SECTION

VII

Thinking Spatially

Mapping Cold War Canada: George Kimble's *Canadian Military Geography*, 1949

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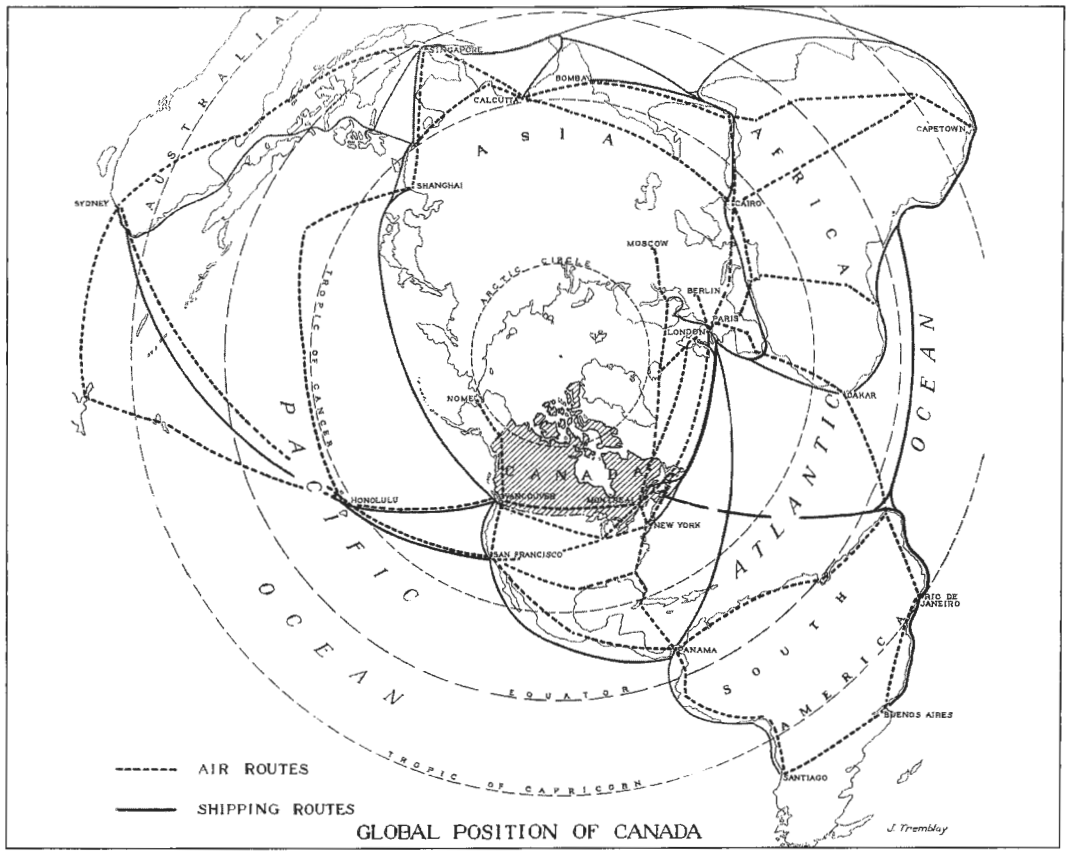
"World position" matters most, wrote geographer George H. T. Kimble, the author of the 1949 *Canadian Military Geography* (CMG)[1]: "It is this that largely decides the kinds of climate the continent has: these in turn decide broadly the uses to which the land may be put, which in their turn set the general pattern of settlement and industry. Then the location of the constituent countries with respect to their neighbours helps to fix the flow and character of overseas commerce in a time of peace, and to determine fortunes in a time of war." Turn the page, and Kimble illustrates his point (see Figure 14.1). Projecting the world with the north pole at its centre, and with Canada as the only country identified and oriented towards the reader, Kimble sketches a series of dotted and solid lines to represent shipping and air routes, connecting Montreal directly to New York, London, Paris, and, more menacingly, Berlin and Moscow. Entitled "Global position of Canada," the map represents the country as a cross-hatched, northern continental space, caught up in a world of flows and connections; the major transportation routes identified run between centres in the northern hemisphere. Few physical features appear: two oceans, the equator, the tropics of Cancer and Capricorn and, most prominently, the Arctic Circle, which lies near the map's visual centre. At the margins, Australia, Africa, and South America appear as bloated, empty continents, tenuously connected to the centre. This is the world as Kimble saw it, or as he wanted others to see it. Why he should see the world in this way, and what work that vision aimed to accomplish are what we wish to discover.

Maps do not simply summarize or represent the world as it really is; in their choice of projection, map makers distort the world and in their carefully made selections and omissions, they create it. Kimble, the chair of McGill's geography department, created a particular national and

Figure 14.1 "Global Position of Canada"



George Kimble's opening map invites readers to think about Canada's place in the world and connections to it. "World position," he claimed, determined and conditioned many of Canada's possible futures, both environmentally and politically. The cartographic style helps to reinforce some of Kimble's primary claims.

Source: George H. T. Kimble, "Global Position of Canada," Map II of *Canadian Military Geography* (Ottawa: Directorate of Military Training, 1949). Used with permission from National Defence.

world view in his geography for a military audience of officers-in-training. In 200 pages of maps and text, bound in a red cover and stamped "confidential," CMG presents one point of entry into the intellectual and cultural fashioning of environment and nation in the early Cold War. Little is known about how Kimble came to write the CMG, or how it was used by officers-in-training. Read on its own terms, however, CMG is a primer in Canadian geography highlighting physical features, resources, and industry across Canadian space. Read against the background of the early Cold War, the atlas takes on other meanings: the environment is an instrument of economic and military power; Canada's geography is at once a storehouse of potential and a vulnerable home; geographical knowledge is one element of a defensive and offensive geopolitics. For these reasons, the CMG reminds us to think hard about the context of documents, as well as their contents, and of the importance of visual evidence and maps in framing environmental ideas. This chapter

offers one way of reading CMG, of identifying its significance and of thinking more broadly about maps, the military, and environmental history.

