarnowiec, or the monumental wooden crosses in Jasło, Bieździedza, Jabłonica, Cieklina, and Dębowiec), these instances were exceptions. His cemeteries bore resemblance to Teutonic architecture and incorporated references to the realm of Germanic mythology cycles. Jäger experimented with the composition of many elements, including dispersed war graves within the forest (Cieklin), mounds (Cieklin), massive stone crosses (Szerzyny, Jasło, Harklowa Podzamcze), standalone stone monuments (Ołpiny), chapel-like structures (Bieździadka), memorial walls (Osobnica, Bączal), and tumuli (Skołyszyn). (Figure 12.4)

FIGURE 12.4 War cemetery no. 36 in Podzamcze by Johann Jäger
SOURCE: ANK.

Hans Mayr[13] (District III and selected cemeteries surrounding the Kraków fortress) was a former student of the Vienna Secession school. Notably, his artistic practice was characterized by substantial architectural solutions. Mayr crafted massive stone enclosures (Ropica Ruska, Biecz, Sękowa). However, his trademark element was the wooden memorial cross, topped with a sheet metal roof (Sękowa, Ropica, Stróżówka, Szymbark, Binczarowa, Bednarka, Biecz,

13 The profile of Hans Mayr as an architect of war cemeteries in Galicia seems to be well recognized, see Paweł Pencakowski, "O cmentarzu wojennym w Sękowej koło Gorlic i działalności wiedeńskiego architekta Hansa Mayra w Galicji w latach 1914–18" [On the war cemetery in Sękowa near Gorlice and the activities of Viennese architect Hans Mayr in Galicia in 1914–18], *Kwartalnik Architektury i Urbanistyki* [Architecture and Urbanism Quarterly] no. 3, issue 39 (1994), pp. 189–204; Jan Schubert, "Wiedeński architekt Hans Mayr i jego twórczość w latach 1903–14" [The Viennese architect Hans Mayr and his work in the years 1903–14], in *Znaki Pamięci IV* [Signs of Remembrance IV], ed. Kamil Ruszała and Mirosław Łopata (Gorlice: Crux Galiciae, 2011), pp. 5–24; Agnieszka Partridge, "Projekt nowego cmentarza ewangelickiego Hansa Mayra w Bielsku Białej i jego echa w elementach galicyjskich cmentarzy wojennych okręgów Gorlice i Kraków" [The project of the new Evangelical Hans Mayr cemetery in Bielsko Biała and its echoes in the elements of the Galician war cemeteries of the Gorlice and Kraków districts], in *Znaki Pamięci IV* [Signs of Remembrance IV], ed. Kamil Ruszała and Mirosław Łopata (Gorlice: Crux Galiciae, 2011), pp. 25–31.

FIGURE 12.5 War cemetery no. 80 in Sękowa by Hans Mayr
SOURCE: ANK.

Rodziele, Małastów). He had to contend with diverse and uneven surroundings, spanning from the Lower Beskid region to the Pogórze area. This entailed working with war cemeteries located in small towns, as well as those situated on the slopes of the foothills. Furthermore, Mayr faced the challenging task of bestowing architectural significance upon sites of particular importance to the military, monarchy, emperor, and citizens. (Figure 12.5)

Jan Szczepkowski (District IV) presented several designs for war cemeteries, in which he endeavoured to strike a balance between references to folk art, as noted in the descriptions of his work by Broch and Hauptmann,[14] and a

14 Rudolf Broch (1871–1942) and Hans Hauptmann (1865–194?) – both were officers in the Austro-Hungarian army. Broch served as the commander of the War Graves Department in Kraków from its establishment until the end of the Austro-Hungarian monarchy. After the war, he remained associated with Vienna and the Austrian Black Cross. From 1 January 1916, Hauptmann was seconded to the Imperial and Royal Military Command in Krakow as a conceptual officer in the War Graves Department, where he served until 1918, similar to Broch. Hauptmann, with a literary inclination, also authored nearly 200 poetic inscriptions praising death and military glory, which were placed on war cemeteries in western Galicia. Both were authors (though the literary inclination is more attributed

more substantial form, stemming from the principles of creating war memorials during that era.[15] Szczepkowski addressed various types of burial arrangements, including sections within parish cemeteries, separate war cemeteries, and scattered graves. In the latter case, he transformed the hillside of Pustka in Łużna into a vast memorial park, dividing the sections according to military affiliation. This included a separate section for fallen soldiers from the Austro-Hungarian, German, and Russian armies. The grandeur of this endeavour was enhanced by the addition of a wooden chapel and entrance gate designed by Jurkovič. The style of solidity and massiveness was also evident in the works of Anton Müller, Szczepkowski's co-creator within the district. Müller's contributions included the incorporation of heavier stone crosses, monuments, and memorial walls that blended seamlessly with the landscape (Zborowice, Staszkówka, Zagórzany).

Gustav Rossmann, formed an intriguing duo with his collaborator Michael Matscheko von Glassner (District V). Rossmann, characterized as a subtle and delicate artist, drew inspiration from the noble lines of classicism. Matscheko, a sculptor, on the other hand, primarily found inspiration in the flexibility and dynamism of forms from the Biedermeier period. This unique combination of artistic approaches was described by Broch and Hauptmann.[16] Rossmann, with meticulous attention to detail, placed particular emphasis on vegetation and its development as an integral part of the cemetery composition (Pilzno, Róża, Demborzyn, Czarna). They collaborated in crafting central monuments in the form of pylons crowned with crosses or goblet (Pilzno, Jodłowa, Czarna). Additionally, they designed walls adorned with memorial crosses (Błażkowa and Skurowa), as well as memorial walls (Brzostek, Zassów). In some instances, they incorporated central memorial crosses (Januszkowice, Gorzejowa, Parkosz), while occasionally employing wood as a material (Błażkowa, Róża, Gorzejow). Demonstrating their adeptness in harmoniously integrating the cemetery within the surrounding landscape, they skilfully incorporated existing graves on terraces (Bukowa, Zawadka Brzostecka). (Figure 12.6)

Heinrich Scholz (District VI) excelled as a sculptor, primarily working with stone. He created several monumental sculptures, including a triumphant Christ figure (Janowice), a man with oak wreaths (Siedliska), and helmet-shaped warrior monuments inspired by ancient warfare (Szczepanowice, Chojnik). Within his district, Scholz also produced bas-reliefs for cemeteries,

to Hauptmann) of the guidebook *Die Westgalizischen Heldengräber aus den Jahren des Weltkrieges 1914–1915*, published in Vienna in 1918 (see footnote 6).

15 Broch and Hauptmann, *Die Westgalizischen Heldengräber,* p. 150.

16 Broch and Hauptmann, *Die Westgalizischen Heldengräber*, p. 190.

FIGURE 12.6 War cemetery no. 226 in Zawadka Brzostecka by Gustav Rossmann
SOURCE: ANK.

such as the depiction of Saint George battling a dragon (Siemiechów) and the poignant Pietà of a soldier removing Christ from the cross (Chojnik). Furthermore, his artistic contributions extended beyond his district, as evidenced by the *Angel of Death* (Bochnia). Scholz's portfolio encompassed a diverse array of commemorative structures, including numerous memorial walls, columns, and imposing monuments. While predominantly working with stone, he occasionally ventured into lighter wooden forms, although stone remained his primary medium. (Figure 12.7)

Emil Ladewig and Johann Watzal (District VII) formed a complementary pairing in their cemetery designs, employing thematic motifs in their memorial walls, central crosses, and cenotaphs. Their primary medium of choice was concrete, and they utilized forged or cast-iron grave crosses. In their work they skilfully integrated war cemeteries with their surroundings, including natural elements, such as the incorporation of surrounding of willow trees (Uście Jezuickie), symbolizing a renewal of life and the resurrection of the fallen (as trees are among the first to awaken after winter) (Figure 12.8). Certain cemeteries designed by Ladewig and Watzal boasted ample space, such as Dąbrowa Tarnowska, Otfinów, and Biskupice Radłowskie. In these locations, the artists strategically planned the vegetation to eventually transform them into heroic

FIGURE 12.7 War cemetery no. 190 in Janowice by Heinrich Scholz
SOURCE: ANK.

groves, paying tribute to the fallen soldiers, with the exception of Otfinów, where they planned to establish a monumental chapel, which remained an unrealized expression of the designers.

Robert Motka (District VIII) employed robust stone structures in his designs. Two notable examples are Brzesko and Charzewice, where he created massive monuments as the main architectural focal points. These monuments

FIGURE 12.8 War cemetery no. 251 in Uście Jezuickie by Johann Watzal and Emil Ladewig
SOURCE: ANK.

consisted of a cross and a pylon crowned with an equal-armed cross, placed on a podium surrounded by a substantial pergola supported by twelve columns (Figure 12.9).

Similarly, Franz Stark (District IX), like the architect of his neighbouring district, specialized in stone formations. He crafted memorial walls, imposing memorial crosses, and stone chapels (Leszczyna). Although he rarely worked with wood, notable exceptions include the main cross at Żegocina and Sobolów.

Gustav Ludwig (District X) was also renowned for his stone works, aiming for monumentality in his cemetery and monument designs, realized through neo-historicist forms such as obelisks, columns, pylons, and tumuli. He faced the significant task of preparing memorial sites for the former battlefield of the Łapanów-Limanowa operation (December 1914). In Limanowa, on Jabłoniec Hill (no. 360), he proposed a two-part structure: a cemetery chapel as the main architectural accent, along with a memorial dedicated to Ottmár Muhr, commander of a hussar regiment who died in Limanowa, and a second terrace featuring a dominant architectural element—a cross-topped monument. Ludwig created cemetery chapels, predominantly in stone (Leszczyna, Krasne Lasocice), but also in wood (Kamionka Mała-Orłówka).

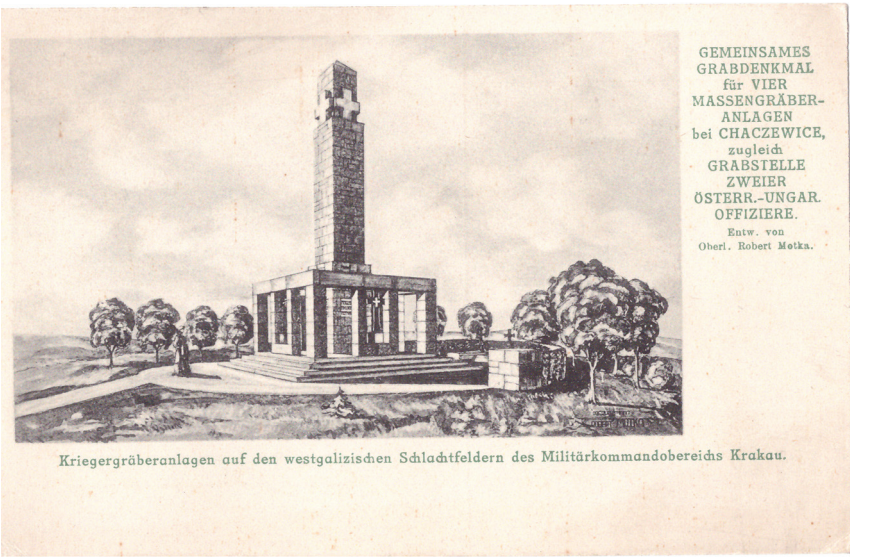

FIGURE 12.9 Main monument on war cemetery no. 290 in Charzewice by Robert Motka on propaganda postcard
SOURCE: PRIVATE COLLECTION OF KAMIL RUSZAŁA.

The above overview clearly demonstrates that the architects of war cemeteries in the Austrian military burial system in western Galicia had considerable scope for their own creative ideas. Each cemetery designer continued their individual style in shaping the landscape of commemoration for fallen soldiers. Landscape aspects played a significant role in these projects, as seen above. Many war cemeteries were established on elevated terrain, becoming distinctive elements of the Galician landscape. The natural environment played a complementary role, both as the existing surroundings in which the original military graves and later war cemeteries were created and as the vegetation intentionally incorporated into the cemetery design, with consideration of its future development over the years. All of this formed an integral part of the war memorial, as a component of the created landscape of commemoration for fallen soldiers. It should be noted that this entire enormous undertaking faced numerous challenges, which were not only financial, logistical, propagandistic, and construction-related in nature but also concerned the acquisition of the land for the cemetery (which was often through expropriation). Furthermore, it was carried out during the ongoing war. Most projects were completed before the autumn of 1918, i.e. before the dissolution of empires. In a few cases, the new authorities in Małopolska (Lesser Poland) finalized the task, adding the missing elements that were typically prepared for placement

on a given cemetery. However, these became examples of imperial legacies in the post-imperial space of former western Galicia and were adopted by the new authorities and the new society. Yet, during the early post-war period, certain artists' communities expressed critical opinions about these memorials, although this did not necessarily result in them being condemned to oblivion.

When designing war cemeteries, the importance of these sites was well understood—not only as eternal resting places for the fallen but also as venues for numerous commemorative events during times of peace. Therefore, considerable attention was given to structures that served as reminders of important military events, as seen in the case of the Limanowa war cemetery on Jabłoniec Hill, commemorating the Łapanów-Limanowa operation of December 1914. Similarly, the monument commemorating the most significant military success on the Eastern Front, the Battle of Gorlice from 2 to 5 May 1915, was planned as a separate undertaking, deserving dedicated attention.

4 A Grand Monument to the Gorlice Victory

The tremendous success achieved by the Austro-German forces at the Battle of Gorlice warranted a distinct architectural expression in the design of war monuments and cemeteries established in Galicia. In this regard, Hans Mayr played a prominent role as the primary architect responsible for the cemeteries in District III. Broch and Hauptmann, in their narrative on the Galician battlefield, acknowledged that the architect assigned with the task of "eternally perpetuating the memory of the heroes who perished on this crucial and glorious section of the front" possessed a profound understanding of the challenge. Through his works, he surpassed the expectations of his commissioners and left an indelible mark on the commemorative landscape.[17] Mayr exploited the potential of the landscape by creating war cemeteries scattered on numerous hills, which at the time (more than a century ago) were practically unforested and faced each other. As noted by architects Urszula and Marcin Brataniec, the military technology of the years of World War I was based mainly on the optics of natural sight, which is reflected in the layout of war cemeteries, and the distribution of objects confirms the manner and place of fighting, while the specific topography unambiguously indicates the scenario of the battle. The researchers pointed out in the example of war cemeteries of

17 Broch and Hauptmann, *Die Westgalizischen Heldengräber*, p. 109–10.

Hans Mayr's project, located in the valley of the River Sękówka, that there is a direct link between groups of objects visible to each other.[18]

Mayr was aware of the military and political significance of the Battle of Gorlice in the first days of May 1915, which changed the course of the Eastern Front and at the same time sought to exploit the potential of the area. Therefore, the architect experimented with creating a mausoleum for the fallen which would dominate the landscape of the region and as a monument of war would correspond with other objects: on the hills in Ropica and Sękowa he designed a series of war cemeteries, of which a huge chapel-mausoleum, crowning the two existing terraces with grave fields, was to be built as the third terrace at cemetery no. 80. He intended it to be a monumental chapel, topped with a dominant, gilded dome, with the date "May 1915" below it on the front.[19] (Figure 12.10 and Figure 12.10A). The associations are unmistakable and point immediately to the Art Nouveau architecture of Vienna. Knowing the architect's pre-war past and that he was a talented pupil of Otto Wagner, our thoughts immediately turn to objects such as the Am Steinhof church in Vienna (Penzing), crowning the psychiatric hospital (Otto-Wagner-Spital). The chapel in Sękowa was not realized due to long-lasting discussions on where the main monument of the victory of the Central Powers at Gorlice should be placed, and, due to financial issues. Ultimately, the cemetery in Sękowa (no. 80), already very monumental, was limited to two terraces with grave fields, and as architectural accents there were placed four pylons at the entrance (lower terrace), a stone monumental cross (at the junction of terraces),[20] and a stone pergola (upper terrace).

However, it was Gorlice that was much more associated with the significant military success. The severely damaged town, which was under Russian occupation from November 1914 to spring 1915, and located directly on the front line, was full of thousands of fallen soldiers and scattered soldiers' graves and could

18 Urszula Forczek-Brataniec and Marcin Brataniec, "Studium powiązań widokowych cmentarzy I wojny światowej jako narzędzie ochrony i ekspozycji, na przykładzie obiektów zlokalizowanych w Dolinie Sękówki" [Study of the scenic connections between WWI cemeteries as a toll for protection and exposition, on the example of objects located in the Sękówka Valley], in *Znaki Pamięci III* [Signs of Remembrance III], ed. Mirosław Łopata (Gorlice: Crux Galiciae, 2010), pp. 54–61; Urszula Forczek-Brataniec and Marcin Brataniec, "Cmentarze I wojny światowej—pomnik rozproszony w krajobrazie [Cemeteries of World War I—a monument dispersed in the landscape], in *Znaki Pamięci* [Signs of Remembrance], ed. Maciej Dziedziak (Gorlice: Crux Galiciae, 2008), pp. 77–84.

19 See: ANK, WUONGW, GW 41, pp. 847, 859: design of the chapel signed by Hans Mayr in February 1916; for an image of the unrealized chapel, see Broch and Hauptmann, *Die Westgalizischen Heldengräber*, p. 434.

20 An alternative obelisk by a German sculptor Bernhard Bleeker was prepared, which will be discussed later.

FIGURE 12.10 War cemetery no. 80 in Sękowa by Hans Mayr with unrealized chapel
SOURCE: R. BROCH, H. HAUPTMANN, 434

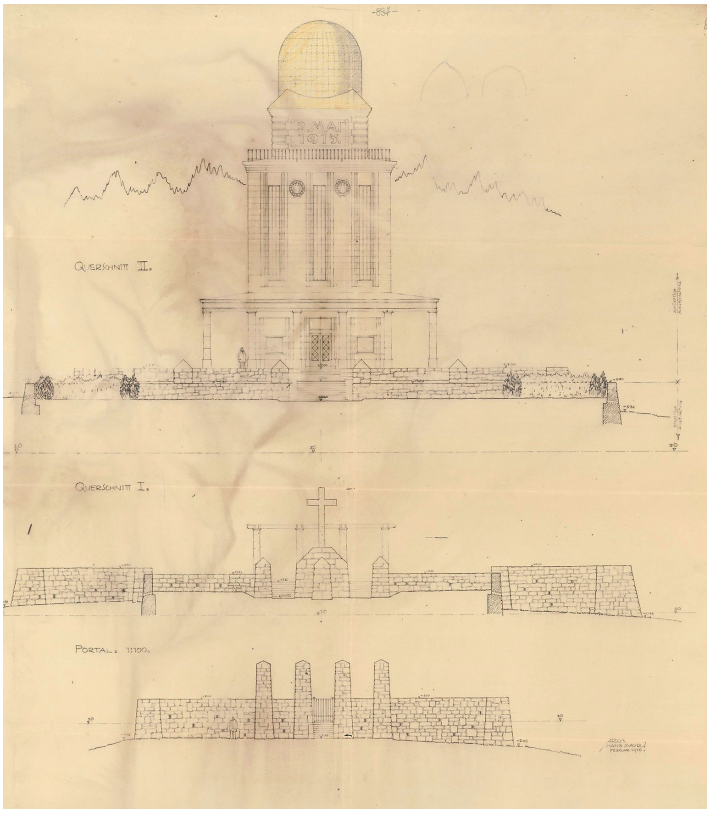

FIGURE 12.10A Unimplemented chapel project at the war cemetery in Sękowa near Gorlice, designed by Hans Mayr
SOURCE: ANK.

not therefore remain outside the imperial project. The main dilemma was whether to merge the cemetery establishment with the memorial commemorating the breakthrough of the front, or to split it into two different projects. For this purpose, a separate unit was organized within the structure of KGA-Krakau, specifically within its field structures, namely the Battlefield Clearing Command (Schlachtfeld-Aufräumungs-Kommando), which were tasked with this mission. The unit was established on 1 July 1916, designated as the 12th Command, and was led by Lieutenant Maximilian (Max) Glogar (born 1882), who was responsible for the war cemetery in Gorlice. It received significant technical support as well as personnel support for the physical work involved in the construction of the cemetery. According to data from the period between June and July 1916, 134 Russian prisoners of war from the Dąbie camp[21] were employed in the construction of the Gorlice cemetery, and additional personnel, consisting of 40 bricklayers, five stonemasons, and three quarry workers, were delegated from Unit III in Sękowa. The unit's commander in Sękowa, First Lieutenant Broda, supported Glogar in the construction project in Gorlice, with the aim of completing the facility by 15 October 1916.[22] Despite the special commitment and the preparation of a dedicated workforce to complete this cemetery, it was still uncertain how the success of the Battle of Gorlice would ultimately be commemorated in terms of the main war monument.

KGA-Krakau tried to combine both solutions to create a war monument of glory together with a war cemetery. The largest cemetery was established on a summit in the town, called Cemetery Hill (Góra cmentarna), which offered a view of "Gorlice, a city of tears and rubble, and of the magnificence of fields, forests, and mountains which, despite the horror of war, have saved their eternal youth", as Broch and Hauptmann movingly wrote.[23] Initially, the

21 The prisoner of war camp near Kraków in Dąbie, currently an administrative part of Kraków, was characterized by the common practice of utilizing prisoners as a workforce. Initially, Russian prisoners were engaged, and from July 1916 onwards, Italian prisoners were also involved (see correspondence regarding the exchange of Russian prisoners of war for Italian prisoners of war from the Mauthausen and Sigmundsherberg camps and the dispatch of 500 of them to Galicia for this purpose, ANK, WUOnGW, GW 1, p. 1567: correspondence imperial and royal Ministry of War to Military Command in Kraków, 2 July, 1916). Later, both Russian and Italian prisoners of war were used for construction work, and were transported from the POW camp in Wadowice to Gorlice or Tarnów (see ANK, WUOnGW, GW 2, pp. 985–986: Feldtransportleitung Krakau to KGA-Krakau, 2 August 1916).

22 See Broch and Hauptmann, *Die Westgalizischen Heldengräber*, pp. 14–17 (schematic diagram); for correspondence regarding this matter, see ANK, WUOnGW, GW 1, pp. 1411–413: Schlachtfelder-Aufräumungs-Kommando No. 12 in Gorlice to KGA-Krakau, 30 June 1916.

23 Broch and Hauptmann, *Die Westgalizischen Heldengräber*, p. 118.

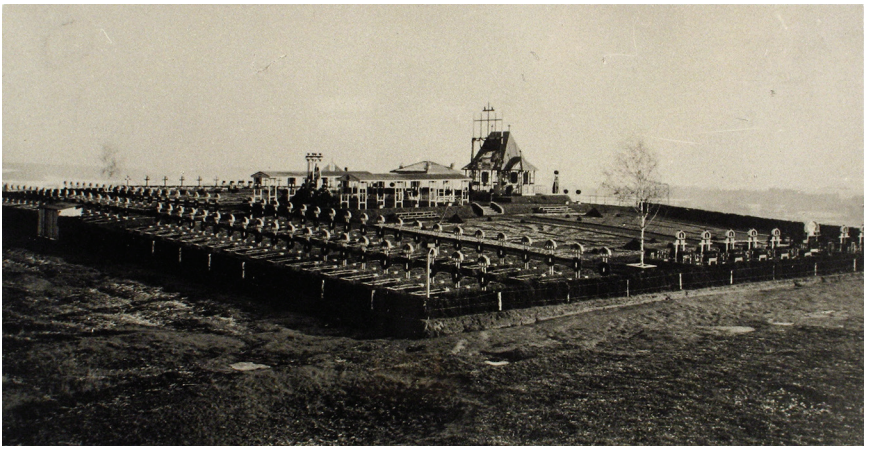

FIGURE 12.11 Original decoration by Robert Motka of the war cemetery on Cemetery Hill in Gorlice
SOURCE: ANK.

architectural setting for the soldiers' graves, still established by the Battlefield Clearing Command, was hastily created by architect Robert Motka, so that a commemoration of fallen soldiers could be conducted on 1 and 2 November. Motka created a chapel, two pavilions for participants of field masses, and a war memorial, and adorned the soldiers' graves with various compositions of crosses featuring national symbols and commemorative plaques. (Figure 12.11). However, this decoration represented a temporary premise and all of these architectural accents were demolished in order to build a monument worthy of the victory at Gorlice. To properly commemorate the Gorlice operation and the soldiers who died in it, KGA-Krakau called for a competition among its own architects to create a design for the cemetery. This provided the opportunity for different artists and architects to submit their design proposals to commemorate the great success of the Central Powers army.

