OBJECTS AND MATERIAL ASPECTS OF WAR

Contending with meteorological conditions in times of war in Europe during the nineteenth and twentieth centuries

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ABSTRACT

Weather conditions were often decisive in times of war. Already in the sixth century BCE, Sun Tzu emphasized in his *Art of War* the role of atmospheric conditions, which have repercussions on the health and morale of troops as well as on the conducting of military operations, prompting men and their leaders to equip themselves and plan ahead. The conflicts in modern Europe confirmed the importance of weather, in terms of how they unfolded as well as the growing awareness of this factor among general staff.

Cover of La bataille dans les neiges (Battle in the Snow), a brief account written by A. Norec for the collection “Patrie” in 1917, highlighting the “guerra bianca” on the Italian front during the Great War, and the difficulties specific to this front (collection P.-L. Buzzi).

As a result of the many conflicts in which it was the theater during the nineteenth and twentieth centuries, Europe has emerged as a singular case for the study of weather conditions in times of war, as it has multiple climates in close proximity, including oceanic, continental, Mediterranean, and mountainous. While the continent’s successive conflicts became increasingly technological, they were nevertheless dependent on the weather. Serving as both ally and enemy, and acting on the body as well as the morale of soldiers, weather conditions also had an impact on military operations, and prompted the military to equip itself and obtain the tools needed to anticipate the weather, in an effort to gain an advantage over the enemy.

Suffering: The Consequences on Combatants

The frequent mention of weather conditions in the letters of combatants demonstrates the strong impact that weather had on the health and morale of soldiers. Both cold and heat were considered as scourges, and were elevated to the rank of enemies on par with opposing armies. Certain regions that were regularly transformed into theaters of operation were closely linked with winter conditions, such that during both Napoleon’s retreat in 1812 and the Wehrmacht’s attack in 1941-1942, Russia left the invaders with a frigid and deadly memory. The cold led to a spike in circulatory, respiratory, and infectious diseases, and also caused frostbite in feet, sometimes requiring amputation.

Heat also proved highly incapacitating, as it prevented the proper functioning of regulatory mechanisms, caused dehydration and headaches, and was accompanied by the proliferation of disease-spreading insects. During the Greek War of Independence in 1829, part of the French army suffered from the fever caused by the summer heat of the Peloponnese. High temperatures tired men all the more as they often wore outfits poorly adapted to intense heat. Rain chilled the body, made clothing heavy, and weakened organisms and morale. Moreover, in transforming dirt into an ocean of mud, it made the soldier’s tasks even more arduous.

As a result, combatants sometimes found themselves in situations of acclimation, which reached its peak with troops from areas that were far from their theater of confrontation. This is why camps were established in the south of France during the Great War, to accommodate colonial troops from November to March in an effort to protect them from the harshness of winter.

Adapting: The Consequences on Military Operations

Weather conditions, which change the state of the sea, ground, and sky, also disrupt military operations. The Allied landing in June 1944 was postponed by 24 hours due to bad weather. Like the navy, the air force is particularly dependent on the weather. In December 1994, as Russia launched an offensive against Grozny during the first Chechen War, a thick fog deprived it of its air force. For ground troops, rain and thaw are the most problematic, as demonstrated by the Russian campaign during the Second World War. Beginning in October 1941, heavy rains were accompanied by the fall *raspoutitsa*, which transformed fields and roads into torrents of mud that slowed the German invasion.

However, weather events can also have positive consequences for belligerents who are able to adapt. A river often slows offensives, but a frozen one can on the contrary facilitate crossing, as was the case in the Finnish War, in

which the Russian army took advantage of the freezing of the Bothnian Bay to reach the Swedish shore on March 19, 1809, a maneuver that decided the outcome of the war. More than one army used weather to its advantage, with the Greeks for instance using wind during their War of independence to counterattack against Ottoman ships through the use of fireships. There is thus no determinism in the subject, for what is considered an advantage can also prove to be incapacitating in certain situations.

The climatic constraints mentioned by military leaders can subsequently be overestimated in order to serve as an excuse for a strategic defeat. “The roads were covered with black ice; the cavalry, artillery, and transportation horses died throughout the night not by the hundreds but by the thousands [...] our artillery and transportation lacked teams of horses”: in a few words, the *Bulletin* de la Grande Armée from December 1812 described the terrible consequences of the cold on the retreat from Russia. However, this myth of “general Winter” obscures another reality, as over a third of the Grande Armée’s forces were already out of action even before the extreme cold struck Napoleon’s troops, who had initially been weakened by illness, faulty logistics, and battles of great violence.

Preparing: The Consequences on Tactics and Techniques

Armies had to prepare for weather by solving problems relating to clothing, food, and transportation. Victorious armies were not just those exhibiting a capacity to adapt to weather conditions, but also those that knew how to take advantage of them by anticipating difficulties. The objective for the belligerent was to use weather to their advantage, by including it in their tactics through the development of specific techniques. Finns, who were accustomed to snow and were able skiers, specialized in *motti*, a tactic for encircling enemy units that helped them get the upper hand in Suomussalmi in January 1940, despite their smaller numbers compared to the Russians.

The makeup of the kit also emerged as a recurring question among general staff, without for all that being resolved in advance. For example, civilians were called on during the two world wars to produce clothing in order to relieve men from the cold, a development that reflects the lack of preparation on the part of military authorities. In addition, weather conditions prompted members of the military to take an interest in climatology, with war becoming a driver of innovation in this field. The sinking of 38 ships in the Crimean War during the storm on November 14, 1854 prompted France to develop a weather service. In the ensuing years, technological advances in weaponry made better knowledge and awareness of weather indispensable, especially for artillery, gas, and aviation. A military weather office was created in France in 1915, for the purpose of overseeing a weather observation network. Over the years stations were better equipped, military meteorologist were trained, and previsions were made more quickly and accurately.

During the twentieth century, long neglected weather conditions shifted, in the words of climatologist Pierre Pagney, from the worry of the peasant to the concern of military leaders. The rise of satellites and training in meteorology in European armies attests to the henceforth crucial role of this discipline in military science. A basic tool for an army, mastery of weather forecasts is now associated with the new quest of mastering climate and climate war, which is to say the use of techniques to modify atmospheric weather for military purposes.

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