Making Sense of Maps

Since much of what follows relates to maps or to text accompanying maps, it makes sense to begin by thinking about how maps are constructed. In my introduction I tried to provoke you somewhat by suggesting that maps are distortions and that mapmakers create the world on paper. Now let me take a few steps back from that position. Maps are distortions, but they are distortions with rules. I use the term "distortion" not to be cynical about questions of accuracy, but because it is an accurate description of what happens when we seek to represent in two dimensions what appears in real life as three. Mark Monmonier puts the problem succinctly: "Although the globe can be a true scale model of the earth, with a constant scale at all points and in all directions, the flat map stretches some distances and shortens others, so that scale varies from point to point."[2] In the best-known projection, named after the cartographer Mercator, most of this scale distortion occurs at the poles and in northern Canada and Russia; these northern land masses appear much larger than they really are relative to land masses at the equator. This does not really matter much if your main purpose is to locate, say, political boundaries or major world cities. It does become a problem, however, if you want to work out distances between places, or to plot the best flight routes from one continent to another.

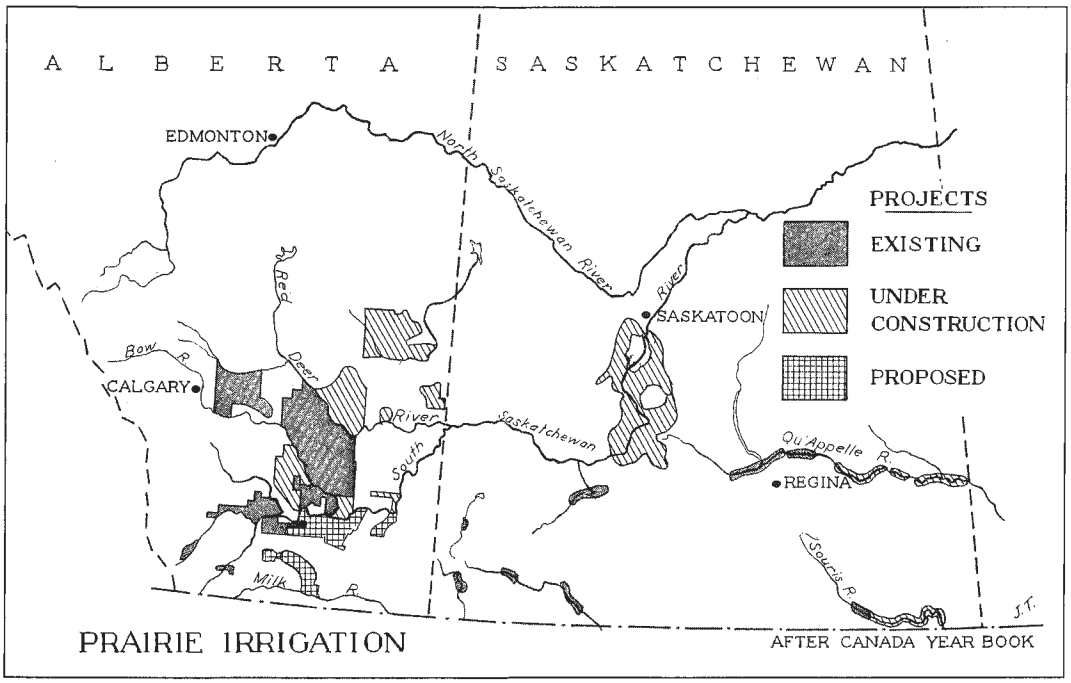
Kimble had these problems of projection in mind when he drew his "global position" map. In an appendix to the first chapter of CMG, he described his rationale for representing the world as he did. The projection he used was neither a three-dimensional depiction of the earth, like a globe, nor a conventional projection, like Mercator's, which represents the surface of the earth as flat. It was, rather, what he called a photographic projection that depicted the earth as if from a specific viewpoint. Kimble understood that this map placed an enormous significance on some parts of the earth while virtually eliminating others, but he believed its simulation of a three-dimensional perspective made it useful in understanding global relationships, such as air routes. A standard or flat Mercator projection, he argued, potentially overstressed the longitudinal view of the earth over the latitudinal. "[I]t makes it difficult to visualise territorial relationships and great circle routes between the main centres of world population. (Thus a surprising number of people, when looking at a Mercator world map are unable to indicate the direction of the shortest route between Ottawa and Chunking.)"(12) Some elements of precision, Kimble suggested, had to be given up to make way for other lessons and emphases.

If cartographers distort the world with a purpose in mind when they choose a method of projection, they also create it when they make choices about a map's scale and its representation of themes or symbols. Maps come in all sizes. Cartographers adopt a usable scale to represent a portion of the earth's surface at some fraction of its real size. On most street or road maps, you will see the scale identified with a graphic bar that shows you how much one centimetre or inch represents in terms of kilometres or miles. On geological, topographic, or even political maps, you will generally see scale described as a ratio, such as 1:100,000, which means one unit of area on the map is equivalent to 100,000 units on the surface of the earth. Maps occasionally do not contain scale bars or ratios,

usually when the map projection does not allow for it. None of Kimble's maps, drawn by cartographer J. Tremblay, for example, contain scale bars or ratios. Why? For all his discussion of choice of projection in his first chapter, Kimble did not address the problem of scale. The answer may be that most of the maps in the volume assume a standard scale and point of perspective of Canada and identify distributions of things (soils here, industry there), for which measurements of relative distance are not particularly important. However, cartographers recommend including an indication of scale in maps whenever possible to suggest relative distances and a sense of the size of areas depicted. Neglecting to do so can confuse a reader.

Maps contain information and it is the cartographer's task to decide what information to include and highlight. This necessarily involves a degree of selection, simplification, classification, and symbolization. A vegetation map of Baffin Island that sought to map every different species present at a 1:100,000 scale would be an indecipherable mess. If clarity is a virtue in map making (and it is), then selection must be part of clarification. So must be the use of symbols. To make maps legible, and to represent data well, cartographers choose symbols and thematic fills to cover empty space and give it meaning. In Map XIV of Kimble's CMG, for example, he identifies rivers with named, heavy, twisting black lines (See Figure 14.2). The width of the lines

Figure 14.2 "Prairie Irrigation"



This map of the Prairies sketches an optimistic geography of progress and expansion. In Kimble's analysis, irrigation is cast as a scientific response to drylands agriculture.