In consideration of the need to refrain from the hasty creation of a memorial to appropriately commemorate the pivotal event of the breakthrough on the front, an alternative conceptual approach was adopted. It was decided that the initial focus would be on establishing the burial field and incorporating smaller architectural elements such as walls and gates, while intentionally leaving a vacant space for the subsequent development of a grand triumphal memorial.[24] Henceforth, the implementation of the concept proposed by

24 Broch and Hauptmann, *Die Westgalizischen Heldengräber*, p. 117.

Emil Ladewig commenced, which entailed the construction of a substantial cemetery gate, a massive fence, a field altar, and corner pylons in accordance with his design.[25] Such a war cemetery composition, seen from the outside, evokes associations, in terms of its reminiscent form, with the concept of the *Totenburg* (Fortress of Death) created in the interwar period, which was accessed through a massive gate.[26] The central area remained a blank canvas for other architects, leading to a variety of proposals and suggestions flowing into KGA-Krakau.

One of the proposals was made by the above-mentioned Robert Motka, who embellished the first graves of fallen soldiers, which were accompanied by a monument and chapel, as described above. Motka proposed to create a monumental chapel as a victory memorial with an ossuary (Siegesdenkmal-Ehrenhalle), built on the plan of an isosceles cross, inscribed in a circle. The monument was supposed to consist of three parts: lower, middle, and upper. In the lower part, there was to be an ossuary, with stairs leading down from the rear of the monument. The middle part was intended to be a massive chapel, resembling a fortification with corner flanks, accessed through a massive gate. The upper part was to be a 30-metre monument, crowned with a cross. The monument also included sculptures: a knight, which was to be placed just above the entrance (similar to a sculpture by Franz Mazura from cemetery no. 350 in Nowy Sącz), and four sculptures below the crown topping the monument, reminiscent of Art Nouveau angels.[27] (Figure 12.12). This project remained unrealized, as did another of his visions for a memorial chapel (Gedachtniskapelle Dunajec), commemorating the battles on the lower Dunajec River.

25 For the design of the pylon, see ANK, GW 38, p. 3: project undated, signed by Gustav Ludwig. The report from the inspection trip of Field Marshal Adam von Brandner to the military cemeteries in Galicia on 5–6 November 1916 mentions his suggestion to place these pillars symmetrically in each corner of the cemetery. However, as is known, this was not done, but the pillars already erected in the front of the cemetery, on the sides of the gate, were removed during the war due to conceptual changes to the cemetery. ANK, WUonGW, GW 6, p. 544: inspection report, dated 5–6 November 1916.

26 Stefan Goebel, *The Great War and Medieval Memory: War, Remembrance and Medievalism in Britain and Germany, 1914–1940* (Cambridge: Cambridge University Press, 2007), pp. 101–2.

27 The chapel was described according to its unrealized plans and the image of it by Franz Poledne (Broch and Hauptmann, *Die Westgalizischen Heldengräber*, pp. 427–28) and its description by Ludwik Misky, who noted his observations after inspecting the model exhibited in Kraków in April 1916 ("Głos Narodu" [The voice of the nation] 1916, No. 268, pp. 2–3).

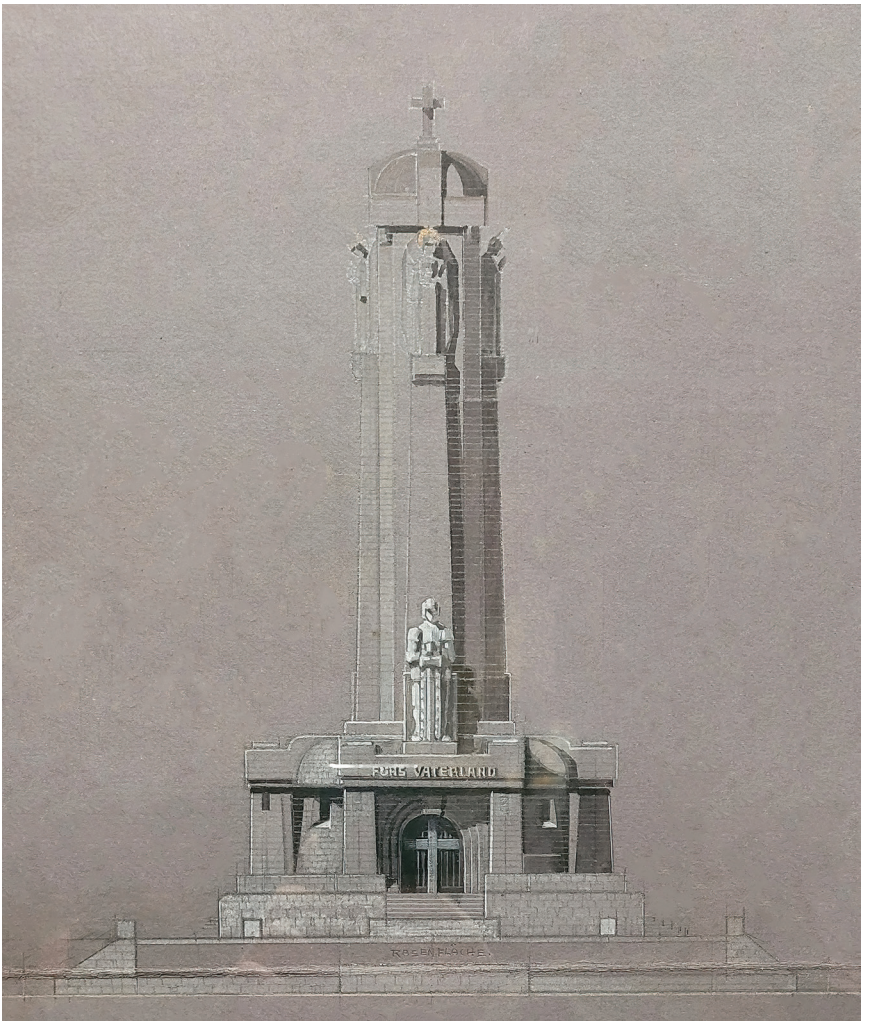

FIGURE 12.12 Unrealized monument for military cemetery in Gorlice by Robert Motka with ossuary, chapel and column
SOURCE: "ART IN UNIFORM. THE WAR GRAVES DEPARTMENT IN KRAKÓW 1915–1918" EXHIBITION IN INTERNATIONAL CULTURAL CENTRE, KRAKÓW, NOVEMBER 2022.

The proposal to incorporate the monument of Gorlice into Ladewig's project was prepared by Dušan Jurkovič (Figure 12.13). He envisaged as the main object a monumental chapel with five slender arcades (from the front perspective) in the form of clearances in the lower storey and with an arcade wider in the upper storey, also remaining in the clearance. This design was intended to

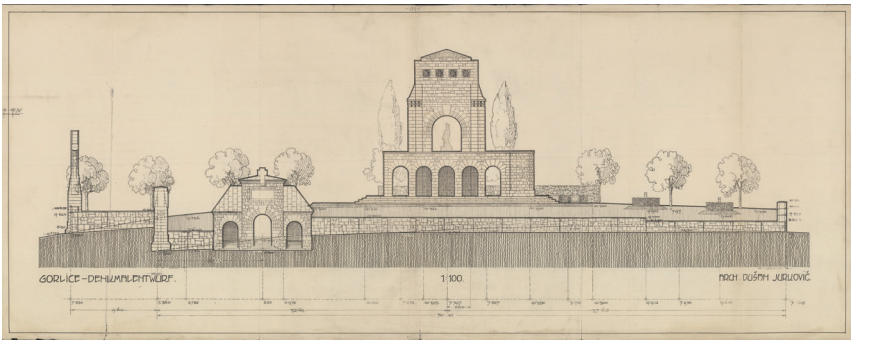

FIGURE 12.13 Unrealized "Hall of Fame" by Dušan Jurkovič as the main architectural accent on the military cemetery Gorlice
SOURCE: ANK.

evoke the concept of a "Hall of Fame" (Ruhmeshalle). The architect proposed placing a stone sculpture there, which he did not specify in terms of form—Jurkovič was not a sculptor—leaving room for manoeuvre for the professional stone sculptor.[28] This project combined the already created fence, gate, and pylon of Emil Ladewig's design, but in addition, in the place of the bastion, it assumed the placement of a massive, over 10-metre-high stone cross designed by Gustav Ludwig, which eventually became the main architectural accent of the site.[29]

There was no clear vision of what the composition of the war cemetery with a monument of glory in the landscape of Gorlice should ultimately look like. Major Rudolf Broch personally presented the "Hall of Fame" project in Vienna, suggesting that Jurkovič's vision, with its monumental concept, could be taken into consideration. However, General Hentke, the head of the War Graves Department at the Ministry of War in Vienna, stated in a letter dated 5 November 1916 regarding the project:

> [it] has not been approved and its execution should be ceased. Currently, the best solution for the intended purpose seems to be limited to the construction of a monumental cross or a massive resting stone block that provides space for an inscription.[30]

28 For the design of the chapel, see ANK, GW 38, 189: project undated, signed by Dušan Jurkovič.

29 For the design of the memorial cross see ANK, GW 38, p. 7: project dated 20 February 1917, signed by Gustav Ludwig.

30 ANK, WUONGW, GW 6, p. 297: letter of Gen. Hentke—chief of IX Department of the imperial and royal Ministry of War to Military Command in Kraków, 5 November 1916.

It is puzzling whether it was the enormous financial resources that caused these projects to fail, both in Gorlice and Sękowa. It would appear that this is not necessarily the case, especially since no expense was spared on the undertaking, and sometimes elements of the cemetery were removed for conceptual reasons or even entire cemetery layouts, as was the case with the original design of the Gorlice cemetery. It turns out that these projects were rejected by the Ministry of War because, as was argued by General Hentke,

> the battle sites in Gorlice were attributed such immense significance in the historical context of the war that the question of monument construction should remain the subject of a general competition accessible not only to Austrian-Hungarian artists but also to German artists.[31]

One of the architects from KGA-Krakau, Gustav Ludwig, was summoned to an audience with the German emperor, Wilhelm II, by Max Günther, the German Ministry of War's representative in KGA-Krakau,[32] to personally receive direct instructions regarding the establishment of the monument.[33] On 2 December 1916, Ludwig visited the German headquarters and reported to Colonel von Estorff, the Adjutant General of Emperor Wilhelm II. Gustav Ludwig described the course of the visit as follows:

> The Colonel presented His Majesty with a collection of small hand sketches for various styles of memorial tombstones and crosses. During this time, Colonel von Estorff went to His Majesty, and after a short wait, he was summoned to His Majesty's anteroom. His Majesty soon appeared, discussed my project for the war cemetery in Gorlice, and then provided suggestions for changes to the design for potential participation in the Gorlice monument competition, as well as for small memorial tombstones and crosses that had caught His Majesty's attention during

31 ANK, WUONGW, GW 6, p. 737: Colonel von Estorff, Emperor Wilhelm II's aide-de-camp to the Ministry of War in Vienna, November 15, 1916.

32 ANK, WUONGW, GW 1, p. 961: KGA-Krakau to Military Intendency of the Military Command in Kraków, 9 June 1916. His name appears multiple times in the correspondence of KGA-Krakau from the beginning of 1916 onwards, in various contexts, including in the list of all employees and collaborators of KGA-Krakau. He was tasked with evidencing graves of fallen soldiers from German army in western Galicia. Presumably a second task might have been ensuring that German voices were not overlooked in the work of creating war cemeteries, although no significant breakthrough occurred here until the end of the war and his role was limited to the burial affairs of German soldiers in Galicia and the documentation of their graves.

33 ANK, WUONGW, GW 6, p. 741: notes of KGA-Krakau on visit of Gustav Ludwig to Wilhelm II regarding monument of Gorlice and contribution of German architect, 15 November 1916.

FIGURE 12.14 War cemetery no. 91 in Gorlice in its final form: monumental entrance gate and stone wall by Emil Ladewig, and a monumental memorial cross by Gustav Ludwig
SOURCE: ANK.

his travels. Ultimately, he asked me to develop them for German graves and present them to him in a usable form after a time.[34]

After his return to Kraków, Gustav Ludwig followed the ideas of General Hentke from the Viennese Ministry of War and Emperor Wilhelm II and designed a monumental cross, which was placed in the centre of the war cemetery.[35] Therefore, the architecture of the main war cemetery in Gorlice was ultimately limited to the central cross designed by Gustav Ludwig, which was incorporated into the existing architectural elements created by Emil Ladewig (Figure 12.14).

However, this debate and the personal engagement of Emperor Wilhelm II in the project of the creation of military cemeteries in western Galicia shows the importance of this matter. After touring the former battlefield in western Galicia and witnessing the magnitude with which war cemeteries and monuments were being erected, the German emperor was impressed by the immense

34 ANK, WUONGW, GW 7: report of Gustav Ludwig to KGA-Krakau on visit to Wilhelm II on 2 December 1916.

35 The project of the memorial cross: ANK, WUONGW, GW 38, p. 7: project dated 20 February 1917, prepared in Kraków, signed by Gustav Ludwig.

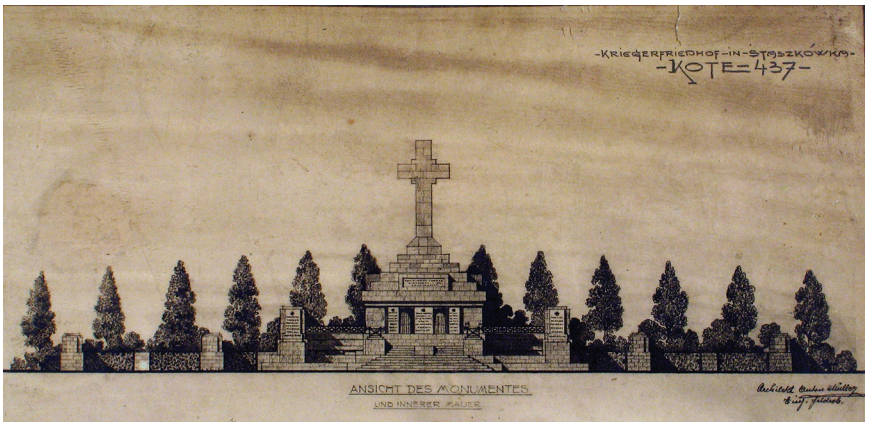

FIGURE 12.15 Original and unrealized monument at war cemetery no. 118 in Staszkówka by Anton Müller
SOURCE: ANK.

imperial project being carried out by the Austrian war burial services. He did not want Germany's participation to be overlooked, as the Gorlice-Tarnów campaign was a shared victory between the united armies of Austria-Hungary and Germany. Therefore, suggestions for an open competition, including for German architects, were put forward. Thus it became apparent that typically ambitious considerations were at play: the aim was not only to represent the glory of Austria and its army in the grand propaganda work but also to provide an opportunity for German architects to make their own contributions to this monumental project, which was intended to endure for generations in the landscape of memory and identity.

Within this project organized in the western Galician battlefield, only individual examples can be found where German architects, not affiliated with KGA-Krakau, created monuments in war cemeteries in western Galicia. The most noteworthy example is the monument by German sculptor Professor Kurt Hermann Hosaeus at cemetery no. 118 in Staszkówka (District IV—Łużna). Initially, the war memorial for this cemetery was designed by another architect, namely Anton Müller, who proposed his own vision of the main war memorial in the form of a powerful stone altar wall, topped with a stepped pyramid, and crowned with a massive cross—as seen from the preserved designs dated November 1916 (Figure 12.15).[36] However, in this cemetery, where a considerable number of German soldiers were buried, a space was created

36 ANK, WUONGW, GW 62, p. 343; GW 41, p. 1301: project by Anton Müller, undated. The intention was to erect this monument in the cemetery in Tarnów, but it was not fully realized before the end of the war, and only its foundations remained.

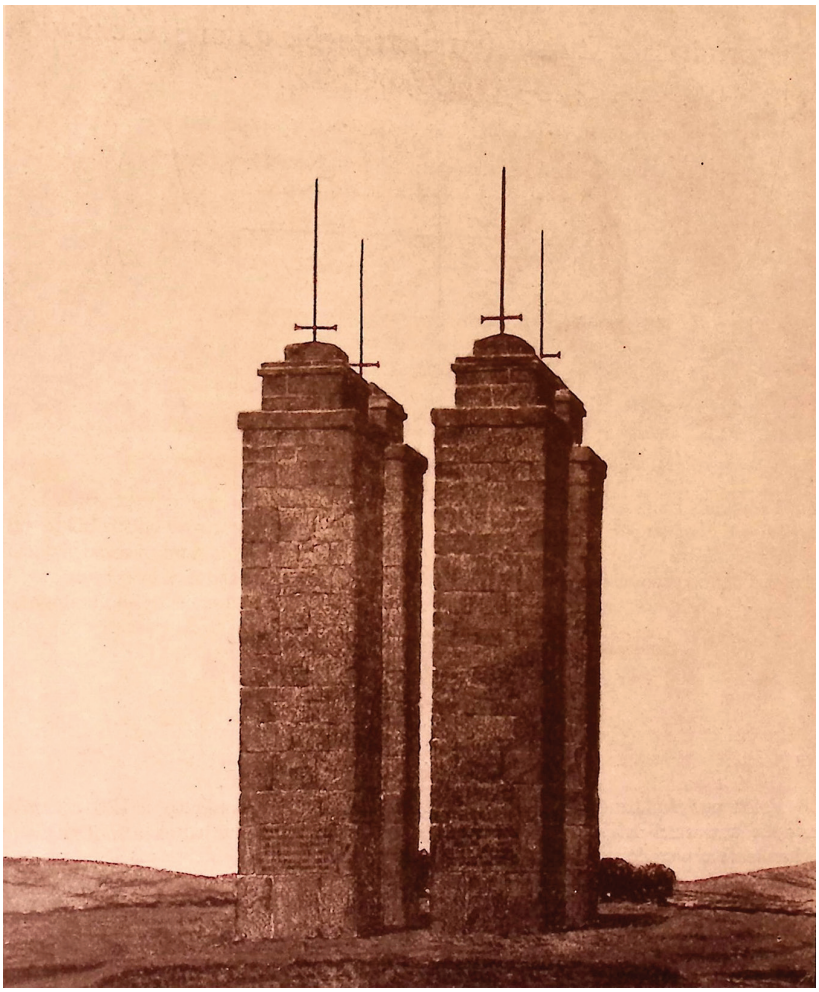

FIGURE 12.16 Realized project of the monument at cemetery no. 118 in Staszkówka by Prof. Kurt Hermann Hosaeus
SOURCE: R. BROCH, H. HAUPTMANN, 169.

for the German project. In Hosaeus's vision, he proposed creating a monument in the form of four pylons topped with upside-down swords pointing towards the sky (Figure 12.16). In correspondence addressed to KGA-Krakau from Berlin on 11 July 1917, he personally noted about his vision:

> The design for the monument on hill 437 in Staszkówka has been conceived in a simple, powerful, and monumental style, taking into account the specific features of the terrain. The hill's summit requires the

> monument to have equally impressive outlines from all sides. As the hill gradually transitions into a plateau even from a short distance, creating a soft contour with visible mountain lines in the background, it necessitates the vertical shaping of the monument, as only in this way can the desired effect be achieved. Additionally, rigid shapes have been chosen to ensure that the monument stands out amidst the softness of the surrounding terrain even from a distance. Given the remote and solitary location, unnecessary embellishments have been avoided, except for the inscription on the front side of the pillars.[37]

It was a very severe yet dignified and monumental vision of a war memorial. Hosaeus also emphasized, presumably to highlight the advantages of his project, that the implementation of the design could be executed using the same building materials originally intended for Müller's initial project. He even calculated that his design would save approximately 50 cubic metres of stone. Additionally, the height was to be reduced: while the original project proposed a 16-metre-high altar with a cross, Hosaeus planned the pylons to be 12 metres in height. He also prepared detailed drawings of the sword structures and suggested that they be cast and galvanized at the "Vulkan" iron foundry in Częstochowa. The front side of the pylons (facing the cemetery entrance) were to feature two inscription plaques: the first with the date "2 May 1915" and the second stating: "Here rest Austro-Hungarians, Germans, and Russians".[38] Broch and Hauptmann described this monument in the following words:

> Professor Hosaeus devised a powerful composition of four square-based pillars made of hewn stone, narrowing sharply at their summits, on which four forged iron swords pierce the sky. This monument, with its puritan simplicity, stands resolutely atop the hill, as if imbued with the spiritual triumph of the victor, yet permeated with sorrow for the precious blood shed here.[39]

They also added that the fact that the cemetery was the burial place of 10 officers and 265 enlisted soldiers from the 1st Royal Prussian Guard Regiment was "the reason for the German side to express the desire to erect a monument in

37 ANK, WUONGW, GW 11, p. 1187–1188: Hermann Hosaeus to KGA-Krakau, Berlin, 11 July 1917.

38 ANK, WUONGW, GW 11, p. 1188–90: KGA-Krakaku to Schlachtfelfaufräumungsabteilung IV in Ciężkowice, 31 July 1917.

39 Broch and Hauptmann, *Die Westgalizischen Heldengräber*, p. 167.

this place by an artist from the Reich".[40] It is also known that Hosaeus himself visited the war cemetery to see the effect of this work. During his visit, a decision was made to expand the cemetery, making it even more monumental and harmonizing it with the landscape.[41] In fact, the completion of this monument was not achieved until the end of the war and the fall of the empires. The work was eventually finished during the interwar period by the Polish authorities.[42] In this monumental way, the project of creating a landscape of remembrance for the fallen soldiers in former western Galicia remained not only the work of artists from the Habsburg Empire but also with the contribution of German artists. The entire monument has a highly imposing character—the metal swords crowning the pillars vertically point towards the sky, not without reason. In addition to the deep symbolism associated with warriors, the sky is an integral part of this monument's design. Standing in the middle of the four pillars, the shape of a cross is formed against the sky.

Another, smaller, example of the inclusion of work by German artists is an alternative design for a monument at cemetery no. 80 in Sękowa by Professor Bernhard Bleeker—a well-known representative of the Munich School of Sculpture, renowned after the war for his work *Toter Krieger* (Dead Warrior) located in the crypt of the war memorial in the Munich Hofgarten.[43] This project envisioned a 6.5-metre-high obelisk crowned with a 1.2-metre cross and was executed on 20 October 1917 in Przemyśl. It was meant to replace the cross that was originally erected on the middle terrace as part of Hans Mayr's previously discussed design. A report from January 1918 on the construction of war cemeteries in Galicia clearly indicated that the reconstruction of the monument at cemetery no. 80, according to Professor Bleeker's plan, would be carried out in the near future.[44] However, this intention was not realized and Mayr's cross remained as an architectural element of the cemetery.

40 Broch and Hauptmann, *Die Westgalizischen Heldengräber*, p. 167.

41 Broch and Hauptmann, *Die Westgalizischen Heldengräber*, p. 167.

42 ANK, WUONGW, GW 25, p. 52: undated inventory of the work on military cemeteries in former Galicia from early interwar period.

43 The project of this unrealized 6.3 m obelisk, topped by a 1.2 m cross by Bernhard Bleeker can be found here: ANK, GW 41, pp. 857, 861: project signed by Bernhard Bleeker and dated to 20 October 1917 in Przemyśl. Bleeker served as an artistic advisor for military cemeteries at the Inspectorate of Soldier Graves in Przemyśl, delegated by the Bavarian Ministry of War. See Jan Schubert, *Inspekcja grobów żołnierskich w Przemyślu. Powstanie I działalność w Galicji Środkowej 1915–1918* [War graves inspection in Przemyśl. The establishing and activities in Central Galicia 1915–1918] (Kraków: Oficyna Wydawnicza AFM 2012), p. 81.

44 ANK, WUONGW, GW 15, p. 65: construction programme for military cemeteries in 1918, prepared in KGA-Kraków on 9 January 1918.

As a result of the entire debate about the Gorlice 1915 monument of glory, a war cemetery in Gorlice was ultimately created, which dominates the town. However, in light of all the planned artistic solutions, it appears particularly modest in relation to the success and breakthrough on the Eastern Front that took place there in May 1915. None of the discussed alternative ideas, whether it be the creation of a war monument in Sękowa or on Cemetery Hill in Gorlice as part of the war cemetery, or a separate design, was realized. The special unit responsible for this task, namely the 12th Battlefield Clearing Command, led by Max Glogar, was dismissed on 10 December 1916. All further work related to the completion of approved war cemetery projects and ongoing matters concerning war graves in Gorlice and the surrounding area was taken over by the 3rd Battlefield Clearing Command in Sękowa.[45] The debate over the Gorlice monument of glory did not reappear in the correspondence of KGA-Krakau or the Ministry of War. Nevertheless, all of this remained on paper in the form of drawings, and designs stayed as a lasting expression of the author's ambition and the significance of the Gorlice–Tarnów campaign for the creators of war memorials and cemeteries, reflecting the idea of creating a landscape of worship for fallen soldiers. Without a shadow of a doubt, even in its reduced form (i.e. without a chapel but with a monumental memorial cross), the entire cemetery layout, forming the composition of a war memorial, remains a distinctive element of the cultural landscape, thus fulfilling the intentions of the creators of this cemetery and its monuments.

5 Conclusion: the Monument and Soldier's Grave as a New Element of the Cultural Landscape

The establishment of the war cemetery complex by the architects of KGA-Krakau represented a substantial undertaking with both humanitarian and propagandistic objectives. Through their design, the architects achieved a profound transformation of a landscape scarred by war violence and death into one of reverence for fallen soldiers and glory. These structures stood in stark contrast to the war ruins, degraded agricultural fields, and deteriorated infrastructure. Nevertheless, they seamlessly integrated themselves into the Galician landscape, even beyond the dissolution of empires, without facing significant scrutiny. The war memorials were a manifestation of the architects' ambitions, allowing them to manifest their artistic prowess. While the use of

45 On liquidation of the unit, see ANK, WUONW, GW 7, p. 578: documentation of KGA-Krakau, 3 December 1916.

vernacular architecture was rare, they drew upon pre-war experiences, influenced by prevailing trends in war memorial construction and the opportunities presented by the war itself. Notably, a vertical perspective predominated in the design of major architectural accents, while a horizontal perspective was evident in the arrangement of burial fields, which were adorned with crosses or architectural elements that ascended upwards.

The war monuments and cemeteries served as deliberate messages, symbolizing honour for the fallen, the military, and the emperors (firstly Austrian, then after intervention also German). This sentiment was also reflected in German military circles, which sought to ensure their involvement was not marginalized within this grand project, as evidenced by the debate surrounding the Gorlice monument, which even engaged the German emperor personally. Beyond the imperial framework, this project also revealed another significant aspect: following the trends of the 19th and early 20th centuries in Western Europe, attention was paid here to the fact that these places served as sites of mourning and commemoration not only for the state (empires) but also as places of private mourning and remembrance for individual deceased, at least those who could be identified. In the face of the massive scale of death brought by the war, the organization of war cemeteries, exemplified by western Galicia, along with a record of the buried, individualized military death by placing individual tombstones with memorial plaques or, in the case of mass graves, listing the established names of registered fallen soldiers (with the exception of Russian soldiers, in which case it is very apparent that identification by name was challenging). All creators of war cemeteries thus adhered to the principle of equality – in this case, equality of the fallen in the face of death and paying homage not only to imperial armies but also to individual beings consumed by the flames of war. Moreover, the creation of the complex conveyed significant ideological messages, communicated through inscriptions promoting egalitarianism in the face of death, humanitarianism, and providing a narrative of the events that unfolded on the battlefields of western Galicia. In a quest for individualization, the project's creators emphasized meticulous exhumation efforts and the installation of commemorative plaques on individual and mass graves, contrary to the prevailing sense of mass mobilization and mass casualties on the battlefield.

Nonetheless, these structures, from the moment of their creation, sparked a certain antagonism in Galicia, as the population residing there or returning to their ruined homes took notice of the grandeur with which they were built during the war. This led to a conflict between two landscapes: the one created to establish a landscape of glory, remembrance, and the cult of the fallen, and the landscape of a destroyed Galicia. Likewise, there was some critical debate

about the created objects in artistic and intellectual circles, but exploration of this is not within the scope of this chapter.[46]

These war monuments and cemeteries represent a noteworthy contribution to the field of war memorial art, signifying a substantial human intervention within the cultural landscape. They stand as testaments to human craftsmanship and intellectual design, conceived, constructed, and dedicated to both the deceased (the fallen soldiers) and the living (for commemorative purposes).

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46 See: Kamil Ruszała, "Zachodniogalicyjskie cmentarze z okresu I wojny światowej: niejednoznaczne dziedzictwo w nowych przestrzeniach politycznych" [Western Galicia's cemeteries from the First World War: An ambiguous heritage in new political spaces], *Wiadomości Konserwatorskie = Journal of Heritage Conservation*, no. 70, 2022, pp. 131–45. There, you can also find additional literature on the subject.

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CHAPTER 13

First World War Memorialization in Ukrainian Lands (Late 1910s to 1930s)

Hanna Bazhenova

At the outset of the First World War, the Ukrainian nation was divided between the Austro-Hungarian and Russian Empires. Eastern Galicia and northern Bukovina belonged to the Austrian part, and Zakarpattia—also known as Transcarpathia—to the Hungarian part of the Habsburg Monarchy. Other Ukrainian lands were incorporated within the Romanov Empire. As a result, from the very beginning of hostilities, Galicia, Volhynia, Bukovina, Zakarpattia, and to a lesser extent central Ukraine, constituted one of the main military theatres in Eastern Europe, and Ukrainians were forced to fight in a fratricidal confrontation on different sides of the barricades, serving in opposing armies. These territories became both the front and the rear in the Great War, witnessing some of the most bloody events: the battle of Galicia of 1914, the Gorlice-Tarnów offensive of 1915 by Austro-Hungarian and German armies, the Brusilov offensive of 1916 by the Russian army, and others. (Figure 13.1)

About 3.5–4.5 million citizens living in what is now Ukraine (out of 15.4 million conscripted by the Romanov Empire) were mobilized into the Russian army. Additionally, approximately 300,000 soldiers from West Ukrainian lands, out of 7,8 million conscripted by the Habsburg Monarchy, were drafted into the Austro-Hungarian army.[1] Around one million of them were killed or died of wounds, gas attacks, or diseases, or in captivity, and their graves were scattered around Europe—in Austria, Belarus, Germany, Poland, Romania, Russia, Serbia, Slovakia, Ukraine, and other countries.[2]

1 Oleksandr Reient, "Ukraïna v Pershii svitovii viini: suchasni naukovo-metodychni aktsenty" [Ukraine in the First World War: Modern scientific-methodological accents], in *Problemy istoriï Ukraïny: fakty, sudzhennia, poshuky: mizhvidomchyi zbirnyk naukovykh prats* [Issues of the history of Ukraine: Facts, judgements, searches: An interdepartmental collection of academic works] 16, no. 1, ed. Velerii Smolii (Kyiv: Institute of History of Ukraine of the National Academy of Sciences of Ukraine (NASU), 2007), 88–91.

2 Oksana Pelenska, "Persha svitova viina. Zahybli ukraintsi, ale nichyini pamiatnyky" [The First World War. Dead Ukrainians, but no-man's monuments], *Radio Svoboda*, August 1, 2014, https://www.radiosvoboda.org/a/25478269.html.

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FIGURE 13.1 Map of East-Central Europe in 1910. Map created by Ievgeniia Kuzmenko

War and military landscapes, as well as the political and social dynamics of memoryscapes, have become important issues of debate and research in recent decades. The discussions of the First World War landscapes were dominated by studies focusing on history, geography, archaeology, and the military.[3] However, as Nicholas J. Saunders noted in 2013, there are also some significant aspects to be considered through the anthropological perspective. At the very least, this approach offers "the opportunity to investigate: a) a conflict hitherto known mainly from historical sources, b) the reconstitution of post-war landscapes, and c) the evolution of commemorative materialities, both large and small (i.e.

3 See Rachel Woodward, "Military Landscapes: Agendas and Approaches for Future Research," *Progress in Human Geography* 38, no. 1 (2014): 40–61; Oksana Nagornaia and Kerstin von Lingen, "Conflict Landscapes of the Great War: The Spatial and Ecological Dimension of Military History," *Quaestio Rossica* 11, no. 2 (2023): 571–85.

large monument to small personal souvenir)."[4] In his earlier work, Saunders suggested exploring the Great War fronts not just as "a series of battlefields, but as a palimpsest of overlapping, multi-vocal landscapes".[5] In line with discussions on landscape perception in anthropology and the concept of layered landscapes, this article considers war and military landscapes as a dynamic compound process that affects memories, politics, and commemorative practices.

The article examines the formation of the First World War memorial landscape in Ukrainian lands during the wartime and inter-war periods, establishing the role of state and non-state actors in this process. A particular emphasis is placed on the architectural heritage of the war, specifically military cemeteries, burials, and memorials, which are treated not only as places of memory but also as sites of identity.[6] Moreover, the article analyses the symbolic and physical changes that these material sites underwent as part of memoryscapes of the countries that emerged after the dissolution of the Russian and Austro-Hungarian Empires. Following the Great War and Polish-Ukrainian (1918–19) and Polish-Soviet (1919–21) Wars, the territories of Zakarpattia, northern Bukovina, Volhynia, and eastern Galicia were transferred to Czechoslovakia, Romania, and Poland. The central, eastern, and southern parts of the Ukrainian lands, after the declaration of independent statehood by the Ukrainian People's Republic in January 1918 and the lost fight for independence, in 1921 were incorporated into Soviet Russia and Ukraine according to the Peace of Riga.

This research is based on an examination of the study of the documented history and photographs of First World War military cemeteries, burial sites, monuments, and memorials, including examples of military memorial church architecture. The primary sources used in the article also include memoires and documents of political, state, and non-state actors concerning the preservation of the Great War memorial landscape during and after the world conflict.

1 Perpetuating the Memory of Fallen Soldiers during the War

Already in the first months of the war, Russian society realized the scale of the conflict, calling it the "Great War", "People's War", and "Second Fatherland War".

4 Nicholas J. Saunders, "Anthropology and Archaeology of the First World War," *Cadernos do CEOM* 26, no. 38 (2013): 20.

5 Nicholas J. Saunders, "Matter and Memory in the Landscapes of Conflict: The Western Front 1914–1999," in *Contested Landscapes: Movement, Exile and Place*, eds. Barbara Bender and Margot Winer (Oxford: Berg, 2001), 37.

6 See Hanna Smyth, "Monuments in Stone and Colour," in *Memory*, eds. Philippe Tortell, Mark Turin, and Margot Young (Vancouver, BC: Peter Wall Institute for Advanced Studies, 2018), 181–87.

In September 1914, the Alexander Committee for the Wounded[7] made a proposal to establish special military burial grounds throughout the country and to install monuments, stone pillars, chapels, crosses, commemorative plaques, and other memorials.[8] This initiative was important due to the fact that many wounded soldiers were sent to the rear regions, where some of them died of severe injuries. At the same time, most of the lower ranks who were killed in battle and succumbed to wounds not far from the front line were buried in close proximity to the battlefields—in mass and individual graves. However, according to contemporary accounts, the authorities—primarily the military administration—did not pay sufficient attention to the arrangement of front-line burials.[9] They usually limited themselves to the installation of a sizeable Orthodox wooden cross, while monuments constructed from stone or brick were rare.

One of the few monuments to Russian soldiers in the front-line zone was erected in the summer of 1916 in the village of Osovtsy near the town of Buchach in Galicia. The life-size figure of a soldier going into attack with a fixed bayonet was presumably made of plaster or concrete. The inscription on the pedestal of the 3-metre-high monument stated: "To the victorious Russian soldier crowned with glory by Czech volunteers in memory of the battles of the 41st Infantry Division on the Strypa River on 26–28 May 1916". One could assume that the creation of the monument and its financing was a private initiative. However, it was most likely destroyed in 1918 by the returning Austro-Hungarian administration, which considered the Czechs who built the monument to be traitors.[10]

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7 The Alexander Committee for the Wounded was a Russian charitable institution to provide assistance to disabled servicemen and the families of those who perished or died of wounds. This committee functioned from 1814 to 1918, as a part of the Ministry of War from December 1909.

8 Anna Koszowy, Anna Wicka, and Tadeusz Krząstek, *Graves and Cemeteries of Russian and Soviet Soldiers from the 19th and 20th Centuries in Poland: Selected Examples*, ed. Adam Siwek (Warsaw: Centre for East European Studies, University of Warsaw, 2016), 18.

9 Nikolai V. Rodin, "Liudi i voina: sotsialnye posledstviia boevykh deistvii i usiliia vlasti po ikh preodoleniiu (1914–1917)" [People and war: Social consequences of warfare and the authorities' efforts to overcome them (1914–1917)], in *Pervaia mirovaia voina i konets Rossiiskoi imperii* [The First World War and the end of the Russian Empire], 3 vols., vol. 1: *Politicheskaia istoriia* [Political history], eds. Igor V. Lukoianov et al. (Saint-Petersburg: Liki Rossii, 2014), 737–39.

10 Kirill G. Sokol, "Vostochnyi front Pervoi mirovoi voiny: otnoshenie k starym pamiatnikam i poiavlenie novykh" [The Eastern Front of the First World War: The treatment of old monuments and the emergence of new ones], in *Problemy sokhraneniia pamiati i memorializatsii naslediia Pervoi mirovoi voiny* [Problems of preserving the memory and memorializing the legacy of the First World War], ed. Sergei A. Mozgovoi (Moscow: Heritage Institute, 2019), 74–75.

The losses of the Russian army were so great that the question arose at the national level of creating special cemeteries in cities or allocating separate plots in existing necropolises for the burial of soldiers who fell on the fields of war and those who died in hospitals and infirmaries. The activity on the establishment of such memorial cemeteries was entrusted to the All-Russian Society for the Memory of Soldiers of the Russian Army Who Fell in the War of 1914–1915 with Germany, Austria and Turkey which operated in Petrograd from 23 April 1915. Its aim was to contribute by all ways and means to the protection of the graves of Russian soldiers on the battlefields, regardless of their religion and nationality and to preserve their memory for the future. The tasks of the society included searching for graves; determining, if possible, the names, surnames, military units, time of death, religion, nationality of the buried; improvement of mass and individual graves; and installation of crosses, monuments, memorial signs, fences, etc. The society was allowed to move graves with remains if they were buried in an improper place, to assist in transporting the ashes to the homeland, and to help relatives of the deceased in finding graves and determining the day of their death based on the time of the battles.[11]

On 15 November 1915, on the initiative of this organization, the Imperial Society of Architects and Artists announced a competition for the design of temples, chapels, and tombstones to be installed at battlefields, military cemeteries, and mass and single graves. The competition results were finalized in June 1916, but due to revolutionary events and the civil war, only a small part of the planned projects was completed.[12] As the society's efforts to search for and improve war graves on battlefields proved extremely difficult, and often even impossible, its members decided to concentrate on the rear areas.

At that time, Kyiv became the main rear centre and the largest hospital centre of the South-Western Front. Many soldiers and officers succumbed to wounds, and the problem of burying them became quite acute. The establishment of the Kyiv Fraternal Cemetery occurred in 1915 in Zvirynets, one of the city's historic areas. The cemetery was located on a hill which was shaped by terracing into a triangular pyramid and resembled a bastion. The terraces of this "pyramid" hosted military burials: the areas nearest to the top were intended for officers' graves, the more distant ones for the burial of lower ranks, and the

11 *Ustav Vserossiiskogo obshchestva pamiati voinov russkoi armii, pavshykh v voinu 1914–1915 godov s Germaniei, Avstriei i Turtsiei* [Statute of the All-Russian Society for the Memory of Soldiers of the Russian Army Who Fell in the War of 1914–1915 with Germany, Austria and Turkey] (Petrograd, 1915).

12 Mariia Katagoshchina, "Pamiatniki Velikoi voiny (Okonchanie)" [Monuments of the Great War (Ending)], *Voennaia byl*, no. 4 (1993): 21.

areas outside the surrounding fence for the graves of soldiers of non-Christian religions. The St Nicholas the Miracle Worker Memorial Church was built on the upper terrace, in the centre of the cemetery. This sacred building, designed by architects Petro Fetisov and Valerian Rykov in the neo-Russian style and the foundation stone laid on 12 June 1916, was intended to commemorate the soldiers and officers who perished during the Great War. Thanks to the collaborative endeavours of both the military and civilians, the church's walls and floors were erected swiftly. However, because of a lack of funds and construction materials, and the revolutionary upheavals of the time and the civil war, the building could only be finished with a simple hemispherical cupola instead of the originally intended hipped roof. The memorial church in the Fraternal Cemetery survived a powerful explosion of ammunition in Zvirynets on 6 June 1918 and the Soviet-era mass destruction of churches. There was a plan to set up a crematorium in the church before the Second World War, but it failed to materialize. Subsequently, in the 1950s, the church, along with the adjacent territory of the Fraternal Cemetery of 2.5 hectares, came under the ownership of the Academy of Sciences of the Ukrainian Soviet Socialist Republic, which repurposed the structure for its practical needs.[13] Consequently, the burial sites at the cemetery were destroyed.

Another noteworthy example of church architecture dedicated to the memory of soldiers who perished on the First World War front lines was St George's Church in Cherkasy. In 1916, on the initiative of the Cherkasy city government, a public committee for the construction of an Orthodox church in honour of the fallen soldiers was established, headed by Mark S. Kulish, the chairman of the city council. The committee's activities gained momentum after the February Revolution of 1917. St George's Church, erected at the expense of Cherkasy residents within the precincts of the St Nicholas Cathedral Cemetery, was solemnly consecrated on 7 October 1917. However, in 1933 it was permanently closed and looted.[14]

As for the situation within the Habsburg Monarchy, on 18 March 1915 the Rear High Command (Etappen-Oberkommando) issued a decree addressing matters

13 Iryna Abramova, "Khram-pamiatnyk na Zviryntsi" [Memorial church at Zvirynets], *Vidlunnia vikiv*, no. 1 (2009): 26–30; Viktor Hrinchenko, "Uvichnennia pamiati polehlykh u Pershii svitovii viini v rosiiskii tserkovnii arkhitekturi" [Perpetuating the memory of the fallen in the First World War in Russian church architecture], *Naukovi zapysky* [Kirovohrad Volodymyr Vynnychenko State Pedagogical University], series: *Historical Sciences* 19 (2014): 104–5; *Kyïv: Providnyk* [Kyiv: Guide], ed. Fedor Ernst (Kyiv, 1930), 706; Mariia Katagoshchina, "Pamiatniki Velikoi voiny" [Monuments of the Great War], *Voennaia byl*, no. 3 (1993): 16–17.

14 Hrinchenko, "Uvichnennia pamiati polehlykh," 105.

of military burials, interment procedures for fallen soldiers, selection of burial sites, and their subsequent care. This directive applied to the entire state, excluding temporarily seized or occupied territories which faced similar challenges regarding burials, records, and cemeteries. A further development took place on 3 December 1915, when the Austrian Ministry of War established the Department of War Graves (Kriegsgräber Abteilung, KGA), which from July 1917 functioned as the Department of Losses. Thus, there appeared a unit within the Austro-Hungarian army that was fully responsible for the entire process related to the interment of soldiers of its own, allied, and enemy armies. The primary responsibilities of this unit also included cataloguing the fallen soldiers and designing, establishing, appropriately adorning, and maintaining the war cemeteries. These tasks extended across the locations where the Austro-Hungarian army engaged in battle, encompassing Serbia, the eastern Carpathians, Galicia, Volhynia, the Italian Dolomites, and the area near the Piave River.[15] It is notable that during the establishment of the cemeteries, the remains of enemy soldiers were treated the same as those of their own or allied soldiers. Therefore, the graves of the Austro-Hungarian, German, and Russian armies' soldiers were arranged next to each other within one cemetery.[16] However, all of this work was interrupted by the disintegration of the Dual Monarchy as a consequence of the Great War.

2 Institutionalization of Memory in the Inter-War Period

2.1 *The Ukrainian State and the Soviet Union*

On 9 February 1918, the Central Powers of Germany, Austria-Hungary, the Ottoman Empire, and Bulgaria, and the newly formed independent Ukrainian People's Republic (UPR) signed the Peace Treaty of Brest-Litovsk (currently Brest, Belarus). In Article 17 of the supplementary agreement to this treaty, the parties undertook to respect and maintain the cemeteries of soldiers and civilians of the other party who died or were killed during the war on their territory.[17]

15 Jan Schubert, "Organizacja grobownictwa wojennego w Monarchii Austro-Węgierskiej. Dziewiąty Wydział Grobów Wojennych (*Kriegsgräber-Abteilung*) przy Ministerstwie Wojny—powstanie i działalność w latach 1915–1918" [Organization of war graves in the Austro-Hungarian Monarchy. The Ninth Department of War Graves (Kriegsgräber-Abteilung) under the Ministry of War—Establishment and activities 1915–1918], *Czasopismo Techniczne. Architektura* 13, no. 3-A (2009): 174–78.

16 Ewa Żaboklicka, "Opieka państwa nad cmentarzami wojennymi" [State care of war cemeteries], *Prystanek Historia*, November 1, 2023, https://przystanekhistoria.pl/pa2/teksty/53293,Opieka-panstwa-nad-cmentarzami-wojennymi.html.