Source: George H. T. Kimble, "Prairie Irrigation," Map XIV of *Canadian Military Geography* (Ottawa: Directorate of Military Training, 1949). Used with permission from National Defence.

does not correspond to the width of the rivers, but it highlights the river's presence cutting across land. The thematic fills identified in the key to the right of the map identify different categories of irrigation projects across Alberta and Saskatchewan as "existing," "under construction," and "proposed." Using those fills, the cartographer identifies the land areas concerned. Again, some distortion occurs to make a point. All of the area identified was not or would not be irrigated. The shaded areas simply identify irrigation project boundaries. At a finer scale, when one wants to zoom in, the cartographer could provide more detail about which parcels of land were irrigated, but for the purpose of this particular map that level of detail would produce only confusion.

Projection, scale, and symbolization are three critical components in drawing a map. With this brief introduction to their significance, we can shift now to thinking about the context of Kimble's CMG before returning again to the maps and their contents.

Geography and the Cold War

CMG has not changed since it was first published more than 50 years ago. Its pages are the same, but the context in which the book may be read today has changed radically. To begin to gain a sense of this book and its significance, therefore, we need to reflect on its political context. To do so involves answering a question: Why write a military geography of Canada in 1949?

Even though the Second World War had been over for four years, conflict loomed on Canada's horizon in 1949 in ways that seemed more threatening and ominous than ever. Advances in wartime aviation meant that long-distance bombers from Europe or Asia could reach Canada without great difficulty; in 1949 the Soviet Union detonated its first atomic bomb, raising new security concerns in North America. The prospect of nuclear warfare would haunt generations to come. Across the world, the balance of political influence seemed to be susceptible to dramatic changes: Communists seized power in China, and the last vestiges of the wartime alliance between the United States and the USSR lay in shreds as the two powers contested Berlin—the Soviets by blockading the western sections of the city, the Americans by airlifting supplies to circumvent Soviet control. Within a year, a civil war in the Korean peninsula would expand into a major regional conflict with global consequences. Canada's international position changed as it entered into a new alliance with the North Atlantic Treaty Organization. The rapidly shifting international scene raised questions about Canada's national defence caught up in a new era of Cold War.

The feature of Canadian geography that gained most attention in the Cold War was its northern location.[3] Neighbour to the Soviet Union across a vast Arctic frontier, northern Canada was frequently portrayed as a vulnerable flank for the defence of the continent: lightly populated, little integrated by transportation and communications, and difficult to control or defend. In the revised international relations of the Cold War, the north seemed to present a liability to Canada and the United States. The continent, wrote geographer Stephen Jones in 1948, is "wide open at the top."[4] To impose greater control over this area and improve continental defence, Canada and the United States expanded and deepened their wartime military alliance by establishing monitoring stations and defensive networks, and eventually integrating air defence through the North American Aerospace Defence Command (NORAD).[5] By the early 1950s a distant early warning system, or DEW line, consisting of a string of monitoring stations, stretched across Canada's most

distant and isolated northern reaches. A military geography of Canada in 1949, therefore, was a timely and pressing topic. As Canada's continental defence moved into little-known geographical realms, a premium was placed on learning about those realms, about mapping a new geography.

The rise of geography as a distinctive discipline with a place in school and university curricula has often been linked to the rise of the state and of military power.[6] Warfare conducted by states, after all, requires precise geographical knowledge. Armies move though landscapes, navies through seas. The walls of Churchill's wartime bunker were covered in maps, across which he followed the course of the Second World War and on which he plotted strategy. In Canada, geography had been a relatively neglected field of study before the Second World War. Small departments existed at the Université de Montreal and the University of Toronto, and a handful of geography courses were taught at different Canadian institutions. As the Second World War came to a close, several leading intellectuals, universities, and philanthropic organizations began to develop geography courses and departments across the country.[7] One of the chief aims was to create new knowledge of the Canadian north. McGill became one of the most important sponsors of this new geography where the ties to northern research were most direct.[8] In 1944 a geography department was founded at McGill, and the following year, the Arctic Institute of North America. The two units maintained close ties and attracted a new generation of northern specialists.

George Kimble, the first chairman of geography at McGill, was not a northern specialist, but a generalist of wide learning and experience. Before the war, he taught geography at University College, Hull, and the University of Reading. His scholarship focused principally on geography in the Middle Ages.[9] During the war, he served in the British Royal Navy's meteorological service, assisting invasion weather planning in Europe. Kimble had no particular Canadian experience or expertise, and his stay at McGill and in Canada would be short. In 1950, he departed for the United States, where he held several administrative positions, including Director of the American Geographical Society.[10] After CMG, Kimble co-edited a book in 1955 on Canada's north, but this would be his last scholarly contribution on Canada and he wrote none of the text.[11] Subsequently his attention turned to Africa.[12] He was, on the face of it, an unlikely potential author for a Canadian military geography, but his situation was not unusual. Because geography had such a small place in Canadian universities before the war, the rush to expand geography programs in the late 1940s drew heavily on personnel from abroad, particularly the United Kingdom. Kimble's CMG would be a book written by an author surrounded by a certain concern for northern and military affairs, but without a great deal of specialist knowledge about Canada or the north.

Mapping Canada

Any geography that purports to situate Canada in its world position immediately runs into questions of scale: just what ought to be covered in a book of this scope—how much of the world and how much of Canada? And just what about Canada ought to be discussed? Particular cities? Regions? Provinces? Natural features? Kimble's choice of focus and coverage suggests an uneasy tension between an interest in international affairs and a focus on national coverage broken into regional components.