17 *Hramota Hetmana Vsiieï Ukraïny vydana na pidstavi ukhvaly Rady Ministriv pro ratyfikatsiiu Myrovoho Dohovoru Ukraïny z Nimechchynoiu* [The charter of the hetman of all

A separate Peace Treaty of Brest-Litovsk, which formally ended Russia's involvement in the war, was signed between the Central Powers and Soviet Russia on 3 March 1918. Article 20 of the supplementary agreement to this document stated that the parties were obligated to honour and to maintain the graves located on their territory of military and civilians of the opposing sides, who were killed or died in the war.[18] Similar provisions were also enshrined in Articles 225 and 226 of the Treaty of Versailles (28 June 1919) and in Articles 171 and 172 of the Treaty of Saint-Germain (10 September 1919).[19]

The first attempts to memorialize the deceased took place during the period of the Ukrainian State that existed from 29 April to 14 December 1918. On 2 July, the representatives of the newly established Kyiv public organization "The Memory of Soldiers 1914–1918" addressed the hetman Pavlo Skoropadskyi with a proposal to perpetuate the memory of those who had perished in the First World War. The head of the society stressed the need to thoroughly explore the areas of military operations both in Ukraine and in the territories of neighbouring countries. The letter sent to the Council of Ministers of the Ukrainian State specified the scope of these works. Plans included visiting war graves and cemeteries, restoring them to the proper condition, compiling lists of surviving inscriptions on crosses, and placing the names of the fallen on separate boards near Orthodox churches that were intended to become sites of memory. Additionally, the society aimed to fulfil requests from relatives to locate the burial sites of the deceased and to restore the appearance of nearby churches. The members of the society also intended to prepare and publish catalogues containing accurate information about the location of graves, the number of dead, and their names, as well as descriptions of the grave sites. These catalogues were to be accompanied by cartographic materials and photographs to aid in identifying the places of burial. Similar organizations also emerged in other cities and towns, but their activities ceased after the establishment of Soviet rule.[20]

Ukraine issued on the basis of the Council of Ministers' resolution on the ratification of the peace treaty between Ukraine and Germany] (Kyiv: Derzhavnyi Visnyk, 1918), 27.

18 "Foreign Relations of the United States: 1918. The Conclusion of the Peace of Brest Litovsk. The Consul General at Moscow (Summers) to the Secretary of State," *Yale Law School, Lillian Goldman Law Library in memory of Sol Goldman, The Avalon Project: Documents in Law, History and Diplomacy*, accessed July 25, 2023, http://avalon.law.yale.edu/20th_century/bl34.asp.

19 "The Versailles Treaty June 28, 1919," *Yale Law School, Lillian Goldman Law Library in memory of Sol Goldman, The Avalon Project: Documents in Law, History and Diplomacy*, accessed July 25, 2023, https://avalon.law.yale.edu/subject_menus/versailles_menu.asp; "Treaty of St Germain (Treaty of Peace between the Allied and Associated Powers and Austria)," [September 10, 1919], *Dipublico.org*, October 22, 2010, https://www.dipublico.org/100758/treaty-of-st-germain-treaty-of-peace-between-the-allied-and-associated-powers-and-austria/.

20 Hanna Bazhenova, "Representations of the First World War in the Politics of Memory in Russia and Ukraine," *Problems of Post-Communism* 68, no. 5 (2021): 370; Olena A. Denysenko,

Professors of Novorossiysk University who were members of the Odesa Society of History and Antiquities also initiated the creation of a public organization for commemorating the events of the First World War. On 24 October 1918, they founded a public committee whose goal was to identify memorial sites and build a church honouring the soldiers who had lost their lives in naval battles on the Black Sea during the war. The committee had commenced collecting funds for the construction project, but the further course of political developments in the country hindered the realization of these plans.[21]

The Bolshevik authorities revoked the 1918 Peace Treaty of Brest-Litovsk and disregarded international agreements and arrangements made in Versailles. Consequently, the memorialization campaign that swept through Western European countries right after the Great War had no impact on the Soviet Union. The revolution of 1917 and the ensuing civil war relegated the memory of the world conflict to the background.[22] The majority of military cemeteries in the Ukrainian Soviet Socialist Republic, including Kyiv Fraternal Cemetery, along with memorials for fallen soldiers have been left abandoned or demolished, while the remaining ones have gradually succumbed to decay. The destruction of these monuments was motivated primarily by ideological considerations. To Vladimir Lenin and the Bolsheviks, the First World War had been an "imperialist" undertaking and thus, it was to be condemned and then consigned to oblivion.[23] Following the Second World War, the Great War was nearly entirely forgotten and erased from the Soviet public discourse, virtually devoid of events and heroes to be commemorated.

2.2 *The First Czechoslovak Republic*

From the autumn of 1914 to the spring of 1915 and in the summer of 1916 (the successful Brusilov offensive of the Russian army),[24] fierce battles between Russian and Austro-Hungarian forces took place in Zakarpattia. Then the front

"Z istorii okhorony pamiatok istorii ta kultury v Ukraïnskii Derzhavi v 1918 r." [From the history of the protection of historical and cultural monuments in the Ukrainian State in 1918], *Viiskovo-istorychnyi merydian: Elektronnyi naukovyi fakhovyi zhurnal* 4 (18) (2017): 47.

21 Denysenko, "Z istorii okhorony pamiatok istorii," 48.

22 See Karen Petrone, *The Great War in Russian Memory* (Bloomington: Indiana University Press, 2011).

23 Nataliya Danilova, *The Politics of War Commemoration in the UK and Russia* (Basingstoke, New York: Palgrave Macmillan, 2015), 148–49; Karen Petrone, "'Now Russia Returns Its History to Itself': Russia Celebrates the Centenary of the First World War," in *Remembering the First World War*, ed. Bart Ziino (Abingdon, New York: Routledge, 2015), 130.

24 The Brusilov offensive was an offensive operation of the South-Western Front of the Russian army against Austro-Hungarian and German troops during the Great War. It was carried out by four Russian armies under the command of cavalry general Aleksei Brusilov from 4 June to 20 September 1916 on the front from Lutsk to Chernivtsi. During

entered the phase of positional trench warfare and in July 1917, after a breakthrough by the German army near Ternopil, the Russian troops were compelled to finally retreat to the east. The war in the Carpathians, resulting in a great many casualties and military burials, came to an end.

The largest two war cemeteries in the region were in Uzhhorod (formerly Ungvár), which became a front-line town for several months in 1914 and 1915. One of them appeared on the territory of the garrison cemetery that had been in operation since the late 19th century to bury soldiers of the Austro-Hungarian army. It was situated on the northern outskirts of the city which is now in Shakhta microdistrict. Around 1,000 soldiers of different nationalities who died in Uzhhorod military hospitals during the world conflict were buried in this cemetery in mass and individual graves. After the First World War, it continued to function as a garrison cemetery.

Another military cemetery, adjacent to the railway station, became the final resting place for approximately 10,000 officers and soldiers of different nationalities and religions from 19 European countries, with 7,000 remaining unidentified. The majority of the dead were mobilized from the territories that are now parts of Romania, Hungary, Slovakia, the Czech Republic, and western Ukraine (including Zakarpattia). Additionally, the cemetery held graves of Russian army soldiers who were transported to the nearby hospital as prisoners of war. Mass burials took place directly from the station platform and even the carriages of sanitary trains. To facilitate this sombre task, extensive mass graves were dug near the railway tracks.[25] Large wooden crosses with triangular tops and information plaques were installed on the these graves. In the southern part of the cemetery, there appeared 12 rows of individual graves, predominantly of officers, each adorned with a wooden cross carrying a plaque with the officer's or soldier's name and date of death. Adjacent to these rows, a Jewish military cemetery housed traditional Jewish flat headstones. Furthermore, there were Muslim graves, distinguished by wooden flat headstones, where soldiers from Bosnia and Herzegovina found their final resting place. A large

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this operation, Russian troops occupied almost all Volhynia, Bukovina, and part of Galicia with the cities of Lutsk, Chernivtsi, and Stanislav (currently Ivano-Frankivsk).

25 Iurii Fatula, *"Nesi mamtsi zhalist moiu ..." Zakarpattsi u Pershii svitovii viini* ["Bring my mother my pity ..." Transcarpathians in the First World War], intr. Mykola Vehesh (Uzhhorod: TDV "Patent", 2018), 149–51; Iaroslav Halas, "Buldozerom po mohylakh: Dramatychna istoriia viiskovykh pokhovan Pershoï svitovoï viiny na Zakarpatti" [Bulldozing graves: A dramatic history of the First World War burials in Zakarpattia], *Depo.ua*, August 14, 2021, https://zak.depo.ua/ukr/zak/buldozerom-po-mogilakh-dramatichna-istoriya-viyskovikh-pokhovan-pershoi-svitovoi-viyni-na-zakarpatti-20210814135680o.

concrete cross on a stone base, visible from afar, was erected in the very centre of the cemetery. After the war, no further burials took place at this location.[26]

Following the collapse of the Habsburg Monarchy, Zakarpattia became part of the First Czechoslovak Republic. In the 1920s and 1930s, there developed a movement consisting of various public and official organizations which aimed to perpetuate the memory of the Great War. The authorities treated the memorialization of fallen soldiers with respect, regardless of which side they fought on. During that period, Zakarpattia had around 60 well-maintained war burials. After the war, the scattered graves were transformed into memorials, with a significant number featuring pyramid-shaped monuments. One of these pyramids appeared on the Uzhok Pass, where a series of intense battles were waged from the autumn of 1914 until May 1915, as opposing forces sought control over the strategic Uzhok mountain pass. The Russian command laid a military cemetery on this pass in the autumn of 1914. After the end of the war, the Czechoslovak authorities moved the bodies of the dead from the nearby outskirts and improved the cemetery by building a sandstone pyramid with memorial plaques in Russian, Czech, and Hungarian. These plaques stated that six Russian and six Austro-Hungarian officers and 351 soldiers of the Russian and Austro-Hungarian armies rested in eternal sleep in the cemetery. The inauguration of the monument took place on 28 September 1934, which was the 20th anniversary of the beginning of the battles for the Uzhok Pass.[27]

A similar limestone pyramid appeared in Uzhhorod, which was the administrative centre of the autonomous region of Subcarpathian Rus, to mark the 20th anniversary of the end of hostilities. The unveiling of the monument was apparently scheduled for 11 November 1938. However, the already constructed memorial honouring the First World War victims never saw its intended inauguration due to the lengthy internal political crisis in the country which ultimately led to the partition of Czechoslovakia.[28] According to the decision of the Vienna Arbitration of 2 November 1938, part of Zakarpattia, including the cities of Uzhhorod, Mukachevo, and Berehove, was transferred to Hungary.

The construction of the Intercession Orthodox Church in memory of those who lost their lives in the war on the left bank of the Uzh River stands as

26 Fatula, *"Nesi mamtsi zhalist moiu,"* 151.

27 "Zakarpate v pervoi mirovoi voine: Kak eto bylo (FOTO)" [Transcarpathia in the First World War: How it was (PHOTO)], *UA-Reporter.com*, July 28, 2020, https://ua-reporter.com/news/zakarpate-v-pervoy-mirovoy-voyne-kak-eto-bylo-foto; Petr Sova, "Narodnyi Akademik" [People's academician], *Za Russkoe Delo*, no. 2 (2016): 8.

28 "V Uzhhorodi zanepadaie pamiatnyk zhertvam Pershoï svitovoï viiny" [A monument to the victims of the First World War is falling into disrepair in Uzhhorod], *RIO*, July 18, 2014, http://rionews.com.ua/mixed/all/now/n1419815730.

another illustration of how Zakarpattia commemorated the global conflict. This memorial church, established in 1930 in Uzhhorod, held strong ties with Russian emigrants who settled in Zakarpattia after the war. Spearheading its construction was Archpriest Vsevolod Kolomatskii, a former war veteran from the Kyiv province. He personally designed the future church in collaboration with engineers Vladimir Talalaev and N. P. Leontiev, and architect Kirill Katkov, who came from Prague. The architectural project they created won first prize at the competition held by the Society of Russian Architects in Belgrade. The church, designed in a style reminiscent of late 19th-century Russian church architecture, incorporated techniques and elements of historicism to underscore the immutability of the Russian Orthodox Church, irrespective of historical circumstances. Adjacent to the church there lay the resting place of an unknown Russian soldier from the 8th Corps, a casualty of the 1915 battle for Mount Cheremkha (Uzhok Pass).[29]

Memorials honouring Ukrainian soldiers who participated in the Great War also emerged beyond the Subcarpathian Rus through the efforts of enthusiasts and public organizations. The most famous of them appeared in Jablonné v Podještědí, Brno, Liberec, and Terezín (until 1918 Theresienstadt). The monument in Jablonné v Podještědí, situated in northern Bohemia, was dedicated to the Ukrainian prisoners of war of the First World War and the fallen soldiers of the Mountain Brigade of the Ukrainian Galician Army (UGA),[30] i.e. the military formation of the short-lived West Ukrainian People's Republic (ZUNR; 1918–1919). The monument designed by Ukrainian sculptor and former UGA platoon commander Mykhailo Brynskyi was unveiled on 20 October 1921 funded by voluntary donations from Ukrainian emigrants at the local cemetery near the graveyard of Ukrainian and Russian prisoners of war from the Great War era. The focal point of the memorial featured a kobzar, an itinerant Ukrainian folk singer and musician, playing a bandura.[31] Positioned just above the kobzar's head, a carved trident graced the composition, accompanied by a quote extracted from the poem "To Osnovianenko" by the renowned Ukrainian poet Taras Shevchenko: "Glory will not fall! / Will not fall but will recount, / What

29 Liudmila P. Sakharova, "Na pole brani ubiennym…" ["To the slain on the battlefield…"], *Russkaia kultura Zakarpatia: almanakh* 8 (2015): 15–16; Andrii Ivchenko, "Pravoslavni khramy Ukraïny" [Orthodox churches of Ukraine], *Svitohliad*, no. 4 (2018): 10; Roman Ofitsynskyi, "Zakarpattia v Pershii svitovii viini" [Transcarpathia in the First World War], *RIO*, July 18, 2014, http://rionews.com.ua/newspaper/all/now/n1419815144.

30 The Ukrainian Galician Army was established in November to December 1918 around a nucleus consisting of the Legion of Ukrainian Sich Riflemen and Ukrainian veterans of other units of the former Austro-Hungarian army.

31 A *bandura* is a traditional Ukrainian musical instrument.

happened in the world: / Whose righteousness, whose wrongs / and whose children we are." Flanking the kobzar on both sides, half-columns showcased engraved battle crosses of the Ukrainian Sich Riflemen (a military unit of the Austro-Hungarian army) and the Ukrainian Galician Army. The upper part of the central column was crowned with a laurel wreath with a mace and an orb. On the monument's side, an inscription in Czech and German read "Ukrainians to their fallen brothers", while the reverse side of the monument bore the names of fallen soldiers.[32]

Another memorial at the burial site of 154 Ukrainian soldiers who fell during the First World War and the Polish-Ukrainian War was erected at Brno Central Cemetery (Moravia) by local Ukrainian public organizations, primarily the Ukrainian Academic Community, headed by Anton Bazar. The official unveiling and consecration of the monument took place on 1 November 1923, coinciding with the fifth anniversary of the establishment of the ZUNR by Galician Ukrainians. The memorial was built in the form of a vertical stele with a sculpture of a mourning woman at the top and two semi-columns on the left and right. Each half-column had trident carvings, and the bottom had inscriptions in Czech and Latin informing that the memorial was dedicated to the victims of the First World War and the Polish-Ukrainian War and was erected by the Ukrainian emigrants in Brno. In the central part of the memorial, in between the semi-columns, there was a marble plaque with the following inscription: "In eternal memory of 154 Sons of the Ukrainian Land who, as soldiers of the Austrian and Russian armies, fell victim to the World War of 1914–18 and the heroes of the Ukrainian Galician Army, fighters for the freedom and statehood of Ukraine in 1918–23, who, thrown out of their native home by Polish troops, laid their bones here".[33] While the exact information regarding the creator of the central monument of this memorial has not been preserved, there is a possibility that it was also crafted by Mykhailo Brynskyi.

32 Iurii Kliuchkivskyi, "Sakralnist ukraïnskykh pamiatok v Cheskii Respublitsi" [The sacredness of Ukrainian monuments in the Czech Republic], *Ukraïnskyi pohliad*, February 14, 2023, http://ukrpohliad.org/national-memory/sakralnist-ukrayinskyh-pam-yatok-v-cheskij-respublitsi.html; Oksana Pelenska, "Ukraïnski viiskovi memorialy na cheskykh zemliakh" [Ukrainian war memorials on Czech lands], *Radio Svoboda*, October 16, 2018, https://www.radiosvoboda.org/a/29545127.html.

33 Ievhen Perebyinis, "Memorial ukraïntsiam—uchasnykam Pershoï svitovoï viiny u Brno" [Memorial to Ukrainians who participated in the First World War in Brno], *Istorychna Pravda*, December 20, 2020, https://www.istpravda.com.ua/columns/2020/12/20/158700/; Nadiia Brailian, "Ukraïnski taborovi chasopysy u Chekhoslovatskii Respublitsi iak dzherelo do martyrolohu internovanykh ukraïntsiv (1919–1923 rr.)" [Ukrainian camp magazines in the Czechoslovak Republic as a source for the martyrology of interned Ukrainians (1919–1923)], *Zbirnyk prats* [Research Institute of Press Studies] 8 (26) (2018): 81–82.

On 5 June 1927, a sculptural composition on the burial site of 27 soldiers of the UGA Mountain Brigade was unveiled at the Ruprechtice Military Cemetery in Liberec (northern Bohemia). This memorial paid tribute to the soldiers of this army who had been interned in a camp in Liberec. Crafted by the renowned Ukrainian artist and sculptor Vasyl Kasiyan, the monument skilfully portrayed a fallen rifleman clad in the uniform of the Ukrainian Galician Army. Behind the figure of the soldier stood his wife and two young, apprehensive-looking children, wearing typical Ukrainian garments. The monument was set on a high pedestal with black marble tablets which had the following inscription engraved on them: "In eternal memory. To the fighters of the Ukrainian Galician Army for the freedom and good of their people, who were thrown out of their native home by the enemy and laid their bones here. 1918–1920".[34]

2.3 *The Kingdom of Romania*

During the First World War, northern Bukovina became a battleground between the armies of the Austro-Hungarian and Russian Empires. The population of this region endured three Russian occupations and faced repression from both the Austrian authorities—who suspected the locals of Russophilia—and by the Russian occupation authorities—who viewed them as hostile. Fallen soldiers were usually interred on the battlefields. The largest military cemetery of its kind in northern Bukovina, the international soldiers' cemetery, was established in May 1916 on the outskirts of the village of Zveniachyn, situated on the right bank of the Dniester River.

A significant number of war graves also appeared in Chernivtsi (formerly Czernowitz, the capital of the crown land of Bukovina) and on the outskirts of the city. The initial military burials of the wartime casualties in the cemetery on Zelena Street date back to 1914. On 13 August 1915, the Presidium of the Chernivtsi Provisional Town Council allocated a plot within the same cemetery for military interments. A competition was held to design a monument for the fallen soldiers, raising 30,000 crowns for the purpose. However, the Russian offensive of 1916 disrupted these plans, preventing the cemetery from reaching its intended final form. The cemetery became the resting place for 14,950 Austrian and German soldiers, along with a small number of Russian servicemen.[35]

34 "Bratska mohyla voïniv UHA" [The mass grave of the UGA soldiers], *Ukraïnskyi memorial*, accessed July 31, 2023, http://www.ukrmemorial.eu/czechia/liberec/ruprechtyce/bratska_mohyla_vojiniv_uha/; Oksana Pelenska, "Pamiatnyk ukraïnskym voiakam pislia restavratsii vidkryly v Chekhii" [The monument to Ukrainian soldiers was unveiled in the Czech Republic after restoration], *Radio Svoboda*, September 7, 2018, https://www.radiosvoboda.org/a/29477555.html.

35 Oksana Kravchuk and Ihor Piddubnyi, "Viiskovi pamiatnyky Chernivtsiv XX stolittia: kultura pamiati ta arkhitekturni rishennia (na vikend)" [Military monuments of the

In accordance with the terms of the Treaty of Saint-Germain, Bukovina was ceded to the Kingdom of Romania. Subsequently, the royal decree of 12 September 1919 established the Society "Tombs of the Heroes Fallen in War". This organization, which was under the patronage of Queen Maria and the presidency of the Prime Metropolitan of the Romanian Orthodox Church, mainly focused on coordinating and administrating the identification, delimitation, construction, and maintenance of the war graves and cemeteries. Through persistent work, the society established hundreds of cemeteries and monuments in the majority of localities across Romania. In 1927, the institution underwent a name change to the Society "Cult of the Heroes", and by 1940, it had evolved into the Queen Mary National Association "Cult of the Heroes". The society's structure encompassed regional, county, and local levels. It was intended that the heads of these committees would be commanders of military units at the regional level, local prefects at the county level, and at the local level, a military priest, a former combatant teacher, or a regular priest.[36]

The creation of the regional committee occurred in Chernivtsi on 10 May 1920. In the subsequent years, endeavours focused on establishing local society branches across the entire region. The improvement of the graves of soldiers who lost their lives in the First World War gained notable momentum in the latter half of the 1930s. The fallen were reinterred and mass graves were carefully arranged. During this period, the remains of 11,830 soldiers and officers of the Austro-Hungarian, German, and Russian armies were reburied at the aforementioned Zveniachyn military cemetery. In 1937, the cemetery underwent substantial expansion and completion: fifty stone crosses and four gravestones were erected, while a stone fence enclosed the 28-metre-diameter area. The plaques on the monument bore the names of the deceased and settlements.[37]

Another international soldiers' cemetery in northern Bukovina emerged in 1936 within the village of Valya Kuzmina, formerly known as Franzthal. This came about following the reburial of fallen servicemen from eight settlements. At the heart of the cemetery, a monument was raised to pay tribute to 3,785 soldiers hailing from the German, Austro-Hungarian, and Russian armies.[38]

20th century Chernivtsi: Culture of memory and architectural solutions (for the weekend)], *BukNews*, March 24, 2013, https://buknews.com.ua/page/viiskovi-pamiatnyky-chernivtsiv-hh-st-kultura-pamiati-ta-arkhitekturni-rishennia.html.

36 Silviu Hariton, "War Commemorations in Inter-War Romania" (PhD diss., Central European University, Budapest, 2015), 15–16, 299–300, 305.

37 "Kompleks mohyl Avstriiskym soldatam uchasnykam I Svitovoï viiny" [Complex of graves of Austrian soldiers who participated in the First World War], *Heritage*, accessed July 21, 2023, http://heritage-ua-ro.org/objects_view.php?id=CV242.

38 Halyna H. Denysenko, *Kulturna spadshchyna u formuvanni istorychnoï pamiati* [Cultural heritage in the formation of historical memory] (Kyiv: Institute of History of Ukraine of the NASU, 2018), 154.