Although the CMG can be read in other lights, when I came to write about Kimble's book my thoughts kept returning to these overarching themes of scale, regionalism, and the problems of representation. In some earlier work on the social scientific understanding of the Canadian north, I had been impressed by how relatively unstable definitions of a region (like the north) can come to take on considerable meaning and permanence in a scholarly community or a broader public discourse. As I leafed through Kimble's volume, I felt that I could recognize a similar set of processes at work: of the identification and representation of territory shaped by a particular vantage point and way of seeing, which would go on to influence later interpretations of that territory. The CMG appeared to me as one attempt to produce a national portrait between two covers, and the question of scale—of how the world, the continent, the nation, and the region were represented—seemed like a key point of entry into my inquiry. I also knew from my teaching that much of the geographical scholarship in this era had been produced under the sign of regional geography. I had, in fact, received a copy of the CMG as a gift from a retired colleague, J. Lewis Robinson, a much-respected practitioner of Canadian regional geography who had worked for the Canadian government in the north during the Second World War, and who had gone on to found the geography department at the University of British Columbia. As I approached the atlas, then, my own reading was shaped by my past work, my understanding of the relevance of the regional tradition informing Kimble's book, and the knowledge that Lew Robinson had once owned this book. My reading would even be prompted in certain directions by comments Robinson had scribbled in the margins.

Kimble's first chapter on Canada's global position stood in sharp contrast to the rest of the volume. Whereas he sets out boldly to instruct students in Canada's global linkages in Chapter 1, with discussions of global influences on climate, resources, and trade, as well as analyses of Canada's setting in relation to airways and "world power centres," the rest of the volume shifts to broadly Canadian and regional topics. (The sole exception is a final chapter, treating aspects of Canada's external trade.) The global position map, the first of 20 in the book, is the last one to situate Canada internationally or to describe lands beyond Canada in any detail. Most of CMG's maps adopt a conventional projection, encompassing the country or region as a whole and describing phenomena within that space but not beyond it. While great lines of contact and influence flow in and through the global position map, Kimble's 19 other maps all stop abruptly at the border. Contour lines on weather maps magically disintegrate where they might be drawn into Alaska. Maps of the density of population and settlement contrast a blank white southern arc over the United States. Even maps on Canadian resources that might imaginably have contained data on Canada's important trade relations with the United States instead portray them as stockpiles of things, variously placed across Canadian space. Partly, this may have been a reflection of the fact that Kimble drew primarily on national data sets to produce his maps, and did not pursue the necessary research to extend phenomena across national lines. But his maps also suggest the extent to which this atlas also produced a relevant national territory that could be portrayed, pondered over, and analyzed outside its immediate continental context. Whether this was Kimble's overt aim is impossible to say, but it was one of the effects his maps produced.

Although the national scale view proved to be Kimble's favourite, he did also include several regional maps to specify economic distributions. The text accompanying the national maps also

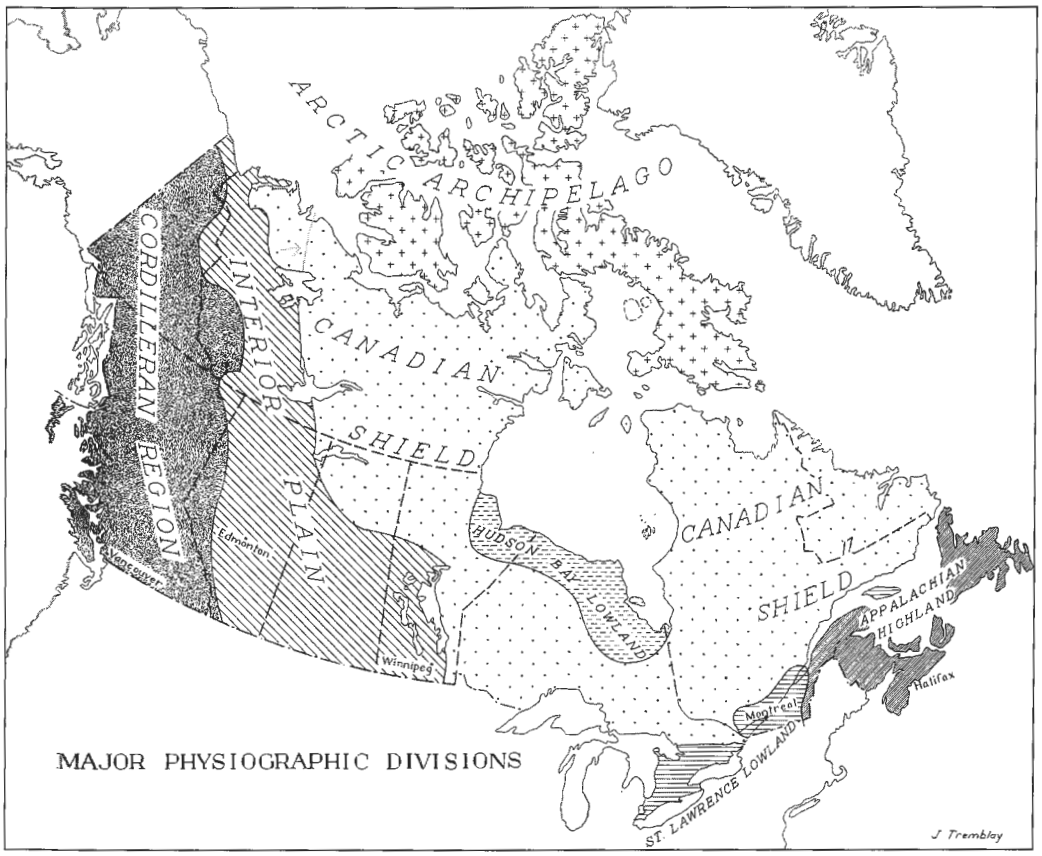
routinely divided the discussion into physiographic regions: the cordillera and the prairies, for example, rather than a political boundary definition, like British Columbia or the Prairie provinces. This regional approach pulled him even further from the promise of the opening chapter on global position. CMG, in the end, was mostly a study in regional geography.

Regional geography was an established genre in early 20th-century scholarship, with strong national traditions in France, Germany, and the United Kingdom.[13] The genre sought broadly to convey a geographical description of place, treating natural, economic, and cultural aspects, and explaining the coherence of a region within itself and in relation to others. In the hands of Canadian authors, the regional genre had become a primarily inventorial exercise. A. W. Currie's *Economic Geography of Canada* (1945) insisted on its analytical emphasis, for example, but devoted most of its pages to long lists of resources, settlements, and economic potentials. Like Kimble's work, Currie divided his regions by physiographic divisions, weighting regional definitions in seemingly inalterable physical reality. He explained economy first by way of physical descriptions of Canada's climate, soils, and topography. Upon that basis much of his economic discussion unfolded.[14] Kimble similarly began his discussion with Canada's physical features, and chapters on weather and climate as well as plants and animals, before turning to economic and settlement geography. Implicit in the genre and Currie's and Kimble's practices of it was the idea that the environment underlay human activity, bounded it, and set limits and possibilities for human life.

Kimble's regional approach emphasized some regions over others. In the text, the least discussed of Canada's regions or areas is Newfoundland, an understandable oversight in some senses because the province joined Canada only in the year of publication. Although Newfoundland appears on all of the Canada maps, it is not discussed at any length in the text, nor does it appear in the statistical appendices. The longest discussion is a paragraph dealing with hydroelectric potential in the province. What is more surprising given Kimble's opening remarks on Canada's world position and the relevance of its northern frontier to discussions of international politics is the absence of much focus on the Canadian north. Because of Kimble's division of the volume into chapters on physical geography and economic and settlement geography, rather than on regions per se, the north gains some representation in the physical chapters describing climate patterns, soil, and plant types, but little in the chapters dealing with agriculture, mining, and settlement. One of the later chapters on transportation re-emphasizes the importance of air travel in the north, but does not develop the point. The area that is highlighted in the introductory chapter as a potential stage of international significance, and which had gained considerable attention in the security discourse of the era, remains at the margins. The emphasis on national coverage and the treatment of particular economic themes structured the volume in such a way that the north was ironically marginal to the main line of discussion.

National coverage by an author with little national experience produced other problems. Several of the national maps contained unintended distortions and inaccuracies. So did the text. As mentioned earlier, my copy of CMG was originally owned by J. Lewis Robinson, who taught the course in the regional geography of Canada at UBC for many years. Unlike Kimble, Robinson spent much of his career studying Canada and knew its regional dimensions well. In Robinson's handwriting, several of the maps and parts of the text have been amended and corrected. The map on physiographic divisions, for example, contains one of Robinson's unmistakable pencil lines in

Figure 14.3 "Major Physiographic Divisions of Canada"

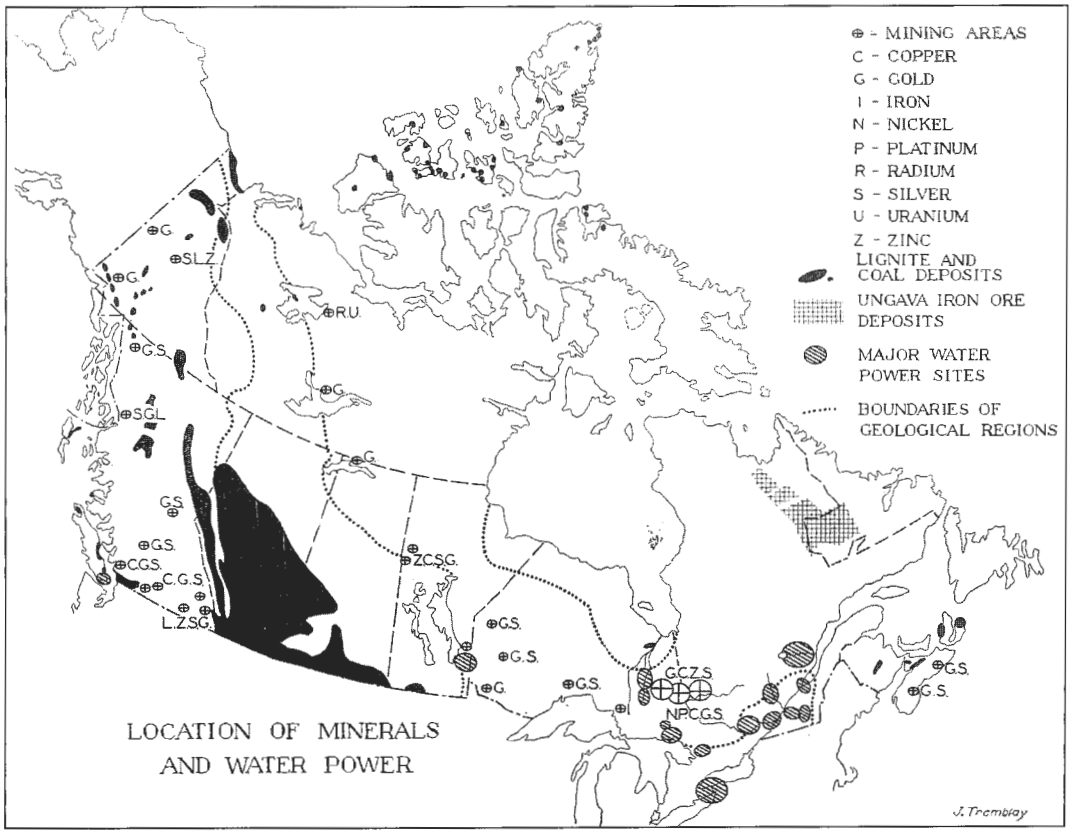


The physical geography of Canada, painted in broad regional strokes, provides the foundation for Kimble's analysis of Canada's economy and political future. Notice the area between the Interior Plain and the Canadian Shield, where Professor Lewis Robinson identified an error in pencil (above Great Bear Lake, Canada's northernmost large lake).