In 1923, enhancements to the military burials in Chernivtsi took place. On 15 March, the remains of 1,050 unidentified soldiers from the city's outskirts underwent reburial in the Zelena Street cemetery. Stone and metal crosses appeared atop the mass graves. By 1924, the "Cemetery of Heroes" achieved its final appearance: it was demarcated from the rest of the cemetery by a hedge, and a central alley hosted a newly erected monument. Crowning the monument was a bronze urn. Depictions of eagles were affixed on both sides, while the front face of the plinth bore the inscription "To the Unknown Hero of 1914–1918". The unveiling of the monument took place on 12 November 1924. Altogether, more than 16,000 soldiers from the Austro-Hungarian, German, and Russian armies found their resting place within the Cemetery of Heroes. The territory of the Zelena Street cemetery also featured a mass grave of the Polish Legionnaires—a volunteer force within the Austro-Hungarian army during the First World War. In 1937, a monument with an inscription in Polish was erected on this site: "To the faithful sons of the Fatherland, sacrificial and heroic legionnaires who fell in the battle for the independence of Poland. Countrymen from Bukovina".[39]

The Cemetery of Heroes became a model for other localities to follow. For example, in the Jewish cemetery of Sokyriany, which hosted First World War burials, the remains of 13 soldiers from the Toporivtsi village cemetery were reinterred on 24 September 1925, as part of a reorganization effort. The subsequent year saw the installation of 80 stone tombstones, funded by the Jewish religious community. Additionally, there was a mass grave of more than 30 Muslim soldiers of the Russian army within the Jewish cemetery's premises. In 1939, a monument took shape on the site, designed as a tree trunk adorned with a crescent and a five-pointed star. An inscription in Romanian read: "To Muslim soldiers who fell in the World War of 1914–1918". The names of the interred soldiers were embossed on both sides of the trunk beneath the inscription. The monument received consecration in June 1940.[40]

2.4 *The Second Polish Republic*

Following the First World War, the Polish-Ukrainian and Polish-Soviet Wars, Poland incorporated the territories of eastern Galicia, Volhynia, and part of western Podolia, which were primarily inhabited by Ukrainians. The re-establishment of statehood heavily influenced the memory of the Great War in the Second Polish Republic, bringing to the forefront those soldiers who had

39 Kravchuk and Piddubnyi, "Viiskovi pamiatnyky Chernivtsiv."

40 "Ievreiskyi kirkut ta Bratska mohyla radianskykh hromadian, rozstrilianykh u 1941 r." [Jewish kirkut and mass grave of Soviet citizens shot in 1941], *Heritage*, accessed July 21, 2023, http://heritage-ua-ro.org/objects_view.php?id=CV479.

fought for the cause of independence.[41] The task of dealing with war cemeteries was taken on by the Ministry of Military Affairs, then by the Ministry of Public Works and Regional Directorates of Public Works of the individual provinces. In 1919, a semi-official organization emerged under the name the Polish Mourning Cross Society, which in 1925 transformed into the Society for Care of the Heroes' Graves.[42] In adherence to international obligations, Poland duly fulfilled its responsibility to preserve the First World War cemeteries. Nevertheless, a significant number of these sites were gradually neglected and fell into disrepair. As an illustrative example of this trend, one could point to the military cemeteries of the Russian army, which neither Poland nor the Soviet Union exhibited eagerness to maintain. At the same time, the gravesites of Polish soldiers—especially cemeteries of legionnaires—naturally evoked deeper emotions that resulted in the creation of the Society for the Protection of the Graves of Polish Heroes in Lviv in 1919.[43]

During the First World War, within Lviv (formerly Lemberg)—the capital of the Austrian crown land Galicia—two significant cemeteries emerged: the so-called "Hill of Glory" situated above Lychakiv Park, which served as a burial ground for Russian army soldiers, and the Austrian military cemetery located in Lychakiv district. Between 1915 and 1918, and following the 1935–37 consolidation of burial sites, the Austrian military cemetery became the final resting place for more than 10,000 fallen soldiers. Among them were a considerable number of Ukrainians who had served in the armies of both the Austro-Hungarian and Russian Empires, alongside Austrians, Germans, Poles, Russians, Hungarians, Serbs, Czechs, Slovaks, Croats, Turks, Bosnians, and others. Originally established by Russian sanitary services to inter captives of the Austro-Hungarian army who had succumbed in Lviv hospitals during 1914–15, the cemetery transitioned to being the burial ground for fallen soldiers of the Austrian, German, and Turkish armies once Lviv returned to Habsburg Monarchy control. During the war, the cemetery

41 Christopher Brennan, "The Memory of the First World War in the Former Lands of Austria-Hungary," *Comillas Journal of International Relations*, no. 3 (2015): 153; Maciej Maria Górny, "All Quiet? The Memory and Historiography of the First World War in Poland," *Rubrica Contemporanea* 3, no. 6 (2014): 39.

42 Marian Weber, *Opieka nad grobami bohaterów w Wschodniej Małopolsce* [Caring for the graves of heroes in eastern Lesser Poland] (Lviv: Polish Society for Care of the Heroes' Graves, 1929), 25.

43 Józef Białynia Chołodecki, *Wojenny posiew anioła śmierci i kult pamięci poległych* [War seeds of the angel of death and the cult of memory of the fallen] (Lviv: Polish Society for Care of the Heroes' Graves, 1926), 12–13; Christoph Mick, "The Dead and the Living: War Veterans and Memorial Culture in Inter-war Polish Galicia," in *Sacrifice and Rebirth: The Legacy of the Last Habsburg War*, eds. Mark Cornwall and John Paul Newman (New York, Oxford: Berghahn, 2016), 240.

was encircled by a low wooden fence. The crosses, each bearing a grave number and name plates were also made from wood. Subsequently, standardized concrete crosses were erected on the graves of Austro-Hungarian soldiers according to designs formulated in Warsaw in 1935. At the same time, Muslim tombstones marked the graves of Bosnian soldiers.[44] It is noteworthy that in 1937, the local authorities of Lviv made the decision to relocate Russian military graves from the Hill of Glory and reinter them within the eastern section of the Austrian military cemetery.[45]

Numerous military burials from the First World War also remained in Volhynia, including cities like Rivne, Dubno, Lutsk, Kovel, and Volodymyr-Volynskyi. At the outbreak of hostilities, the Russian authorities established a mass cemetery on the outskirts of Lutsk, located near the parish cemetery close to the St Theodosius Church. After the Austro-Hungarian army's arrival in the city, a cemetery was constructed nearby for fallen soldiers of various nationalities who served within this army. The centre of the cemetery featured an obelisk, and the layout included divided zones with pathways and uniform crosses.

Another burial site for Austro-Hungarian soldiers in Lutsk emerged on what is now Peremohy Avenue. Initially operating as an Orthodox cemetery from the late 19th century, a designated area for Protestant burials was later allocated nearby. During the Great War, this space also served for interment of military personnel. Around the end of 1915 or the beginning of 1916, the military section of the cemetery hosted a Pro Patria memorial honouring those who had perished in the world conflict. The grounds were landscaped, featuring flowerbeds and pathways, as well as a symbolic obelisk.[46] According to the memoirs of Gomel archpriest Pyotr Ryllo, the graves within the cemetery were identical and beautifully arranged. Each bore an oak cross with a graceful reinforced plaque displaying the name, photograph, and military unit of the deceased.[47]

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44 Khrystyna Kharchuk, "Avstriiskyi viiskovyi tsvyntar ta pokhovannia Ukraïnskykh Striltsiv na Lychakovi" [The Austrian military cemetery and the burial of the Ukrainian Riflemen in Lychakiv], *Halytska Brama*, no. 5–6 (1998): 18–19; Valentyna V. Shevchenko, "Velyka viina 1914–1918 rr. i Ukraïna: istorychna pamiat ta komemoratsiia" [The Great War of 1914–1918 and Ukraine: Historical memory and commemoration], *Problemy vsesvitnoï istoriï*, no. 2 (2019): 135–36.

45 Mick, "The Dead and the Living," 240.

46 Oleksandr Kotis, "Lutsk u Pershii svitovii: iak my vyzhyly" [Lutsk in the First World War: How we survived], *Khroniky Lubarta*, September 19, 2018, https://www.hroniky.com/articles/view/350-lutsk-u-pershii-svitovii-iak-my-vyzhyly.

47 "Vospominaniia gomelskogo protoiereia Petra Ryllo (1884–1937). Chast 3" [The memoirs of the Gomel archpriest Pyotr Ryllo (1884–1937). Part 3], *XPONOΣ. Tserkovno-istoricheskii almanakh*, no. 7–8 (2019–2020): 174.

The memorial underwent landscaping during the inter-war period, likely with the support of Austrian authorities or a public organization.[48]

A pivotal component of the historical memory of Galician Ukrainians concerning the First World War was the combat path of the Legion of Ukrainian Sich Riflemen. This military unit, comprising 2,500 men and modelled after the Polish Legions, was incorporated into the Austro-Hungarian army and engaged on the Eastern Front during the Great War from 1914 to 1917. Subsequently, these riflemen played a central role in constituting the Ukrainian Galician Army, the regular military force of the West Ukrainian People's Republic and the Ukrainian People's Republic. In the inter-war period, the burial places of the Sich Riflemen and soldiers from the UGA were transformed into important sites of memory. However, these sites tended to be more modest than the Polish ones, not least due to the restrictive conditions imposed by Polish authorities on the construction of monuments within Ukrainian cemeteries.[49]

The formation of the cult of fallen Ukrainian heroes was primarily propelled by the burgeoning public movement for the protection of war graves. This movement took root in 1921 with the establishment of a Regional Committee for the Preservation of War Graves in Lviv. Among its initial endeavours, the organization focused on the war graves within Yaniv and Lychakiv Cemeteries. In 1927, this committee evolved into the Society for the Preservation of War Graves, which, by 1935, boasted over thirty branches comprising 3,000 members. The society concentrated its efforts on arranging military cemeteries, tending to individual graves of the Ukrainian Sich Riflemen, erecting crosses, constructing monuments, and installing plaques in churches. The organization's leadership recommended the installation of crosses on church property, designating them as religious shrines. This approach circumvented the need for permission from local authorities.[50]

Particular emphasis was placed on preserving the memory of battles between the Legion of Ukrainian Sich Riflemen and the Russian army on Mount Makivka in late April and early May 1915, as well as on Mount Lysonia in August and September 1916. Members of Plast, the Ukrainian scouting

48 Waldemar Piasecki, "Zapomniany pomnik" [Forgotten monument], *Monitor Wołyński*, no. 24 (2013): 5.

49 Mick, "The Dead and the Living," 242.

50 Svitlana V. Havryliuk and Oleksandr N. Havryliuk, "Uvichnennia pamiatnykh mists natsionalnoï voiennoï istoriï u zakhidnoukraïnskykh zemliakh (1920–1930-ti roky)" [Perpetuation of the national military history memorial sites in the western Ukrainian lands (1920s–1930s)], *Vcheni zapysky* [V. I. Vernadsky Taurida National University], series: *Historical Sciences* 32 (71), no. 2 (2021): 13; Ihor Soliar, "Persha svitova viina v natsionalnii pamiati halychan (1923–1939)" [The First World War in the national memory of Galicians (1923–1939)], *Ukraïna: kulturna spadshchyna, natsionalna svidomist, derzhavnist* 26 (2015): 213.

organization, improved the military cemetery on Mount Makivka and erected a 5.5-metre-tall spruce cross bearing the inscription: "Here rest the Ukrainian Sich Riflemen who died for Ukraine in the month of May 1915. Ukrainian Plast 12–13.VIII.1921".[51] Meanwhile, efforts by public organizations to establish a memorial on Mount Lysonia faced setbacks due to a formal prohibition by Polish state authorities. However, in 1927, representatives from two branches of the Society for the Preservation of War Graves created there a symbolic memorial in the form of a mound, intending for it to become a site of national pilgrimage. This site of memory also became a locus of confrontation between Ukrainians and local authorities, resulting in the memorial's repeated destruction in 1929–30. Yet the Ukrainian community restored the mound and raised new crosses each time.[52]

During Pentecost, a traditional practice emerged among young people of hiking to Mount Makivka, Mount Lysonia, and other sites associated with the combat path of the Sich Riflemen.[53] Memorial services were also conducted in major cities of the region. In Lviv, on the first day of Pentecost, people would march to Yaniv Cemetery and the next day to Lychakiv Cemetery. It is worth noting that visits to riflemen's graves during Easter and Pentecost often resulted in prohibitions on services, confiscation of crosses, and other repressive measures imposed by Polish authorities.[54]

A different perspective on the perpetuation of the memory of the First World War was held by the Eastern Rite Christian inhabitants of Poland. The offensive of the Russian army in Galicia at the initial stage of hostilities led to repressions by the Austro-Hungarian authorities against the Carpatho-Rusyns (Ruthenians) and Ukrainian Russophiles from Zakarpattia, Galicia,

51 Vasyl Romaniuk, "Tam na hori, na Makivtsi" [There on the mount, on Makivka], *Halytskyi Korespondent*, June 13, 2019, https://gk-press.if.ua/tam-na-gori-na-makivtsi/.

52 Havryliuk and Havryliuk, "Uvichnennia pamiatnykh mists"; Oksana Drohobytska, "Vshanuvannia pamiati heroïv natsionalno-vyzvolnykh zmahan pid chas Zelenykh Sviat u Halychyni (20-ti – 30-ti rr. XX st.)" [Honouring the memory of the heroes of the national liberation struggle during the Green Holidays in Galicia (1920s–1930s)], *Halychyna* 32 (2019): 180–81.

53 See Adrian Mandzy, "A Hundred Years of Memory of the Great War in Western Ukraine: Case Studies of the Battlefields at Makivka and Lysonia," in *The Materiality of Troubled Pasts. Archaeologies of Conflicts and Wars*, eds. Anna Zalewska, John M. Scott, and Grzegorz Kiarszys (Warsaw, Szczecin: Roadside History Lessons Foundation; Department of Archaeology, Szczecin University, 2017), 200.

54 Drohobytska, "Vshanuvannia pamiati heroïv," 179; Oleksandr N. Havryliuk, "Zberezhennia pamiatok voiennoï istoriï na zakhidnoukraïnskykh zemliakh u mizhvoiennyi period: politychnyi aspekt, zmist, rezultaty" [Preservation of military history monuments in western Ukraine in the inter-war period: Political aspect, content, results], *Chornomorskyi litopys* 2 (2010): 61.

and Bukovina. Those arrested, suspected of being Russian sympathizers, were sent to internment camps, including Thalerhof in Styria and Theresienstadt in Bohemia, where tens of thousands were detained. Thousands of them succumbed to malnutrition, exhaustion, cold, and epidemics.

During the inter-war period, the former prisoners carefully preserved the memory of the tragedy that befell Galicia's Ruthenians. In March 1923, they founded the Thalerhof Committee in Lviv, which among other tasks, was to collect information about the tragic events and publish the "Thalerhof Almanac". In 1928, the inaugural Thalerhof Convention convened, laying the foundation for an annual tradition of conducting memorial services for the victims and initiating the erection of a monument honouring the Thalerhof victims in Lviv's Lychakiv Cemetery. Its unveiling ceremony occurred during the second convention in 1934, attended by over 15,000 participants. Lviv sculptor Ludwik Tyrowicz created the monument's design, which was later brought to life by the architect Oleg Lutsyk. This memorial complex featured a black marble stele with a large white marble eight-pointed cross on its front face. The inscription in Russian on the base of the stele read: "To the victims of Thalerhof. 1914–1918. Galician Rus'". Around this inscription, a wreath of thorns forged from metal was placed. A procession and a large crowd of people accompanied the opening of the memorial. Following this event, a tradition took root on Saint Thomas Sunday (the first Sunday after Easter) of holding a memorial service near the monument, dedicated to the innocent victims of the First World War, who endured suffering in Thalerhof, Theresienstadt, and other locations.[55] The memory of the Thalerhof camp victims was also cultivated by the installation of patriarchal crosses in many other cities (e.g. Halych, Przemyśl) and villages, near which liturgies for the dead were served.

3 Conclusion

During 1914–18, Ukrainian lands became the battleground for intense hostilities between the Austro-Hungarian and Russian Empires. These bloody events left

55 Iryna Orlevych, "Talerhofska trahediia: interpretatsiia ta instrumentalizatsiia rusofilamy v mizhvoiennyi period" [The Thalerhof tragedy: Interpretation and instrumentalisation by Russophiles in the inter-war period], *Z istorii zakhidnoukraïnskykh zemel* 18 (2022): 60–61; Aleksandr R. Iurlov, "Formirovanie mest pamiati rusinskogo naseleniia Galitsyi i Bukoviny ob internirovanii na territorii Tsisleitanii v 1914–1939 gg." [Formation of memory sites of the Rusyn population of Galicia and Bukovina about internment on the territory of Cisleitania in 1914–1939], *Tambov University Review*, series: *Humanities* 27, no. 3 (2022): 835; Sergei Suliak, "Talergof i Terezin: zabytyi genotsid" [Thalerhof and Terezin: The forgotten genocide], *Rusin*, no. 3–4 (2008): 73.

behind numerous burials, including war cemeteries, and individual and mass war graves, of the warring armies. At the outset of the Great War, interments of the deceased—especially those of lower ranks—took place spontaneously, primarily at the sites of their passing. As the front line stabilized, a more organized approach to burials emerged. The military authorities of the Russian and Austro-Hungarian armies began establishing war cemeteries. Simultaneously, separate sections were laid out for military burials within existing urban and rural cemeteries.

The identification of landscapes and sites of the First World War began in both the Romanov and Habsburg Empires right from the initial phase of hostilities. The ambivalent nature of this process could be observed in the case of Austro-Hungary, which treated the remains of enemy soldiers equally to its own or allied ones when establishing cemeteries but simultaneously demolished the monument commemorating Russian soldiers that had been inaugurated by Czechs in occupied Galicia. Consequently, the physical and symbolic appropriation of territories by one of the warring sides led to the material transformation of landscapes, in particular through the removal of potentially conflict-inducing symbols.

The efforts to commemorate those who perished during the world conflict, undertaken in the time of the short-lived Ukrainian People's Republic and Ukrainian State, did not reach a conclusion and eventually ceased with the establishment of Soviet rule. For ideological reasons, memorialization of the Great War in the Ukrainian Soviet Socialist Republic was impossible. The material reminders of the war scattered across the territory of the country gradually decayed or were intentionally destroyed. Due to objective reasons, the highest concentration of sites of memory related to the world conflict in the inter-war period could be found in the western part of what is now Ukraine: in Zakarpattia, Chernivtsi, Ivano-Frankivsk, Ternopil, Lviv, and Volyn regions. In the aftermath of the war and subsequent military conflicts, these territories were incorporated into the First Czechoslovak Republic (Zakarpattia), the Kingdom of Romania (northern Bukovina, Bessarabia, southern Maramureș), and the Second Polish Republic (eastern Galicia, Volhynia, part of western Podolia). The authorities of the nation-states, in adherence to their obligations, continued to maintain the Great War cemeteries, erecting monuments and memorials to participants of the world conflict. These actions usually garnered widespread support from local communities and civic initiatives.

Close scrutiny of the commemoration strategies of Czechoslovakia, Romania, and Poland shows that the situation in the Second Polish Republic was notably more complex and diverse. It reveals how the post-war transformation of memoryscapes was instrumentalized by different ethnic groups. On the one hand, the state actively engaged in the reburial, regularization, and consolidation of war graves and cemeteries. On the other hand, there existed a clear bias

against the burials of servicemen of non-Polish origin. A visible example of this attitude might be the burial sites of the Sich Riflemen and soldiers of the Ukrainian Galician Army, which had an important national meaning for the local Ukrainian population and its self-identification. Realizing the symbolic importance and potential of these memory sites, Polish authorities gradually placed restrictions on the installation of memorials, crosses, and commemorative plaques there. The imposition of limitations and periodic destruction of the memorials turned these memoryscapes into the loci of Ukrainian-Polish confrontation, or "conflict landscapes", as Saunders defined them.[56]

Thus, the consistent preservation of the First World War memorial landscape in Ukrainian lands during the inter-war period was possible solely within Czechoslovakia, Romania, and Poland. Despite facing distinct challenges and internal conflicts, these states and their local communities succeeded in institutionalizing the memory of the world conflict and developing an appropriately wide commemorative infrastructure.

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56 See Nicholas J. Saunders, "The Dead and Their Spaces. Origin and Meanings in Modern Conflict Landscapes," in *Conflict Landscapes. Materiality and Meaning in Contested Places*, eds. Nicholas J. Saunders and Paul Cornish (London: Routledge, 2021), 3–33.

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CHAPTER 14

Conflict Landscapes at the Edge of Empire: Archaeology and Environment of a Desert Insurgency – the Arab Revolt, 1916–18

Nicholas J. Saunders

The Middle East offers different First World War perspectives on the formation and character of modern conflict landscapes. Unlike the European Western and Eastern Fronts, the Arab Revolt was characterized by sporadic, brief, and low-level fighting, essentially guerilla warfare; consequently its archaeology has ephemeral horizontal rather than deep vertical stratigraphy. The British experience of modern war along the Western Front was mainly of little help in the deserts of the Arab Revolt, although the innovative use of aeroplanes and armoured cars combined well with traditional Arab raiding culture, creating a hybrid force largely organized by T.E. Lawrence. There is little doubt that physically, environmentally, culturally, politically, and in terms of heritage, the Arab Revolt created an enduring legacy of imperial debris.

Here, my focus is on the archaeology of British-Arab actions against the Ottoman Turkish Hejaz Railway line from Damascus to Medina which were a central feature of the Arab Revolt of 1916–1918. The Revolt was nested within the First World War but was also a marriage of traditional Bedouin raiding tactics and modern technology to create what was, in effect, the world's first modern guerrilla landscape. Given the influence of such tactics on later twentieth century conflict, the Arab Revolt offers sharp insights into the character of many post-1918 conflict landscapes – not least the rapid advance of Islamic State in the same region in 2014 and using the same tactics as the British in 1916–18. It also offers insights into various aspects of the natural and cultural landscapes which have had enduring consequences down to the present.

Key differences between southern Jordan and the better known Western and Eastern Fronts are important to state: the first is geological, as the stony desert allows mainly for a thin surface layer in this conflict zone, and so archaeologically there is horizontal rather than vertical stratigraphy, with traces of conflict being ephemeral and fragile. A second difference is the asymmetric nature of the conflict – hit-and-run tactics leaving only marginal traces. Yet, the remoteness of this area has counterbalanced this, leaving well-preserved sites along the route of the Hejaz Railway; this has been reinforced hitherto by a lack of

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interest in recent historical conflict archaeology in an area of rich prehistoric, classical, and Islamic remains.

The idea of the "edge of empire" runs through this desert conflict at many different levels, embracing religion, pilgrimage, traditional Bedouin raiding, Western industrialised technologies (aerial and motorized transport), environmental degradation, myth making, and "othering" to name just some. The archaeology itself is composed of a conflict landscape of imperial debris, memoryscapes of the Arabs, British, German, French, and Turkish (Ottoman) – yet very little scientific investigation or memorialization, other than the desert itself and its scattered remains. This gap has perhaps too often been filled by imaginative romanticization in popular history, novels, and Hollywood films.

Geography met culture, and tradition confronted modernity in the Arab Revolt – whose military character was forever defined by what we now call guerrilla warfare. And even this aspect is tied to a particularly influential and controversial figure: T.E. Lawrence and his 1922 *Seven Pillars of Wisdom*, which Lawrence himself admitted was a memory of a memory – written in 1919 from recall and notes, then lost (or jettisoned), then rewritten from memory again and amended between late 1919 and 1922.[1] Unsurprisingly, these events were remembered and interpreted differently in published Arab sources,[2] but also in the oral tradition. Bristol University's "Great Arab Revolt Project" (GARP) fieldwork interviews between 2006 and 2014 recorded contrasting attitudes to Lawrence – pride in ancestors who rode with him during the Revolt, and contemptuous dismissal of his self-aggrandizing behaviour. These conflict landscapes, therefore, embody contested memories by the Bedouin themselves whose traditional lands they remain. (Figure 14.1)

1 A Traditional Routeway

The north-south cultural routeway connecting Syria, the Levant, and the wider Mediterranean world with Yemen, southern Arabia, and the maritime trade routes to the East has existed for millennia, and was used by nomads, traders, pilgrims, invaders, and migrants. However, the Arab conquest of Syria in 636 CE greatly increased the routeway's importance, especially after the establishment of the Umayyad dynasty's capital at Damascus in AD 661. From this time,

1 Thomas Edward Lawrence, *Seven Pillars of Wisdom: the complete 1922 'Oxford' text* (Fordingbridge: Castle Hill Press, J. & N. Wilson, 2003), 4.