Source: George H. T. Kimble, "Major Physiographic Divisions," Map IV of *Canadian Military Geography* (Ottawa: Directorate of Military Training, 1949). Used with permission from National Defence.

its upper left-hand corner, seemingly extending the eastern border of the interior plain north and eastward (see Figure 14.3). Where Kimble describes the Coast "Ranges" of British Columbia, Robinson amended this to the Coast "Range" (31). These small factual errors stood alongside errors of emphasis and symbolization. In Map XV, on minerals and waterpower, for example, Kimble's deep black thematic representation of coal deposits seems to trump symbols for water-power sites. In western Alberta, where several power sites were developed along the Bow River, all one sees are coal deposits blanketing the entire region (see Figure 14.4). In other parts of the country, rivers with significant power projects are not identified. To judge by Kimble's map, the only significant waterpower site in British Columbia was located in the vicinity of Victoria, whereas this was one of the smallest waterpower sites in the province, following large projects on

Figure 14.4 "Location of Minerals and Water Power"



The crude symbolization in this map makes coal deposits seem much more important than waterpower sites. Kimble's inexperience in Canadian research shows in the absence of several important Canadian waterpower projects.

Source: George H. T. Kimble, "Location of Minerals and Water Power," Map XV of *Canadian Military Geography* (Ottawa: Directorate of Military Training, 1949). Used with permission from National Defence.

the Kootenay River and tributaries of the lower Fraser. Small errors may be found in most published books, but these errors were not trivial. Kimble's distance from his subject showed.

If Kimble's book aspired to situate Canada in a global context but succeeded mainly in offering a regional geography, just how was it a military geography? Just as regional geographies have a long tradition, so too do military geographies. Military geography is a branch of knowledge devoted to studying the surface of the earth and human settlements with a view to military logistics and strategy. Jean Martin, a military historian, has written an essay exploring the relative dearth of military geography in Canada, and rightly identifies Kimble's volume as one of the first in name but with relatively little military content.[15] Indeed, no section of the volume seeks to connect the discussions of physical or human geography to military questions or concerns. There are no discussions of

military installations, problematic regions, or the challenges of logistics such as supplying a land army across such a vast and episodic settlement geography. None of the maps relate military information. The military component in the CMG is rather indirect. Kimble comes closest to addressing Cold War concerns in the questions he poses for readers at the end of each chapter. Intended as discussion points for readers, these questions link the text to broader world affairs. At the end of Chapter 1, for example, he encourages readers to discuss "The distribution of strategic resources in relation to the future peace of the world" (11). At the end of the final chapter he asks students to consider "The 'survival role' of cities in an atomic war" (193). Curiously, this is the one and only mention of atomic warfare in the entire volume, a striking absence given the context. Kimble's CMG provided the groundwork for a discussion of military geography based on an understanding of general geography. Just how well this worked for students or teachers is unknown.

If Kimble's CMG presented a remarkably unmilitary geography, then just what kind of geography did it provide of Canada's environment and economy? How did its contents help to fashion a Cold War vision of the Canadian environment? One of the most striking things about Kimble's portrayal of the environment is that it assumes throughout an instrumental purpose. That is, the earth and all it contains is there to be used. Canada's natural variety makes sense and gains meaning in relation to possible human uses of that diversity. Even the opening chapters of the book, focusing on physical features like climate and plants and animals, assume this perspective. Consider, for example, Map IV, Major Physiographic Divisions, a clear-cut depiction of seven physiographic divisions, each of which halts at the country's borders, our first clue that Kimble is interested in more than physiography (see Figure 14.3). The text accompanying the map provides further background on the features that typify these divisions, salted with a range of comments on the suitability of these features for settlement and use. The large number of lakes to be found in the Canadian Shield merit this dismissal: "Most of them are shallow: many of them little better than bogs" (24). In Kimble's reading and set of assumptions, shallow lakes/bogs stand in the way of useful farming or some other form of exploitation, so they are practically useless. Kimble's description of rivers of the western Cordillera—which are not to be found on the map—further point toward their service as communications arteries: "The most striking feature of Pacific streams is their rectilinear layout, trough-like stretches being separated from one another by transverse canyons which cut deep gashes into the grain of the country. These canyons effectively control east-west lines of communications"(34). Although the map summarizes physical geography, the author seeks to mobilize that knowledge to instruct readers in the use of that geography and the limits it presents to human settlement.

In the latter half of the volume, aspects of human geography appear in the foreground. With Canada's physical features established, Kimble moved on to work out various ways in which they were or could be used. If we look again at Figure 14.2, which we examined originally in discussion of map symbolization, it is evident that Kimble is mapping here an anticipatory geography. This map seeks to project or predict future land use. Comparing actually existing projects to projects under construction or proposed, one notes that at least half the land area identified is not actually contained within operating irrigation projects. In his textual discussion, Kimble stressed that irrigation farming was on the increase, reclaiming lands lost in the previous decade to dust-bowl conditions; he noted approvingly that farming was becoming more scientific and the exploitation of land more industrial. Recent trends suggested, he claimed, an upswing in large farms, producing

benefits of scale and efficiency. His interests appeared not to focus on how farming affected soils, how industrial farming (his term) consumed high inputs of energy and materials, or how large farm sizes might have unknown effects on land stewardship patterns or community life. Expansion was to be welcomed and the rational exploitation of the earth facilitated.

Farming was one way in which Kimble explained the significance of Canada's physical geography for human use. But this utilitarian logic ran through the entire volume. Rivers do not appear as a major focus of attention in the early chapters on physical features, but they are central actors in the economic chapters. In Chapter 6, on minerals and waterpower, rivers fit within the parameters of hydroelectricity: they are judged according to their flow, their potential delivery of energy, and their accessibility to major settlements. In Chapter 9 on transportation, rivers appear again as modes of communication. Alongside discussions of highways and railroads, rivers are described in terms of their contribution to moving goods and people across the continent. Their function as a moving transportation network trumps any other interest in rivers as habitat for flora or fauna, or as a landscape feature. Another examination of human concerns with rivers might consider them as freshwater sources, fishing sites, or flood hazards, but Kimble's treatment focused in particular on rivers as moving energy, as drivers and carriers.