2 E.g. Souleiman Mousa, *T.E. Lawrence: An Arab View* (London: Oxford University Press, 1966).

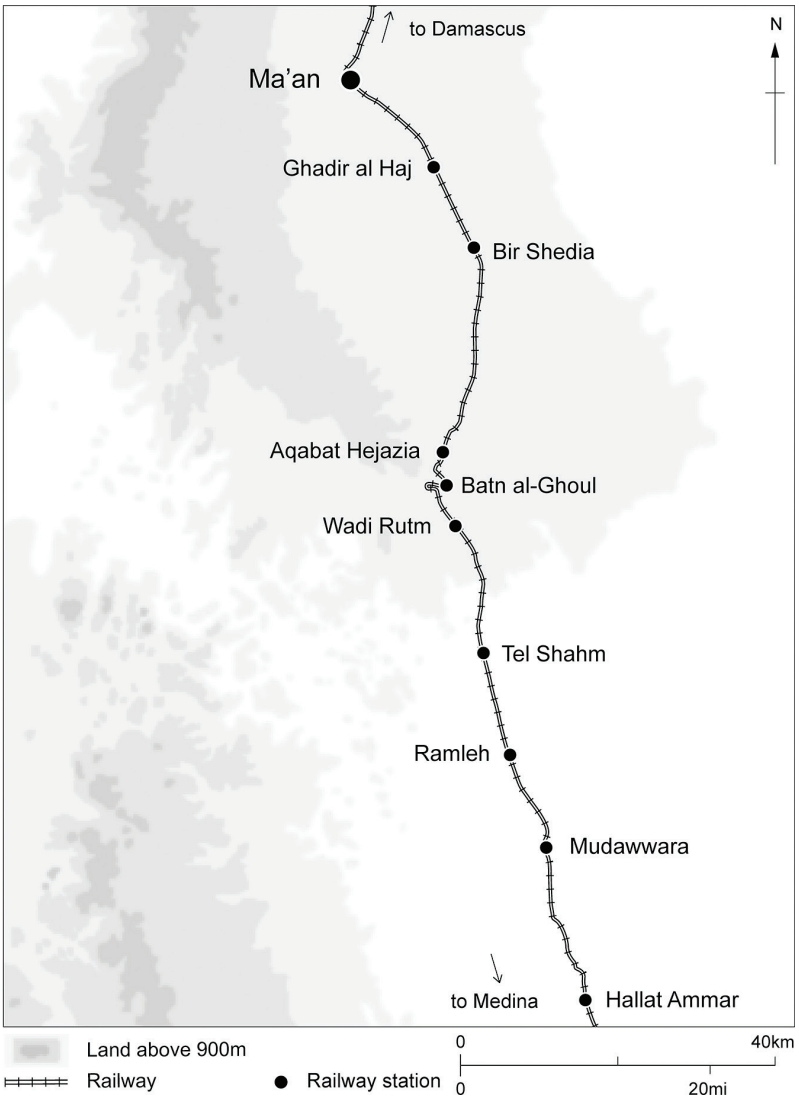

FIGURE 14.1 Map showing sites mentioned in the text.
SOURCE: GARP

the annual Syrian Hajj pilgrimage left for Mecca from Damascus along the ancient route now reconfigured as a pilgrim road and known as the *Darb al-Hajj al-Shami,* itself following the earlier prehistoric, then Nabatean/Roman, then Byzantine trade routes down to southern Arabia and what is today the Yemen. (Figure 14.2) It became arguably the preeminent Hajj route joined as

FIGURE 14.2 The *Darb al-Hajj al-Shami* Pilgrim Road in Wadi Rutm
SOURCE: AUTHOR

it was by others from Iraq, Iran, Egypt, Libya and sub-Saharan Africa. Security and defence were always serious considerations, as were water, food, and accommodation. This was because, in part, the Hejaz region through which the Hajj had to pass had in many ways always been liminal – part of the Ottoman Empire, yet consistently troublesome with recalcitrant Bedouin sheikhs, and with only a loose central control over this far-flung imperial domain.

These Hajj journeys were major undertakings, as the traveller Charles Doughty observed when he accompanied the 1876 caravan for part of the way. He estimated there were about 6,000 people and 10,000 animals, and that it was around 100 m wide and some three km long when underway. Unsurprisingly, camel-mounted armed escorts guarded the caravan night and day.[3] In Mamluk (CE 1250–1516) and later Ottoman (CE 1516–1918) times, the rulers built caravanserais, stopping stations, water installations, improved roads, and fortifications.[4] Defence had always featured in these Hajj journeys (and probably also back into prehistory), and during the 17th and 18th centuries the Ottomans focused on fort building when Bedouin attacks

3 Charles Doughty, *Passages from Arabia Deserta* (Harmondsworth: Penguin, 1956), 7–11.

4 Andrew Petersen, *The Medieval and Ottoman Hajj Route in Jordan: An Archaeological and Historical Study* (Oxford: Oxbow, 2012).

on the caravans increased after they had obtained hand-held small arms.[5] For the empire's sultans such undertakings "demonstrated the effectiveness, and therefore legitimacy, of their state power; the trade caravans were a rich source of taxable wealth; and the protection of pilgrims constituted an ideologically potent display of traditional piety."[6] This 1,250-year-old tradition was replaced in the first decade of the 20th century by the industrialization of desert travel by the Hejaz Railway.[7]

The Hejaz Railway – the "Railway of Faith" – was created by the Ottoman Sultan Abdulhamid II in Istanbul to facilitate the Hajj, justify the Ottoman protection of the Holy Cities of Medina and Mecca (and his status as Caliph), and tie the periphery to the centre more effectively. One result was that even when the railway was being surveyed and built between 1900 and 1908, it attracted the hostility of the Bedouin who saw it as a cheaper three-to-four-day alternative to the traditional expensive and risky 40-day walking caravans from which they benefitted by hiring camels and offering protection. Indeed, the slightly earlier telegraph line (which followed the same route in 1900–1901) had also met with Bedouin opposition. Although the Ottomans paid protection money to local sheikhs not to destroy the telegraph line, a year after the line's inauguration in 1902 the Bedouin were already cutting the wires and knocking down the poles.[8]

2 The Great Arab Revolt Project (GARP) 2006–2014

Although the railway from Damascus to Medina is approximately 1,300 km, the Great Arab Revolt Project focused mainly on the 113 km of the route from the town of Ma'an in southern Jordan south to the border with Saudi Arabia just beyond the Bedouin settlement of Mudawwara.[9] While the original intention had been to investigate the damaged and mainly abandoned Hejaz Railway stations along this route (Figure 14.3), it soon became evident that there existed several previously unrecognized and undocumented landscapes

5 Nicholas J. Saunders, *Desert Insurgency: Archaeology, T.E. Lawrence, and the Arab Revolt* (Oxford: Oxford University Press, 2020), 45.

6 Mansour Shqirat et al., "Fire and Water: Tradition and Modernity in the Archeology of Steam Locomotion in a Desert War," *Levant* 43, no. 1 (2011): 100.

7 Metin M. Hülagü, *The Hejaz Railway: The Construction of a New Hope* (New York: Blue Dome, 2010); James Nicholson, *The Hejaz Railway* (London: Stacey International, 2005); Murat Özyüksel, *The Hejaz Railway and the Ottoman Empire* (London: I.B. Tauris, 2014).

8 Özyüksel, *The Hejaz Railway,* 153.

9 Saunders, *Desert Insurgency*.

FIGURE 14.3 Ruins of Wadi Rutm Hejaz Railway Station
SOURCE: AUTHOR.

in between these stations and farther out in the desert. The fieldwork schedule was amended accordingly.[10]

The first of these discoveries was an unexpected landscape composed of the remains of over 100 Ottoman tented campsites belonging to the railway battalion labourers who constructed the railroad in this area in 1905–6. These camps were laid out usually as two parallel lines of tents, each tent housing up to 10 or 12 men, and today identifiable by the tent-rings of stones used to weigh down the canvas walls. Some of these campsites were huge, with enough tents to house several hundred labourers, and were usually sited just a few hundred metres from the railway bridges and culverts they were building. To our knowledge, the existence of this wealth of early-20th century archaeology – capturing the confrontation of tradition and modernity in an almost unknown region of the Middle East – was virtually unacknowledged. This unique archaeological signature mainly followed part of the *Darb al-Hajj al-Shami* pilgrimage route mentioned above. The size and number of these construction-era campsites indicated that this railway-building landscape was also a conflict landscape, as it incorporated defensive features against a technologically low-level threat from the Bedouin between 1904 and 1916.

10 Saunders, *Desert Insurgency,* 2, 4.

Reinforcing this view was the realization that even after the railway itself was completed, some of the original infrastructure (stations and associated buildings) were constructed with designed-in loopholes for rifles, indicating that the admittedly low-level Bedouin threat continued even after the railway began operating.[11] Examples of this can still be seen at the railway hub of Ma'an Station, the isolated trackside strongpoint of the Blockhouse, and further south at Tel Shahm Station.

The second landscape that GARP discovered and investigated belonged to the Arab Revolt itself and was composed of defensive structures built by the Ottomans to protect the railway from Arab/British guerrilla attack during the period 1916–18. It formed an anti-insurgency defensive network out in the desert. Its distinctive components included Ottoman army camps, earthwork "karakoll" strongpoints, trenches, machine-gun posts, small stone-built forts (Figure 14.4), impromptu (unplanned) loopholes for rifles in railway buildings, hastily-built mud-brick blast walls, and occasional reuse of the earlier construction-era campsites. There were also British locations facilitating raids on the railway, and these included "overnight" armoured car raiding camps such as those at Tooth Hill, and short-lived advanced landing grounds used by the Royal Air Force such as the temporary canvas hangars at Disi.[12] Virtually none of the Ottoman or British sites belonging to this conflict landscape were known or recognized before 2006. The archaeology of these momentous events had entirely slipped through the net in the form of two important but hitherto unknown Jordanian heritage landscapes. It was clear that, in a sense, the desert was a museum of guerrilla warfare – a museum under threat of natural erosion and modern damage.

We encountered many previously unknown examples of this conflict along the route of the Hejaz Railway, though the famous Hallat Ammar ambush illustrates the process of conflict landscape formation and its easily misinterpreted character particularly well. On 19 September 1917, T.E. Lawrence and a group of Bedouin and British soldiers blew up a low-lying railway bridge and derailed a double-locomotive Turkish train at what is today a remote demilitarized zone between Jordan and Saudi Arabia.[13]

The one-sided firefight which followed saw minimal casualties for the attackers, but the Turks lost about 70 dead, 30 wounded, and 80 taken prisoner in a scene of carnage and plunder which lasted less than 10 minutes. These events were immortalized by Lawrence in his *Seven Pillars of Wisdom* and then visually as the iconic scene in David Lean's 1962 Hollywood epic *Lawrence of*

11 Saunders, *Desert Insurgency*, 59, 87.

12 Saunders, *Desert Insurgency,* 61, 184–192, 228–232.

13 Lawrence, *Seven Pillars of Wisdom*, 407; Saunders, *Desert Insurgency*, 68–70.

FIGURE 14.4 Makins' Fort, which defended a large Hejaz Railway bridge
SOURCE: AUTHOR.

Arabia. Investigating this location was challenging. Not only did we need an armed Jordanian army escort, but during the last 100 years, three versions of events had circulated – the historical, the literary, and the cinematic – all layered one on top of the other. Lifting and interpreting each of these layers and making sense of the whole was the aim of this particular investigation.

In 2013, we had the opportunity to survey the site, by which time, despite its geographical isolation, it was no longer the pristine remains of the Arab Revolt action, but rather a complex mix of the intervening century's activities, disturbing, overlaying, obscuring, and reconfiguring the original events (Figure 14.5). These included immediate post-ambush repairs and fortification by the Turks, subsequent abandonment and then short-lived reuse of the railway, later conflict with Saudi Arabia, an abortive 1960s refurbishment of railway infrastructure including a second repair and rebuilding of track and bridge, plus significant bulldozer clearance of the area. In one sense this was the archaeology of ten minutes, but in another way of course it was a palimpsest of more than a century's activities in this remote location. The Hallat Ammar ambush is a powerful example of the multidimensional character of a modern conflict landscape, including here the role of cinema in creating and perpetuating a powerful popular and to an extent mythical view of events.[14]

14 Saunders, *Desert Insurgency*, 241.

FIGURE 14.5 Railway wreckage of the Hallat Ammar train ambush, 19 September 1917
SOURCE: AUTHOR.

It is worth noting here that while the ambush was a spectacular tactical success for the British and their Bedouin allies, the real significance was operational, and lay in the fact that it gave the attackers detailed knowledge of the terrain, showed it was possible to drive armoured cars in the area, and revealed that any attack on Mudawwara Station would have to be launched with a large force if it was to be successful.[15] It also emboldened Lawrence and the Bedouin to attack other Hejaz infrastructure further north.

3 Environment and the Revolt

Traces of the Arab Revolt were investigated archaeologically for the first time by GARP between 2006 and 2014, yet in the background was the ever-present and often hostile environment – the landscape of stony desert, wadis, and sand dunes which had endured for millennia. It was this terrain, already a deep-time palimpsest, which framed the 1916–1918 conflict, gave it a distinctive character, and contributed also to the reality and the myth of Lawrence of Arabia. Here, I explore the way in which the exploitation and defence of key resources needed

15 Saunders, *Desert Insurgency*, 70.

in the desert – wood (trees) and water – were transformed by the railway and the military efforts to attack and defend them, and will briefly mention the issues of health, the modern phosphate industry, and tourism.

3.1 *Water*

Water rules the desert. For millennia, the route from Damascus south was a cultural highway for spices, wealth, slaves, and religion – a path which navigated between potable water sources few and far between and which also acknowledged the deadly threat of sudden rains and flash floods. "After copious rains have fallen at the heads of these valleys, the water rushes wildly through the channels, washing away the camps and drowning both the people and their herds …" .[16] At the start of the 20th century, water helped determine the routeway of the Hejaz Railway and the nature of its construction with more than 118 bridges and innumerable culverts. It also determined where many stations were located – as near to water sources as possible, but which only occasionally were the winter-rainwater-filled cisterns attached to earlier Hajj forts, such as Qatrana with a capacity of some 36,000 cubic metres. The demand for water greatly increased at this time, for now locomotives competed with camels, horses, livestock and people for the precious resource.

In GARP's research area, there were very few water sources (see below), and so between 1908 and the mid-1920s, water for remote desert stations and garrisons had to be carried in one or more large cast-iron water tanks mounted on special wagons on the Hejaz Railway trains. The architecture of such stations as Batn al-Ghoul and Wadi Rutm indicated the importance of water by incorporating plaster-walled subterranean cisterns for leak-proof storage. In a few rare instances, subterranean water was wind-pumped to the surface to fill trackside water-towers. If the Ottomans, the European Allies, and the Bedouin were the three major protagonists of the Arab Revolt, water was the all-pervading fourth element.

The Ottoman Sultan Abdulhamid II, in common with all Islamic rulers, liked to display power, piety, and benevolence in the provision of hydraulic facilities such as dams, channels, and cisterns to facilitate the flow of nomads, traders, and pilgrims.[17] Unlike his predecessors however, Abdulhamid's Hejaz Railway ambitions had geopolitical implications. Allying himself with imperial Germany and building a railway which threatened imperial Britain's access to

16 Alois Musil, *The Manners and Customs of the Rwala Bedouins* (New York: Czech Academy of Sciences and Arts, 1928), 8.

17 Shqirat et al., "Fire and Water," 105.

India via the Suez Canal gave a new strategic dimension to the millennia-old desert route which the railway would follow.

An example of how these various elements came together and figured in the building of the Hejaz Railway, the Arab Revolt, and our GARP investigations is the 18th-century Ottoman Hajj fort of Fassu'ah (*Qal'at al-Fassu'a*) built at the intersection of two wadis to maximize water capture during winter floods. This was the only major water source between the town of Ma'an 55km to the north and Mudawwara, some 58 km further south. "The quantity of water potentially available is evident from the dried-up water channels and lines of vegetation in the wadi beds. In the past, there would have been much more."[18] Once captured, water was stored a short distance north-west of the fort in two large rectangular cisterns, the more northerly one measuring some 52 m by 42 m, the more southerly one approximately 40 m by 53 m (Figure 14.6). The northern and western corners of both cisterns are curved, to facilitate the flow of water around them, and both have in their eastern and southern corners steps facilitating access to fill flasks and water skins. Other architectural features allowed for the watering of animals and the possible filtration/purifying of water flowing in from the wadi.

Two smaller cisterns also collected water. One, lay beneath the courtyard in the middle of the fort itself and was filled by winter run-off from the roofs of the fort. These were designed for this purpose, and the water was directed into the cistern along iron channels called *mizræb*. This water was free of sand and silt and so was purer than wadi water and could be used for drinking and cooking. A fourth cistern, located about 200 m south-east of the fort, was built of cement and covered to prevent evaporation and pollution, with various cracks having been repaired with asphalt. Local Bedouin tradition says it is still occasionally used to water animals in a small basin (or *mashrab*) designed for this purpose.[19]

Such was the importance of Fassu'ah Fort and its water cisterns in the traditional ways of journeying through the desert that it was repurposed during the Arab Revolt. In fact, it had likely been adapted around 1904/5 when the Hejaz Railway construction teams passed by just 1.8 km to the southeast up on the ridge where the station of Aqabat Hejazia was built along with its own subterranean cistern (Figure 14.7).[20] This station was clearly meant to be a watering stop for the locomotives before the descent to Wadi Batn al Ghoul as the nearby fort itself had been for the earlier traditional camel caravans.

18 Shqirat et al., "Fire and Water," 102–103.

19 Shqirat et al., "Fire and Water," 104.

20 Saunders, *Desert Insurgency*, 126–130.

FIGURE 14.6 Large cistern at the Hajj fort of Fassu'ah
SOURCE: AUTHOR.

FIGURE 14.7 Subterranean cistern at Aqabat Hejazia Station
SOURCE: AUTHOR.

During the Revolt, the vulnerable path from the fort to the station along which water for all the trains, stations, and garrisons in the area had to be carried (by mule), was fortified by sentry-posts, small trenches, and stone-built strongpoints built on the commanding ground of the ridge top.[21] Aqabat Hejazia Station itself was heavily fortified during the Revolt and became in effect a small counter-insurgency fort with additional mud-brick walls, improvised loopholes, breastworks, and trenches.

Fassu'ah Fort was reused by the Ottomans and bears evidence of conflict. Investigations found the remains of water-skins inside the fort, a mule-shoe discovered on the track to the station, and a single fired Arisaka rifle cartridge recovered from beneath the fort's external wall.[22] A local tradition that water from the fort's cisterns supplied the railway during the war is supported by testimony in *Seven Pillars of Wisdom*, where Lawrence records for 5–6 October 1917:

> In the night we sent all our camels along with part of our men, to go to Fasoa [Fassu'ah] for water from the old pilgrim tank. It lay under the rifles of a Turkish post, but in the darkness they could see nothing, and Dheilan, the head man of the Darausha, who was with us as my friend, supervised our waterers in such a way that they gave no warning of themselves while they drew for the animals and drank and filled the common water-skins for us.[23]

The Ottoman Hajj landscape was reshaped by the Arab Revolt and water is the key to understanding it at this location.

> … in 1917–18, we have old cisterns filled by winter flood-water from a local wadi, guarded by a small garrison of Ottoman soldiers posted in a 300-year-old fort and in sentry-posts on the surrounding heights. And we have trains of mules carrying water in skin-bags up the track that winds out of the wadi and across the plateau to the new railway station 1.8 km away. The cistern there is then guarded by another small garrison posted behind the walls and breastworks of a station that has been converted into a miniature desert fort, with trench lines beyond.[24]

21 Saunders, *Desert Insurgency*, 131.
22 Saunders, *Desert Insurgency*, 131.
23 Lawrence, *Seven Pillars of Wisdom*, 421.
24 Shqirat et al., "Fire and Water," 109.

Water continues to define not just the area of southern Jordan which saw the Hejaz Railway and the Arab Revolt between 1900 and 1918 (and the mid-1920s for the re-used railway), but the whole of what is now the Hashemite Kingdom of Jordan. Between 2009 and 2013, the Jordanian government commissioned the "Disi Water Conveyance Project", which today pumps water along a pipeline from the vast Qa Disi aquifer in southern Jordan (which extends into Saudi Arabia) north to Amman (Figure 14.8). For part of the way the now buried water pipeline lies beneath the landscape which saw several Arab Revolt actions in 1917–18.

It was this subterranean aquifer water source which had always made the area around the Bedouin settlement of Mudawwara an attractive stopping place for Hajj caravans and which later made it an ideal location for the Hejaz Railway Station of the same name. This in turn made the well-defended station and its environs a prime target for British and Bedouin attacks in the Arab Revolt.[25] The relationship between conflict and aquifer water is clear at this time, and today the latter plays a role in opening up the desert to agriculture

FIGURE 14.8 Laying the water pipeline in 2012 during the 'Disi Water Conveyance Project' SOURCE: AUTHOR.

25 Saunders, *Desert Insurgency*, 335, note 86.

in southern Jordan and to major development on the other side of the border in Saudi Arabia.

3.2 *Trees and Wood*

While water was a key element of the environment threatened by the Arab Revolt, the main agent of the overuse of this resource was the Hejaz Railway's locomotives. In complex, unexpected, and interconnecting ways, the building of the Hejaz Railway and the subsequent Arab Revolt combined to produce severe environmental damage on the forested area near the town of Shawbak (site of a medieval Crusader fortress) and contributed to the confrontation between modernity and tradition. Here we see plainly how the context and material culture of modern war revalued and reshaped hitherto traditional landscapes and their life-giving resources.

One consequence of the Arab Revolt and the Allied naval blockade of imperial Ottoman ports was that Hejaz Railway locomotives could no longer be powered by imported, mainly Welsh, coal.[26] Wood proved to be the main alternative fuel, but was a scarce and valuable resource in much of Syria and virtually all of Arabia.[27] Nevertheless, it was far less efficient than coal, and if not allowed to season then its moisture content could be very high. Such "green wood" also contained natural resins and gums – all of which combined to considerably reduce engine performance.[28] In addition, trains designed for coal use suffered from not having a wood-burning configuration. Immediately therefore, environmental damage shifted from the Welsh valleys to the scarce wooded areas of the Middle East.

Wood became an ever more sought-after resource and was scavenged from anywhere. Almost all the evacuated houses in Medina, for example, had been stripped of their woodwork by February 1918 to fuel the railway.[29] But this was not enough, and a far larger quantity of wood was required. Syria's woodlands were plundered, and entire forests disappeared in the Yarmouk Valley and in the region around the major town of Salt. Fruit trees were literally decimated, with some 22,000 acres of olive trees cut down.[30] Even this fell short of what was needed to keep the Hejaz locomotives moving and the Ottomans' ability to continue prosecuting the war.

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26 R. Tourret, *The Hedjaz Railway* (Abingdon: Tourret Publishing, 1989), 17.

27 Tourret, *The Hedjaz Railway*, 16.

28 George W.C. Kaye and Thomas H. Laby, "Tables of Physical and Chemical Constants," National Physical Laboratory, 2008, https://www.kayelaby.npl.co.uk.

29 Tourret, *The Hedjaz Railway*, 71.

30 Tourret, *The Hedjaz Railway*, 71.

One solution adopted in 1915 was constructing a branch line from the main Hejaz railroad station at Unayza to Shawbak some 40 km to the west; this gave access to the Al-Hiyysheh Forest in the mountains along the edge of the Jordan Rift Valley[31] – though this itself contributed to the scarcity of timber because of the demand for wooden sleepers on which to lay the track. The ecological impact was devastating.

> One of the most destructive periods for the forests of the south occurred during the First World War as a result of the massive felling operations by the Ottoman Turks. The Hejaz railway, the lifeline of Turkish garrisons in Arabia, was dependent on wood for fuel, and at this period there was sufficient woodland in the southern highlands to justify the building of a branch line, the 'forest railway', from Uneiza to Shoubak to tap this supply.[32]

> Shawbak and Al-Hiyysheh Forest lie approximately 1500 m above sea-level – almost 2000 m above the bottom of the Rift Valley – and this altitude ensures that the area is relatively cool, wet, and fertile. It is for this reason that, 90 years ago, much of it was heavily forested, and much of the rest was heavily cultivated and settled. … the landscape is a proverbial palimpsest, with Late Ottoman reuse of prehistoric, ancient, medieval, and early-modern structures, and much post-Ottoman remodelling since. Because of this, the clarity of the industrial and military imprint of 1916–18 is much less than that of the desert areas. Stone has been robbed for building, cleared for cultivation, and carted off to fill holes and provide hard-standing.[33]

GARP interviews in the Al-Hiyysheh area yielded insights into the scale and character of both the Ottoman wood-cutting operation and its militarization.

> Abdelqāder Al-Khoshān, a 95-year-old native of Shawbak, and his son, Mefle … , were interviewed by one of the GARP team in 2008. Abdelqāder recalled how Ottoman soldiers, labourers, and volunteers were gathered in an area called Al-Farqoun in Al-Hiyysheh for the purpose of cutting wood and making charcoal for the trains. Three Ottoman units [battalions?] were deployed along the branch line between Unayza and its

31 Nicholson, *The Hejaz Railway*, 57.

32 K. Atkinson and P. Beaumont, "The forests of Jordan," *Economic Botany*, no. 25 (1971): 311.

33 Shqirat et al., "Fire and Water," 111.

> terminus at Rās Al-Hadīd, many of them stationed on the high ground overlooking the railway.[34]

The Ottoman officer responsible for the wood-cutting operation was Zubayr Pasha, whose praises were sung (quite possibly ironically) by local people. "Zubayr, who is in Rās Al-Hadīd, his good deeds are increasing, he brought new saws, and left no wood in Al-Hiyysheh."[35] During our interviews we were shown what was claimed to be a large rusty Ottoman saw, and were told of "iron axes" and even the occasional use of explosives. Wood-cutting began early in the morning, and the logs taken in ox-drawn "iron carts" to a storage area at Rās Al-Hadīd, and from there to a charcoal-burning centre at Umm Al-Qbour. Wood was salvaged as well, and local people sold what wood they could obtain to the Ottoman authorities. Two Ottoman officials operated the weighing machine and paid for the wood.

GARP found that the oral tradition was supported by first-hand observation, and in 2007 we identified several probable or possible Late Ottoman features at the site we call Rās Al-Hadīd. At the edge of the village the remains of several cisterns, an embankment, and a demolished Ottoman building were likely all that survived of the station at the end of this branch line. Further away to the west towards Al-Hiyysheh proper, where some trees exist today (Figure 14.9), are the remains of four circular stone-built watchtowers or sentry-posts, one of which was associated with stone breastworks. And on high ground south-west of the village was what appeared to be a small fort consisting of breastworks and circular sentry-posts.

In 2008, some six km to the north-east, further investigation by interviews and observation revealed what was probably a halt on the branch line and which GARP called Shawbak Halt. Here was a modern village interspersed with mainly ruinous Late Ottoman buildings. Overlooking a curve in the former railway line near the village was a medieval stone-built ringwork and a breastwork which would almost certainly have been reused in the Late Ottoman period. The combination of evidence suggests that the Al-Hiyysheh Forest branch line served several distinct wood-cutting locations, some closer to the railway than others, with ox-drawn carts taking wood to the station and probably several halts. Such was the strategic importance of the operation that the area was heavily militarized with a series of observation posts and defended positions on the high ground.

34 Shqirat et al., "Fire and Water," 111.
35 Shqirat et al., "Fire and Water," 111.

FIGURE 14.9 Landscape of the Al-Hiyysheh area near Rās Al-Hadīd
SOURCE: AUTHOR.

The immediate and long-term ecological damage is clear, but what was the economic impact of the railway, the wood-cutting, and the military occupation on local society? Did local people willingly participate in, actively resist, or remain indifferent to the Ottoman presence and activities? How far did the influx of Ottoman funds, engineers, labourers, soldiers, and officials impact on traditional lifeways and culture? And what of the war itself here? Were the Bedouin and T.E. Lawrence's guerrillas a real and present danger, or mere shadows? These are questions for future research to try and answer.

3.3 *Health*

While many interrelated issues remain to be investigated, that concerning health and disease can be briefly mentioned. With so many pilgrims making their way to Mecca, health became an increasingly important concern, and played a role in international sanitary politics. A devastating cholera pandemic between 1863 and 1875 had begun in India and travelled quickly to Mecca with Muslim pilgrims where it claimed some 30,000 lives of the faithful.[36] Prior to the period 1923–53, there had been 27 cholera epidemics during the Mecca

36 Nermin Ersoy, Gungor Yuksel, and Aslihan Akpinar, "International Sanitary Conferences from the Ottoman perspective (1851–1938)," *Hygiea Internationalis: An Interdisciplinary Journal for the History of Public Health* (2011): 59.

pilgrimage in the previous 81 years, and the Hejaz was considered a relay station of cholera in its progress from east to west.[37] One consequence of this was the establishment of cholera-blocking quarantine stations and restrictions, such as that established on Kamaran Island at the southern tip of the Red Sea in 1882.[38] By 1896, there were reportedly 12 quarantine stations in the Red Sea and the Hejaz.[39]

The situation became more serious once the Hejaz Railway began operating in 1908, offering the disease a new vector of rapid dispersal. Indeed, during the construction of the railway and its infrastructure, there had been many cases of desertion by the Ottoman workforce, mainly to do with the fear, and actual cases, of disease, notably cholera. For the railway's passengers and the Hajj organizers too, health was a serious concern. "In 1908, following the recommendation of the Mixed Sanitary Commission, it was decided to establish a hospital with a capacity of 10,000 beds in Tabuk."[40] Tabuk was an important Hejaz Railway station.

Geopolitics and the strategic importance of the Hejaz Railway played a part even here. International concern over cholera and its quarantine "was used as a means of continuous surveillance on the Hijaz Railway, particularly by countries such as Britain, France, and Russia, who feared damage to their interests on the railway."[41]

4 Conclusion

The footprint of the Arab Revolt in southern Jordan between 1916 and 1918 is the archaeology of momentous historical events – imperial Ottoman collapse, short-lived British colonial replacement, followed by national independence for (the newly-created countries of) Jordan, Syria, Israel, Iraq, and Saudi Arabia. The legacies of these events remain as volatile and deadly today as the events themselves a century ago.

37 Robert Pollitzer, Satya Swaroop, and William Burrows, *Cholera* (Geneva: World Health Organization Monograph 43, 1959), 63.

38 Gülden Sariyildiz and Oya Dağlar Macar, "Cholera, Pilgrimage, and International Politics of Sanitation: The Quarantine Station on the Island of Kamaran," in *Plague and Contagion in the Islamic Mediterranean,* ed. Nükhet Varlik (Amsterdam: Amsterdam University Press, 2017), 243–274.

39 Ersoy, Yuksel, and Akpinar, "International Sanitary Conferences," 68.

40 Halil Ersin Avci, "British involvement and epidemic diseases during the 1908–1914 Hajj Pilgrimage: Evidence from British Documents," *London Journal of Social Sciences*, no. 5 (2023): 14; Özyüksel, *The Hejaz Railway*, 119, 149, 183.

41 Avci, "British involvement and epidemic diseases," 17.

The Great Arab Revolt Project investigated the landscape of these events – a landscape at the edge of empire, and at the end of empire – a landscape of military actions, and different kinds and levels of memory, which over the intervening 100+ years, have become a complex palimpsest of overlying and interleaving features. By 2014, it was possible to identify the following:

- the pre-railway Hajj routeway and associated above and below ground features.
- the remains of original Hejaz Railway stations, embankment, and line, and over 100 tented construction camps built by and for the labour battalions who created the railroad and its infrastructure here in 1905–6.
- evidence of new Ottoman defensive counter-insurgency features at stations and in the surrounding landscape to counter the guerrilla threat of Arab/British raids after the 1917 fall of Aqaba.
- evidence of destruction wrought on the above during the late Arab Revolt of 1917–18.
- remains of the short-lived reconstitution of the railway during the 1920s, followed by abandonment, removal, and repurposing of some stretches of line from the 1930s to the 1960s.
- evidence of the extensive but abortive refurbishment of parts of the railway during the mid-late 1960s, followed by a partial revamping of some sections in 1972 to take heavier phosphate trains to Aqaba (on a new stretch of line; though this ended in 2018).
- evidence of environmental degradation of wood/trees around Rās Al-Hadīd and Al-Hiyysheh Forest, and the revitalized extraction and transportation of vast quantities of water from the Qa Disi aquifer north to Amman.
- continuing destruction of buildings and landscape features from the 1970s to the present.

It goes without saying that apart from the issues discussed above, other developments have affected this area of southern Jordan where the Arab Revolt took place a century ago. While there is no space to address these at length here, several are worth mentioning. There is little doubt that the arrival of the phosphate industry greatly disturbed the landscape adjacent to the railway and several of its original stations. During the 1970s, large stretches of rail track and embankment were re-laid, straightened, and strengthened, and modifications made to bridges and culverts in order to take the modern heavy locomotives required to carry phosphate to the port of Aqaba. Several Hejaz Railway stations were altered/repurposed to deal with the phosphate trains, not least Aqabat Hejazia which had a modern extension added to deal with loading phosphate onto the trains. Today, this chapter of the railway's life seems to

have ended, as in 2018 developments in the port of Aqaba led to cancellation of the railway contract and replacement by overland truck transport.[42]

The phosphate industry brought a new workforce into these remote areas, as did the laying of the water pipes from the Qa Disi aquifer to Amman.[43] Almost inevitably this produced damage to the surviving features of cultural heritage from the Mamluk to Ottoman periods, including the remnant infrastructure of the Hejaz Railway. This infrastructure had also been randomly damaged for decades by those who sought to obtain and recycle good quality building stone and increasingly also those who cratered the landscape with gold-digging holes and bulldozed remote buildings for the same reason. Apart from Nabatean/Roman Petra, tourism in the GARP research area currently remains limited to small special interest groups (mainly concerned with railways and/or T.E. Lawrence), though a revitalized use of the railway for sightseeing cannot be discounted in the future.

The overall result of our work was to throw critical analytical light on the course and events of the Arab Revolt in southern Jordan, and to show how such interdisciplinary research could reveal hitherto unknown dimensions of the conflict, post-imperial collapse, and create a record of fast-disappearing physical remains.[44] It also offers the first archaeological investigation of what a modern guerrilla landscape looks like. Together, these issues combine to teach us about the world of modern conflict and its consequences, and the human stories embedded within it.

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43 Saunders, *Desert Insurgency*, 335, note 86.

44 Saunders, Nicholas J. East of the Jordan: Curating and forgetting the First World War and Arab Revolt along the Hejaz Railway. In, Paul Cornish and Nicolas J. Saunders (eds.), *Curating the Great War* (London, Routledge, 2022), pp. 107–127.

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Index

Italics indicate the reference is to an image.

Abdulhamid II, Sultan 363, 368–369
agricultural shortages, effects on nature of 80–81, 85–86, 88, 91
air
  contamination of 211, 265–266
  militarization of 210–211
Alexander, Prince of Serbia 180
Alexandra Fyodorovna, Empress 180
Al-Hiyysheh Forest 374–375, *376*
All Quiet on the Western Front (Remarque) 50
Angetter-Pfeiffer, Daniela 147–148
animal behaviour, changes to 90–91
animal history 14, 128–130
animals
  anthropomorphization of 127, 128, 270
  attitudes towards 127, 129–130, 143, 270, 285
  as combatants 19, 127, 211–212, 270, 285
  burial of 130, 132, 269–275
  demobilization of 137, 284–288
  diseases among 131, 133, 134, 136
  emotional transference and 130, 141
  epidemiological threat from 127, 130–132, 137
  hides of 271, 274–275
  manure from, processing of 130–131
  photographs of 128, 142–143
  portrayal of 140–143
  as resource 127, 270, 285–286, 288
  slaughter of 130–131
  as victims of warfare 19, 127, 133–134, 140–142
  See also cattle; dogs; horses
anopheles mosquito 175
anti-vaccination narratives 19–20, 151–160
Anthropocene 3–5, 17, 18, 24, 33, 51–52, 280
anthropomorphization
  of animals 127, 128, 270
  of natural elements 1, 48
Aqabat Hejazia Station, Hejaz Railway 369, *370*, 371, 378
Arab Revolt 23–24, 359–379
archaeology of British-Arab actions in Jordan 359–379
Artamonov, General 183, 189–190
Aryamov, Ivan 141
atmoterror 3
Austro-Hungarian army
  memorialization of the fallen and 292–327, 335–336
  military healthcare narratives of vaccination and 145–168
  mountain warfare and 57–74
  Przemyśl fortress and 197–218
Austro-Prussian War of 1866 58, 60

Balck, Hermann 114–1115
Balkan Wars 11, 20, 145, 174, 175, 176, 178, 182, 184, 192
Barbusse, Henri 36
bark beetle 85–86
Barthes, Roland 245
battlefield archaeology 34, 359–379
battlefield recovery 267, 273, 275–279
battlefield sanitation 268–279
Bazar, Anton 342
Bedouin raiding tactics 359, 360, 362–363, 364, 365, 367, 372
bees, warfare and destruction of 86–87
beetle infestations 85–86
belt fortresses 200–203
Belyaev, Mikhail 112
Berthelot, Henri Mathias 111, 112
Bialowieża Forest 92
Biernat, Józef 87
Bismarck, Otto von 58
bison, impact of environmental damage on 92
Blackbourn, David 42–43
black grenade 280
Bleeker, Bernhard 312*n*20, 324
Bobrinsky, Georgiy 100, 276, 277
Bobrzyński, Michał 97
Bolotte, Marcel 174
Bonch-Bruyevich, Mikhail 137, 272, 285
Boruch, Mikołaj 87
Boryslav oil refinery, Galicia 95, 103–104, 107–109, 119

Brandner, Adam von 316*n*25
Brantz, Dorothee 8, 129
Brataniec, Marcin 311
Brataniec, Urszula 311
Braudel, Fernand 37
Brenner line 62
Brenta River 58, 60
Brest-Litovsk, Peace Treaty of, and maintenance of war graves 11, 336–338
Brixen fortress 61
Brno Central Cemetery 342
Broch, Rudolf 297*n*6, 301*n*10, 305, 306, 311, 314, 318, 323
Broda, First Lieutenant 314
Brusilov, Alexei 104
Brusilov offensive 101, 276, 330, 338
Brynskyi, Mykhailo 341, 342
Bukovina
  militarization of animals in 127–144
  military cemeteries in 343–345
  Russian army occupation of 99–100
Bulgarian army on the *front d'Orient* 173, 174, 176, 191
burial
  of animals 130–132, 269–275
  of soldiers 269, 271, 273–275, 292–294
    equality of 326, 334–335, 336
    peace treaties and maintenance of graves 337, 346
  of soldiers versus animals 269–270, 273
  See also commemorative landscapes in Galicia; memorialization in Ukrainian lands
Buzău county, Romania, oil production in 95, 111, 116

Calcan, Gheorghe 117
Caldonazzo 60, 63, 65, 67, 71
capitalocene 4
cattle 19, 130, 131, 211–212
cavalry, use of on the Eastern Front 127, 128, 130, 133, 134, 135, 136, 142
cemeteries. *See* commemorative landscapes in Galicia; memorialization in Ukrainian lands
Cemetery Hill, Gorlice 314, *315*, 325
Cemetery of Heroes, Chernivtsi 345
Chakrabarty, Dipesh 3
Chamov, Nikolai 102*n*25
Chekhov, Anton 271
chemical weapons. *See* gas attacks
Chernivtsi, military cemeteries in 343–345
cholera
  causes of 148–149
  deaths from 149, 156–157
  Hejaz Railway and 376–377
  pandemics of 148*n*18, 164, 176
  sanitary measures against 152, 156, 158–159
  symptoms of 148, 166
  treatment for 166
  vaccination against 19–20, 145–168, 237
churches as memorial architecture 335, 340–341
cinematic propaganda 179–180
Cities of the Empire during the Great War and Revolution (Miller and Chernyi) 11
civilizing mission, health efforts as 20, 173, 177–186, 191–192
Civil War, Russian 289
Cohen, Aaron J. 265, 269
colonial perspectives on the East 19, 155–156, 177–178
colonial troops on the *front d'Orient* 191–192
commemorative landscapes in Galicia 22–23, 292–327
  artists/architects of 295–296, 298–299
  competition for designs for 296, 315–325
  concept of visibility in 311–312
  design of 293, 295, 297, 301–312
  districts for 295, *296*
  diverse landscapes, role of in design of 297, 300, 301, 302, 310, 311
  Gorlice, monument to battle of 311–326
  as imperial legacies 310–311
  organization of 294–296
  regulations for 300–301
  See also memorialization in Ukrainian lands
conflict landscapes 13, 22, 23, 34–35, 202, 352, 359–360
contaminated landscapes, concept of 3, 16
  See also decontamination of land; pollution of the environment
convalescence
  of horses 135–136
  of soldiers 179, 180, 185–191

Corvisy, Didier 182
Cossacks, horses and 271, 287
Crimean War 176
cultural landscape
  changes to caused by refugeeism 229–230
  creation of cemeteries as part of 292–327
  war landscape as 34, 50–51, 197
Czechoslovak Republics, WWI
    memorialization in 338–343

Dąbie prisoner of war camp 314
Dâmbovița county, Romania, oil production in 95, 111, 116
danger zones 13, 38, 44
Darb al-Hajj al-Shami. *See* Hajj pilgrimage route
decontamination of land
  from effects of chemical weapons 281–282, 284
  sowing of crops and 269, 275
Decree on the Assistance of Refugees 224
deer, effects of warfare on 89, 90
demilitarization
  battlefield sanitation 268–279
    cemetery creation as part of. *See* commemorative landscapes in Galicia; memorialization in Ukrainian lands
  decontamination from effects of gas attacks 281–282, 284
  demobilization of animals 137, 284–288
  recultivation of soil 275–279
desert warfare 23–24, 359–379
  defence and exploitation of resources in water 368–373
    trees and wood 373–376
destruction
  of landscape/nature
    as continuation of industrialization 5, 33, 43–46, 52
    perceptions of 36, 43–51, 214, 217, 232–233
    totalization of warfare and 36, 198–199, 208–209
    trench warfare and 80, 82
  of resources 5, 18, 33, 52, 77–92, 95–96
  See also bees; fauna; fishing; forests; hydraulic engineering; oil resources; orchards; scorched earth tactic; soil
Dietrich-Daum, Elisabeth 146*n*10, 148, 150–151, 167*n*95
Die Westgalizische Heldengraeber aus den Jahren des Weltkrieges 1914–1915 (Broch and Hauptmann) 297*n*6, 301*n*10, 305, 306, 311, 314, 323
Diterichs, Mikhail 172, 176. 186, 188
Dix, Otto 47, *48*
Dniester River 200
dogs
  casualties among 138
  as combatants 19, 139
  and handlers 139–140
  and horses 137, 139
  mixed breeds, attitudes towards 138
  uses of 127, 137, 138–139, 270
dog sleds 138–139
Doughty, Charles 362
Drohobych oil refinery 95, 100–101, 103–104, 107–109
Droysen, Johann Gustav 35, 38
Duguet, Firmin 176

Eastern Rite Christian inhabitants of Poland, repression of 349–350
economic impacts of warfare
  damage to nature and 79–81, 86
  destruction of oil and 106–107, 108–109, 116–117
  restrictions imposed by fortification and 69–70
ecosystem, changes to
  animal populations and 18, 86–90, 92, 134
  Anthropocene and 1–3, 7–8
Edelmann, Thomas 148
Elisabeth, Queen of Belgium 180
Emtsev, Timofey 234
environment
  as challenge 20, 39, 172–192
  concept of 14–15, 38–39
environmental awareness in military actions 198–199, 217, 272, 275, 285–286, 289–290

environmental damage
demilitarization and 265–268
battlefield sanitation 268–279
gas attacks 279–284
military asset preservation 285–287
recovery of land 267, 273, 275–279
destruction of oil resources and 106–107, 109, 117, 118, 119–120
to forests 18, 81–86, 92, 215, 373–376
as subject of photography 255, *256*, *257*, 258
Environmental Histories of the First World War (Tucker, Keller, McNeill, and Schmid) 2, 8
environmental history 6–14, 34, 39, 78
methodology 14–17
environmental turn, the 289–290
environment versus landscape 15, 39
epidemiological threat
burial and 269, 271–272, 274, 294
contamination of air and 211, 265–266
from animals 271–272, 274
hygiene measures and 22, 39–40, 145, 152, 156, 159, 161, 165
refugees and 237
vaccination and 19–20, 145–168, 237
See also cholera; malaria epidemic on the *front d'Orient*
equality of fallen soldiers in burial 326, 334–335, 336
Estorff, von, Colonel 319
"Europe on the Move: The Great War and Its Refugees, 1914–1918" 223
evacuation
of civilians 70–71, 86, 221–238
of sick and injured soldiers 174–177, 185–192

Fassu'ah, Hajj fort 369, *370*, 371
fauna, warfare and damage to 88–92
February Revolution 190, 226, 283, 335
Febvre, Lucien 37–38
Festungs-Rayongesetz 69–70
Fetisov, Petro 335
fishing, warfare and damage to 88
Flynn, Jane 270
Foams: Plural Spherology (Sloterdijk) 2–3
Folgaria plateau 58, 60, 62
forests, warfare and damage to 18, 81–86, 92, 215, 373–376
foot-and-mouth disease 131
fortifications in the Italian Alps 61–63, *61*
fortresses. *See* belt fortresses; Przemyśl fortress; Trento fortress
Fournial, Henri 183
Franz Joseph, Emperor 200
Fraternal Cemetery, Kyiv 334–336, 338
Frémicourt, Dr 175–176
French army on the *front d'Orient* 173, 174, 176–178, 186–189
as civilizing mission 178, 180, 182–184
Russian army subordination to 173, 186–187, 189
Freud, Sigmund 279
Freunthaler, Eduard 204, 207, 211, 214, 216
Fricca pass 63
front d'Orient, medical and humanitarian efforts on 20, 172–192
"frontality" of the landscape 39

Galați oil plant 116
Galicia
demilitarization of landscape in and toxic heritage 265–290, 255–258
destruction of nature in 77–92, 197–218
destruction of oil resources in 95–109
epidemiology in 145–168
exploitation of by Russian army 99–101, 247, 249
importance of to Russian Empire 243
militarization of animals in 127–144
military cemeteries and monuments in 292–327
photography of combat landscapes of 241–259
strategic importance of to Austro-Hungarian army 199–200
Galicia and Lodomeria, Kingdom of 77*n*4
gas attacks
decontamination of territories affected by 281–282, 284
effects of 8–9, 279–284
horses and 142, *256*, 258, 284, 286
WWI as first use of 8, 279, 280
gas masks 142, 283
Gatrell, Peter 222
geochemical war signature 5
German wish to be part of the Austrian memorial landscape project 294, 319–324, 326