Kimble's utilitarian logic made some accommodation for the idea that resources were finite and needed to be treated in such a way as to perpetuate use over time and through space. His description contained some acknowledgment, in short, of a conservationist approach to resource development. This comes most clearly into focus in discussions of population and settlement, in which he seeks to project forward what might be the prospects for agriculture in Canada. In a subsection dealing with "population capacity" he asks whether or not the rapid exploitation of Canada's "natural wealth" might put a brake on Canadian economic and social development. He notes the soaring rates of consumption of timber and minerals, the poor effort to restore forests, and the inability to expand a finite supply of nonrenewable resources. In general, however, he was not overly troubled. Canada's vast northern realms presented new frontiers of possibility. The northward course of settlement, of which he seemed fairly confident, promised to break open new agricultural fertility and resources. Of six Canadian regions identified for agricultural expansion, four lay in the northern sections of provinces (the Peace River district and the Claybelt of northern Ontario) or in the Northwest Territories or Yukon (the Mackenzie Basin and Yukon Valley). Although conservation held a place in Kimble's environmental perspective, it was harnessed to a utilitarian principle.

Contrasting this treatment of the Canadian environment as a storehouse of potential was a recurring tendency to emphasize the determining aspect of environment on human culture. The environment not only placed limits and offered possibilities to human cultures in this view, but also shaped them and partly determined their development. As a former meteorologist, Kimble was particularly interested to note the effect of weather patterns: "A . . . noteable characteristic of most of the continent," he explained in his discussion of Canada's world position, "is the variability of its weather. The pressure pattern is constantly changing. Cyclones (lows) and anticyclones (highs) with their distinctive airmass conditions move across North America in an almost never-ending sequence. The effect which these changing atmospheric conditions have on the population can hardly be over-estimated. Huntington argues that the energy of North American people is directly related to the physical and psychological stimulus derived from the alternating arrival of warm and

cool airmasses" (2). Ellsworth Huntington was not just any authority to be invoked. An American explorer and geographer, he was a leading proponent of "environmentalism," a term that then carried a very different connotation than today, stressing the influence of environment on humans. Huntington's work argued the fitness of the North American environment for human communities and drew a close connection between race and climate, assuming that some "races" performed better than others in particular environments.[16] Kimble did not follow Huntington this far, but he did seem to share Huntington's confidence in the overriding effects of physical geography on human communities and behaviours. In a section addressing Canada's Arctic frontier, he laid out the changing nature of air travel in the north and then noted that "in view of the persistent tendency for the world's power centres to migrate polewards, rather than equatorwords, the aerial importance of the *Arctic* zone may well increase during the next generation"(10). Kimble portrayed human settlement geography as a morphing amoeba that grew and expanded in ways ordained by nature. In a discussion of climate as a control factor on the location of industry, he suggested that shipbuilding had located substantially in Vancouver during the war because of the beneficial climate, which resulted in a lack of sea ice and good outdoor work conditions (132–33).

As a geographer, Kimble was also broadly interested in the spatial aspects of Canada's site and situation. His maps suggested this in their emphasis on patterns of distribution and areal differentiation. His environmental vision, in short, was fundamentally spatial. Although this may not appear to be a particularly important feature of his treatment of environment, it does make sense of his regional approach and his constant concern to pin down generalizations about the national scene with particular examples and synoptic specifications. Kimble did not simply write about the number of waterpower sites in Canada, for example; he also sought to map them, and, in this way, give expression to the spatially variegated topography of Canadian physical and human geography. Environment, in Kimble's treatment, was a spatially dynamic set of processes and patterns.

As we pull back from the detail of Kimble's CMG, a broad interpretive pattern stands out: Canada is a coherent cartographic (read: national) space, situated in a vulnerable international context, and differentiated internally in terms of physical regions with close connections to economic zones. The country consists of a vast and varied resource wealth, which must be developed and conserved but always used; that resource wealth is partly a product of environmental circumstances that impose controls on human use, even as human agency over the earth is assumed to be proper and good. Student readers of this text might well have been forgiven if they found these implicit messages to be contradictory. In Kimble's hands the geography of Cold War Canada *was* contradictory. The cultural fashioning of environment and nation in his text implied a country notably defined by its physical resources and the economies that grew up to exploit them. Although questions of military significance shaped the production and reception of the volume, regional, not military, geography animated its central concerns.

So What?

When I am about to write a conclusion to an essay and find myself staring at a blank page, I find it useful to ask, so what? What has our reading of Kimble's CMG suggested about the practice of *doing* environmental history? What has the nature of our evidentiary base meant for the conclusions we

can draw? And finally, what can be said about military geography as a form of environmental knowledge?

One of the advantages of focusing on Kimble's CMG is that it has brought into focus the possibility of examining historical maps or geographical treatises as a source for environmental historians. Historians are best trained as interpreters of words and fragments of paper. Maps are like texts in some ways, but they also require specialist knowledge of cartographic methods, compositional styles, and geography to be fruitfully and critically deciphered. On the whole, environmental historians have made little use of maps in their research. They also rarely produce maps, except simple locational maps, in their published work. As a result, environmental historiography tends not to be particularly sensitive to spatial questions or approaches. I can think of at least three good reasons to read historical maps as part of the general research strategy for any environmental history project: (1) This puts researchers in mind of contemporary spatial representations and of their use by different groups, (2) maps yield environmental information and spatial data that are sometimes difficult to obtain from other sources, and (3) maps provide a different perspective, a fundamentally spatial perspective, on historical processes than is usually offered by other kinds of archival, published, or oral historical sources.