Glogar, Maximilian 314, 325
Godart, Justin 180
Good-Bye to All That (Graves) 36
Goremykin, Ivan 277
Gorlice, monument to battle of 23, 294, 311–326
Gorlice offensive 101, 103, 292, 312
Graves, Robert 36
Great Acceleration, the 3
Great Arab Revolt Project (GARP) 360, 363–379
Great Retreat of 1915 96, 101, 103, 251, 273, 274
guerilla warfare 23–24, 359–379
Gulf War, damage to oil resources during 113, 117
Günther, Max 319
Gurko, Vasily 234

Hajj pilgrimage route 360–365, *362*, 369–373, 376–378
Hallat Ammar ambush 365–367, *367*
hares, changes to populations of 88, 89
Hauptmann, Hans 297*n*6, 301*n*10, 305, 306, 311, 314, 323
health propaganda 20, 179–180, 184
Hejaz Railway 359–379
  Bedoiun threat to 365
  cholera epidemics and 376–377
  need for wood for and damage to forests 373–376
  and phosphate industry 378–379
  water and route of 368–369, 371–372
Hentke, General 318–319
Hitler, Adolf, WWI experience of 50
hockey stick curve 3
Horne, John 177
horses
  bond between humans and 270–271
  burial of 132–133, 270–274
  as combatants 19, 127, 134
  demobilization of 137, 284–289
  dogs and 137, 139
  elite breeds of 134
  as epidemiological threat 130–133, 136, 137
  as food 128, 141, 215
  gas attacks and 142, *256*, 258, 284, 286
  infection in 136, 272
  mass death of 133–134, 137, 140–141, 142
  medical treatment of 135–136
  numbers of 133–134, 136
  photographs of 142–143, *256*, 258
  portrayal of 140–143
  rehabilitation of 135–136
  selling of 287
  shortages of supplies for 134–136, 211, 287–288
  slaughter of 132, 213, 215
Hosaeus, Kurt Hermann 321–324, *322*
hospitals. *See* show hospitals
Hötzendorf, Franz Conrad von 60, 201, 205*n*24, 217
Hüppauf, Bernd 245
hydraulic engineering, warfare and damage to 91

imperial debris 2, 6, 16, 23, 359, 360
imperial legacies, cemeteries in Galicia as 310–311
industrialization, WWI as continuation of 1–2, 33, 51–52
insects. *See* pest infestations, damage to forests from
In Stahlgewittern (Jünger) 36
Intercession Orthodox Church, Zakarpattia 340–341
Italian Alps, warfare in 57–74
Ivanov, Nikolai 100, 275, 276–277

Jablonné v Podještědí, war memorial in 341–342
Jabłońska, Helena z Seifertów 204, 207
Jäger, Johann 298, 303, *304*
Janin, Maurice 119
Jarosław 104, 131, *251*
Jewish graves 339, 345
Johann, Archduke 200
Jordan, desert warfare in 359–379
Jünger, Ernst 36
Jurkovič, Dušan 298, 302, *303*, 306, 317–318, *318*

Kahl, V., Consul-General 184
Kaiserjägerstrasse 63, 65
Kálmán, Tulics 107–108
Kargol, Tomasz 108
Kasiyan, Vasyl 343
Katkov, Kirill 341
Keller, Tait 8, 33, 267

KGA-Krakau (Kriegsgräberabteilung Krakau) 293–327
KGI-Lemberg (Kriegsgräberinspektion Lemberg) 294, 301
KGI- Przemysl (Kriegsgräberinspektion Przemysl) 294, 301
Kharkiv 225, 226, 228, 230, 232, 233, 234, 236, 267
Kherson 226, 232, 234
Knox, Alfred 283
Kolchak, Alexander 110
Kolomatskii, Vsevolod, Archpriest 341
Kolpiec oil refinery 100, 106, 108
Krause, Friedrich 141–142
Kravkov, Vasily 272–273, 276, 284, 286
Kulish, Mark S. 335
Künigl-Ehrenburg, Ilka 203–204, 207, 208, 211, 213, 214, 215
Kusmanek von Burgneustädten, Hermann 205, 209
Kyiv Fraternal Cemetery 334–335, 338

Laakkonen, Simo 13
Ladewig, Emil 299, 307–308, *309*, 316, 317–318, 320, *320*
Lajus, Julia 4
landscape
  as actor 202–203
  concept of 15, 18, 35, 41–42, 53, 197
    versus environment 15, 18, 38–39, 42
    versus terrain 15, 18, 38–39, 41
  destruction of
    as continuation of industrialization 5, 33, 43–46, 52
    perceptions of 36, 43–51, 214, 217, 232–233, 267
    totalization of warfare and 36, 198–199, 208–209
    trench warfare and 80, 82
  historiography on 9–12, 35–38
  multi-layeredness of 9, 13–14, 38–42, 244, 322
  perceptions of 8, 21, 36, 43–51, 198, 207, 209, 215, 217–218, 251
  and remembrance of war 34, 36
  soldiers' experiences of war and 9, 34, 41–51, 173–175, 191–192, 207
  transformation of 21, 34, 51–52, 57–74, 217, 229–230, 267
  See also commemorative landscapes in Galicia; conflict landscapes; contaminated landscapes; memoryscapes; warscapes
Landscapes of the First World War (Daly, Salvante, and Wilcox) 9
Langthaler, Ernst 4
Lannik, Leonty 10
Lavarone plateau 58, 60, 62
Lawrence, T. E. 359, 360, 365, 367, 371, 376, 379
Lawrence of Arabia 365
layered landscapes 9, 13–14, 38–42, 244, 322
Lazari, Alexander de 280–281
Lean, David 365
Lebedev, State Councillor 138
Lefebvre, Henri 37–38
Le Feu (Barbusse) 36
Lehnstaedt, Stephan 12
Leidinger, Hannes 11
Lemberg 131, 132, 199, 292, 294, 301, 346–348, 350
Lenin, Vladimir 338
Leontiev, General 188–189
Leontiev, N. P. 341
Lermontov, Mikhail 271
Le Service de santé militaire 1914–1918 (Duguet) 176
Levico 60, 66, 71, 73
Lewin, Kurt 12–13, 38–39, 44–45, 119
Lindee, Susan 279
Liulevicius, Vejas Gabriel 10
Lloyd, Fred 286, 288
logistics of mountain warfare 57–74
Lorey, Hermann 111
Ludendorff, Erich von 233
Ludwig, Gustav 299, 309, 316*n*25, 318, 319–320, *320*
Lukomsky, Alexander 119
Luserna plateau 58, 60
Lutsk, military cemeteries in 347
Lutsyk, Oleg 350
Luz, Wilhelm August 39
Lviv. *See* Lemberg
Lychakiv Cemetery 346, 348–350
Lysonia, Mount 348–349

Macedonian front, environmental challenges of 20, 172–192
Maioffensive 67, 70

Makivka, Mount 348–349
malaria epidemic on the *front d'Orient* 20, 172–192
evacuations due to 175–177, 185–191
losses from 176, 177
Maldovan, Julius 160
manoeuvre warfare, effects of on environment 6, 44, 45,127
Marie, Queen of Romania 180
Markovsky, Georgiy 100
mass death as subject of photography 142–143, 252, 254, 259
Massie, Christopher 270
Matscheko von Glassner, Michael 298, 306
Mavrin, Alexei 224
May beetle 86
Mayr, Hans 298, 304–305, *305*, 311–312, *313*, 324
Mazura, Franz 299, 316
mechanization of armies 19, 57, 127, 133, 136
medical learning processes regarding vaccination 145–168
medical modernization and WWI 146*n*10, 164
Meiske, Martin 4–5
memorial architecture
churches as 335, 340–341
design of military cemeteries 292–327
memorialization in Ukrainian lands 330–352
burials of soldiers of different faiths and 339–340, 345
competition for designs for 334, 343
destruction of 335, 351
maintenance of graves and 337, 346, 347
war memorials 333, 340, 341–343, 348–350
See also commemorative landscapes in Galicia
memoryscapes 16–17, 331, 332, 351, 352, 360
Michaelsburg, Ilka von. *See* Künigl-Ehrenburg, Ilka
Middle East, conflict in the 359–379
militarization of animals 127–144
See also dogs; horses
militarized landscapes 1, 13, 19, 20
logistical infrastructure creation in Italian Alps 57–74
benefit to civilians of 65, 69, 73
negative effects of for civilians 69–73
railway lines 62, 65
roads 62–63, *63*, 65
ropeways 66–67, *66*, *68*
telephone cables 63, *64*
tourism and 62, 69, 70, 73
photography of 241–259
Przemyśl fortress 197–218
military medicine
conflict of with military interests 148, 149, 162, 167–168
ethical issues of 146*n*10
vaccination 145–168
Mircescu, Major 114
Misky, Ludwik 316*n*27
Modrycz oil refinery 105–106, 108
Monterovere 63, 65, 67
Moore, Lucinda 288
mosquitoes, malaria and 175, 190
Mosse, George L. 35–36
Motka, Robert 299, 308–309, *310*, 315, *315*, 316, *317*
mountain warfare 57–74, 175
Mudawwara Station, Hejaz Railway 363, 367, 369, 372
Müller, Anton 298, 306, 321, *321*, 323
Muslim graves 339, 345, 347
mustard gas 280
See also gas attacks
mythical landscape, war landscape as 45, 47–49

Narischkine, Princess 179–180, 185
Natural Enemy, Natural Ally: Toward an Environmental History of War (Tucker and Russell) 7
natural resources
destruction of 5, 18, 33, 52, 77–92, 95–96
exploitation of 5, 6, 18, 33, 84, 88
See also bees; fauna; fishing; forests; hydraulic engineering; oil resources; orchards; soil
nature
as adversary 1, 2, 3, 39, 243
perceptions of 288
See also landscape, perceptions of
as victim of war 1, 2, 5, 6, 8, 18–19, 20–21, 33, 77–92

nature (*cont.*)
See also landscape, destruction of; natural resources
versus environment 14–15
Nelipovich, Sergei 96
Nikolaevich, Nikolai, Grand Duke 277
Niš 181
Norton-Griffiths, John 112–118
Novojilov, Lieutenant 189
Nübel, Christoph 15, 119, 266

occupation practices, historiography on 9–11
oil resources
destruction of
by Entente armies 95, 96, 111–116, 118
by Russian army 95, 96, 100–110, 118
compensation for 96, 114, 115, 117
economic impact of 106–107, 108–109, 116–117
environmental effects of 106–107, 109, 117, 118, 119–120
extent of oil losses 107, 110, 113, 116
procedures for 105, 113–114
sabotage of by civilians 105–106
exploitation of 97, 99–101
production of, fires and 98
Olomouc-Černovír cemetery 295
orchards, warfare and damage to 81
Oskin, Maksim 133
"Osnovianenko, To" (Shevchenko) 341–342
Ostrogradsky, Alexander 100–101, 108–109, 118
Ożarowska, Oktawia 81

Paltauf, Richard 153–156, 161–162
Peeples, Jennifer 16
Pergen, Count 199
pest infestations, damage to forests from 85–86, 92
Philippon, Lieutenant 112
photography of wartime
animals as subjects of 128, 142–143
censorship of 242
environmental damage as subject of 255, *256*, *257*, 258
historiography on 244–245
mass death as subject of 142–143, 252, 254, 259
as means of processing wartime experiences 241, 245, 252, 254
memorial culture and 244, 254, 259
military equipment as subject of 254–255, *256*, *257*
as military propaganda 22, 179, 180, 184, 241, 242, 243, 247, 249, 250
as travelogues 22, 241, 249–251, 259
and visual construction of militarized landscapes 21–22, 241–259
Pirogov, Nikolai 285
plague 137, 176, 211
Ploiești, destruction of oilfields of 112, 114–116
Poland, Eastern Rite Christian inhabitants of, repression of 349–350
Poland, Kingdom of 77, 92, 230, 292
polar dogs, use of in warfare 139
Poledne, Franz 316*n*27
polemosphere 13
Polish refugees 222, 224, 227, 229
Polish Republic, Second, memorialization in 345–350
Pollack, Martin 16
pollution of the environment
of air 211, 265–266
chemical weapons and 8–9, 279–284
military equipment and 7, 9, 255, *256–257*
from oil production 97, 119
of soil
burial and 268–274
decontamination of 281–282, 284
Pöppinghege, Rainer 130
positional warfare 33, 40, 44, 139
Prahova county, Romania, oil production in 95, 111, 113, 114
propaganda
health initiatives and 20, 179–180, 184
war photography as 22, 179, 180, 184, 241, 242, 243, 247, 249, 250
Protasiev, Nikolai 232
Przemyśl fortress 20–21, 197–218, *206*
construction of 200–202, 204, 207, 217
desertions from 213
horses at 128, 132, 141, 213
preparation for siege of 205, 207, 213
reflections on in diaries 198, 203–204, 207, 209, 211, 213–215, 217–218
sanitary conditions of 201–202

Przemyśl fortress (*cont.*)
shortages at 213– 215
siege phases of 209–210, 212–217, 292
Pustovoytenko, Quartermaster-General 116

railways as military infrastructure 62
Ras Al-Hadid 375
Ratzel, Friedrich 37
recultivation of agricultural land in Galicia 275–279
refugeeism in WWI
emergence of 221, 222–224, 229, 238
historiography on 222–223
refugees in Ukrainian territories 24, 221–238
changes to landscape caused by 229–230
deaths of 234–235
epidemics and 237
ethnic characteristics of 226–228
experiences of, reflections on 224, 230, 232–233
gender dimension of 224, 226–227, 238
housing of 237
medical care for 236–237
movement of 230–232
normalization of 227
numbers of 225–226
orphans among 235
perceptions of 224–225, 227, 228
provisioning of 235–236
and social conflict with local populations 237–238
Remarque, Erich Maria 50
remilitarization of Eastern Front 267, 289
Renes, Johannes 13, 244
resource
animals as 127, 270, 285–286, 288
combatants as 161, 289
resources, natural
destruction of 5, 18, 33, 52, 77–92, 95–96
exploitation of 5, 6, 18, 33, 84, 88
See also bees; fauna; fishing; forests; hydraulic engineering; oil resources; orchards; soil
Ritter, Joachim 41
Robertson, Lieutenant General 112
roe deer, changes to populations of 88, 89, 90
Romania, Kingdom of, memorialization in 343–345
Romania, oil resources in
destruction of 95–96, 110–120
exploitation of 97–99, 102–103, 110
ropeways 66–67, *66*, *68*
Rossmann, Gustav 295, 298, 306, *307*
Roumanian Consolidated Oilfields Ltd. 96, 114, 118
Ruprechtice Military Cemetery, Liberec 343
Russell, Edmund 7
Russian army on the *front d'Orient* 172–192
disease epidemics and 185–186
disciplinary issues 189–191
evacuation of convalescents 175–177, 185–191
health efforts of as civilizing mission 20, 173, 177–185, 191–192
health propaganda of 179–180, 184
losses of 172, 176–177, 185
malaria and 172–192
sanitary measures against disease and 185–186, 189–191
subordination of to French army 173, 186–187, 189
Russian Civil War 289
Russian demilitarization in Galicia 265–290
Russian memorialization in Ukrainian lands 332–335, 337–338, 351
Russian military photography 241–259
Russian Orthodox Church, burial rituals of 274
Russian Red Cross 181, 182, 183, 186
Ruszała, Kamil 223
Ruthenians, repression of 21, 349–350
Rykov, Valerian 335
Ryllo, Pyotr 347

Salonika 173, 175, 177, 181, 182, 184, 185, 188, 189, 190
Saint–Germain, Treaty of 337, 344
San River 200
Sanborn, Joshua S. 183
Sandomierz Forest 83, 85, 92
sanitary procedures
against disease 22, 39–40, 145, 152, 156, 158–159, 161, 165, 185–186, 189–191
burial 133, 254, 269–275

sanitation of battlefields 22, 268–279
burial 268–274
decontamination from effects of gas attacks 281–282, 284
sowing of crops 269
Sarrail, Maurice 172, 176
Saunders, Nicholas 13, 244, 265–266, 331–332, 352
Scale, Major 115, 118
schicksalsgemeinschaft 8
Schlieffen, Alfred Graf von 40
Schnell, Felix 22
Scholz, Heinrich Karl 299, 306–307, *308*
scorched earth tactic 2, 17, 82, 224
See also oil resources, destruction of
Segesser, Daniel Marc 15
Sękowa cemetery 304, *305*, 312, *313*, 314, 319, 324, 325
Selivachev, Vladimir 107
Serbia, Russian military health provision in 181–182
Serbian army on Macedonian front 173
Sergent, Edmond 177
Sergent, Étienne 177
Seven Pillars of Wisdom (Lawrence) 360, 365, 371
shell craters as icons of war landscapes 46–48, *47*, *48*, 51, 275–276
Shiskevich, Mikhail 116
show hospitals, Russian 179–184
Sich Riflemen, Legion of Ukrainian, memorials to 341*n*30, 342, 348–349, 352
Sitowski, Ludwik 85
Skoropadsky, Pavlo 222, 337
Sloterdijk, Peter 2–3
smallpox 136, 157, 181, 237
Smith, Aubrey 270
Smith, Corinna Haven 267
Sofoterov, Sergei 181–184
soil
damage to 5, 7, 18, 79–81, 82, 92, 98, 119, 255, 265, 268, 272
decontamination of 281–282, 284
recultivation of 275–279
types of recommended for burial 274, 275
Sontag, Susan 245
spatial analysis of war 15–16, 35–43, 51, 53, 244, 266
spatial determinism 43
spatial layers 38–42
spatial turn, the 15
Staff, Leopold 233
Stark, Franz 299, 309
Staszkówka cemetery 306, 321–322, *321*, *322*
Steffen, Will 3
St George's Church, Cherkasy 335
St Nicholas the Miracle Worker Memorial Church, Fraternal Cemetery, Kyiv 335
Stoler, Ann 2
Strafexpedition 67
St Theodosius Church, Lutsk 347
Szczepkowski, Jan 298, 302, 305–306

Talalaev, Vladimir 341
Tarnowski, Zdzisław 83
technocene 4
Tęcza łez i krwi (Staff) 233
Tempest, Gene 133, 140
terrain
as challenge 20, 172–175, 180, 191, 192, 210, 216
as strategic advantage 210–212
versus landscape 40–41
Thalerhof Committee 350
Thalerhof internment camp, memorial to victims of 350
Theresienstadt internment camp 350
Third War of Independence, Italian 58, 60
Thomson, Colonel 111, 112
tipping/turning point, WWI as 1, 5, 128
Tolstoy, Alexei 140
Tolstoy, Leo 271
Tomann, Josef 141, 203, 214–216
Tooze, Adam 289
totalization of warfare 119–120, 198–199
Toter Krieger (Bleeker) 324
tourism, military infrastructure and 62, 69, 70, 73
transformation of landscape 21, 34, 51–52, 57–74, 217, 229–230, 267
Traskin, Ilya 234
trees
as part of mythical landscape of war 48–49
See also forests, warfare and damage to
trench warfare 13, 39–40, 79–80, 82
Trentino 57–74, *59*

Trento fortress 60, 61, *61*, 70
Triple Alliance 58
Trubetskoi, Prince 181
Tułaczy los: Uchodźcy polscy w imperium rosyjskim w latach pierwszej wojny światowej (Korzeniowski, Mondzik, and Tarasiuk) 222
Tustanowice oil wells 98, 103, 108–109, 119
typhoid 77, 145, 153, 154–155, 161, 162, 166*n*91, 177
typhus 176, 177, 181, 237, 277
Tyrol, mountain warfare in 57–74
Tyrowicz, Ludwik 350

Ukrainian Galician Army, memorials to the fallen of 341–343, 348–349, 352
Ukrainian lands
  memorialization in the interwar period 330–352
  refugees in 221–238
Ukrainian State 222, 336–337
unintended colonialism 177–179
Uzhhorod 339, 340

vaccination
  against cholera 145–168, 237
  against smallpox 157, 237
  against typhoid 153, 154–155, 237
  disagreement about the value of 19–20, 145–168
  effectiveness of 163, 164*n*83
  of civilians 157*n*59, 160–161
  of refugees 237
  safety of 155, 156, 157, 159–160
Valya Kuzmina international cemetery 344
Valsugana valley, military infrastructure in 57–74
Versailles, Treaty of, and maintenance of war graves 337, 338
veterinary service of Russian army 131–132, 135
Vienna, Congress of 77*n*3
Viet, Vincent 187
visual turn, the 244
volcanoes, as comparator for war landscapes 46
Volhynia 267, 347
Volyn 231, 232, 235, 236

Wagner, Otto 312
Waitzendorfer, Karl 208, 213, 215
War and the Environment: Military Destruction in the Modern Age (Closmann) 7
War Land on the Eastern Front: Culture, National Identity, and German Occupation in World War I (Liulevicius) 10
war memorials in Ukrainian lands 333, 340, 341–343, 348–350
  See also commemorative landscapes in Galicia
warscapes 33–53, 244–245
  as cultural landscape 34, 50–51, 197
water
  defence and exploitation of in desert warfare 368–373
  militarization of 212
Watzal, Johann 299, 307–308, *309*
Western cultural superiority 19, 155–156, 162*n*73, 178, 180, 182–184
Western Front
  differences in war on compared with other fronts
    Eastern Front 11, 127, 242, 267, 280
    front d'Orient 177
    Middle East 359
  focus of historiography on 2, 6, 8–9, 12, 24
West Ukrainian People's Republic (ZUNR), memorials to the fallen of 341, 342, 348–349
Whole Empire Walking: Refugees in Russia During World War I, A (Gatrell) 222
Wilczek, Count 139
wilderness, war landscape as 49–50
wildlife, warfare and damage to 88–92
Wilhelm II, Emperor 319–321

Yaniv Cemetery 348–349
Yekaterinoslav 226, 230, 235
Yushkin, Evgeny 99

Zakarpattia 338–341, 349, 351
Zashchuk, Vsevolod 103–109, 118
Zeitenlik camp, Salonika 185, 190
Zille, Heinrich *47*, 51
Zubayr Pasha 375
Zveniachyn international cemetery 343, 344
ZUNR. *See* West Ukrainian People's Republic

This volume places the Eastern, especially the Austro-Russian, fronts of the Great War centre stage, examining the little-known environmental and spatial dimensions in the history of the war. The focus is particularly on the Austrian crown land of Galicia, which was transformed from a neglected periphery into a battleground of three imperial armies, and where for the first time, nature was a key protagonist.
The book balances contributions by emerging and established scholars, and benefits from a multi-language approach, expertise in the field, and extensive archival research in national archives.

Contributors are Hanna Bazhenova, Gustavo Corni, Yaroslav Golubinov, Kerstin S. Jobst, Tomasz Kargol, Alexandra Likhacheva, Oksana Nagornaia, David Novotny, Christoph Nübel, Gwendal Piégais, Andrea Rendl, Kamil Ruszała, Nicholas J. Saunders, Kerstin von Lingen, Yulia Zherdeva, and Liubov Zhvanko.

Kerstin S. Jobst is Professor of Eastern European History at the University of Vienna and PI of the FWF Research Group "Great War and Anthropocene", and author of several monographs and articles, focusing (among other topics) on the history of Ukraine and the history of Crimea.

Oksana Nagornaia is Assistant Professor of East European History at the Humboldt University in Berlin. She has published monographs, collected works and articles on Russian and German history.

Kerstin von Lingen is Professor of Contemporary History at the University of Vienna, and Co-PI of the FWF Research Group "Great War and Antropocene". She has published numerous articles on the military history of the First and Second World Wars, and focuses on the history of violence and war, migration studies, war crimes trials and memory discourses.

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