One of the mixed advantages of focusing on Kimble's CMG, however, is that it represents a rather limited evidentiary base for drawing conclusions about the cultural fashioning of environment and nation in the early Cold War. Its contents are certainly relevant, and I have pushed where I could to highlight notable aspects of the text and maps that shed light on the problems before us. But most of those points gain significance by situating them in a context, by pointing out just who the author is and where and in what fashion he worked, by noting the political and intellectual climate in which this volume was produced, and by thinking in general about how CMG represents a Cold War text, significant in part because it reflects and shapes the cultural discourse of an era. We have been able to draw out some of these contextual observations by anchoring the analysis in the secondary literature and by reference to a small scattering of other primary sources, such as A. W. Currie's *Economic Geography of Canada.*

If you have been reading the endnotes as you have proceeded, however, you will have noticed an absence of references to archival sources, or to interviews. Reading CMG on its own terms in the absence of other archival work has therefore imposed some limitations on some of the questions that we could ask and answer. I have tried to flag several of these along the way: we know little about how and why Kimble was asked to write this volume; we do not know how the book was used in officer training curricula or how those officers-in-training made sense of Kimble's work. I would be interested in knowing the answers to these questions, but at this stage of my research I can't answer them. Perhaps military records might shed some light on the commission for the volume? Perhaps other military or educational records might include some discussion of CMG in an educational context? Answers to these questions await further investigation. In the meantime, it is best to acknowledge frankly what we can and cannot know and not to overstep our ground by making rash speculations. If we were drawing a map, the equivalent would be to leave some sections blank, or to insert small question marks where our data are thin. In the accompanying text we might alert the reader to the difficulties of representing a partially realized geography.

There is one final point to make. As a source of environmental ideas, military literature has only recently become a focus of environmental historiography. In general, as John McNeill argues, environmental historians have not paid due attention to the force of the military and of preparations for war in shaping environmental ideas and policies, as well as environmental change. [17] War has been a recurrent and transformative force in human history, which historians have examined broadly from political, economic, and social perspectives. But the consequences of war touch not only on human communities, but also on land, seas, and other species. As environmental historians expand the bounds of their work and their imaginations to encompass military problems as appropriate subjects of study, sources like Kimble's CMG will become more important. A volume like Kimble's will yield other readings and other relevant information for studies of war and environment in Canada.

Discussion Questions

1. How might maps reflect a person's time and place? How do maps reflect an environmental understanding?
2. Why does scale matter in environmental history?
3. How do wars and all of the activities that go into making wars shape the environment and our understanding of it?
4. In what ways do states create environmental knowledge? And with what effects?
5. Why was an Englishman, with little experience or knowledge of Canada, the person to write an authoritative volume on its military geography? What does this suggest about the state of Canadian universities and intellectual life, as well as Canada's position within the British Commonwealth after the Second World War?
6. Why do the maps in Kimble's book stop at the Canadian border? Is this a common practice, and, if so, why? What kinds of environmental phenomena ignore national boundaries? Can you think of any that respect them?
7. How does shading on a map affect its representation? How do figures make symbolic statements?
8. What is environmental determinism and do aspects of that ideology find their way into Kimble's military geography?

Notes

1. My thanks to Sally Hermansen, Stephen Bocking, and the two editors for their close reading and criticism. George H. T. Kimble, *Canadian Military Geography* (Ottawa: Directorate of Military Training, 1949): p. 1. All pages referenced in the chapter refer to this book.

2. Mark Monmonier *How to Lie with Maps*, 2nd ed (Chicago: University of Chicago Press, 1996): p. 8.

3. A useful overview of Canadian policy in the north in this period may be found in Shelagh D. Grant, *Sovereignty or Security? Government Policy in the Canadian North, 1936–1950* (Vancouver: University of British Columbia Press, 1988).

4. Quoted in Matthew Farish, "Frontier Engineering: From the Globe to the Body in the Cold War Arctic," *Canadian Geographer* 50 no. 2 (2006): p. 178.

5. John Herd Thompson and Stephen J. Randall, *Canada and the United States: Ambivalent Allies* (Montreal and Kingston: McGill-Queen's University Press, 1994): pp. 184–213.

6. Felix Driver, *Geography Militant: Cultures of Exploration and Empire* (Oxford: Blackwell, 2001); Neil Smith, *American Empire: Roosevelt's Geographer and the Prelude to Globalization* (Berkeley: University of California Press, 2003); Trevor J. Barnes and Matthew Farish, "Between Regions: Science, Militarism and American Geography from World War to Cold War," *Annals of the Association of American Geographers* 96 no. 4 (2006): pp. 807–26.

7. I discuss this push for northern research and geography in a related article, "Harold Innis, the Arctic Survey and Politics of Social Science during the Second World War," *Canadian Historical Review* 79 no. 1 (1998): pp. 39–68.

8. J. Brian Bird, with contributions from R. N. Drummond, G. O. Ewing, T. L. Hills, and W. H. Pollard, "Geography at McGill University: A 50 Year Perspective," Canadian Association of Geographers' website http://www.cag-acg.ca/files/dept/departments/mcgill.htm (accessed January 8, 2008).

9. George H. T. Kimble, *Geography in the Middle Ages* (London: Methuen, 1938); Duarte Pacheco Perira, *Esmeraldo de situe orbis,* trans. and ed. George H. T. Kimble (London: Hakluyt Society, 1937).

10. Aspects of Kimble's career may be traced in *The Canadian Who's Who*, vol. 4 (1948) (Toronto: TransCanada Press, 1948): pp. 511–12, and vol. 5 (1949–51) (Toronto: TransCanada Press, 1951): p. 543.

11. George Kimble and Dorothy Good, eds., *Geography of the Northlands* (New York: American Geographical Society and Wiley, 1955).

12. See, for example, George H. T. Kimble, *Tropical Africa: Problems and Promises* (New York: Foreign Policy Association-World Affairs Center, 1961).

13. Alan R. H. Baker, *Geography and History: Bridging the Divide* (Cambridge, UK: Cambridge University Press, 2003): pp. 156–97; R. J. Johnston, *Geography and Geographers: Anglo-American Geography since 1945* (London: Edward Arnold, 1991): pp. 36–49.

14. A. W. Currie, *Economic Geography of Canada* (Toronto: Macmillan, 1945).

15. Jean Martin, "La géographie militaire au Canada 1967–2002: une approche qui reste à Développer," http://www.stratisc.org/Strategique_81_9.htm (accessed November 21, 2007).

16. Ellsworth Huntington, *Mainsprings of Civilization* (New York: Wiley, 1945).

17. John R. McNeill, "Observations on the Nature and Culture of Environmental History," *History and Theory* 42 no. 2 (December 2003): pp. 5–43.

Further Reading

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