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Book Review: In Pursuit of an Ice Pact

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too much, both because it would tire him and, perhaps, reveal to others their airplane secrets. "Do not let people talk to you all day and night. It will wear you out, before you are ready for real business. Courtesy has limits. If necessary appoint some hour in the daytime and refuse absolutely to receive visitors even for a minute at other times. Do not receive anyone after 8 o'clock at night" (174). McCullough adds: "Then after some technical discussion about the rudder, he wrote again. 'I can only tell you to be extraordinarily cautious.'" Here would have been an ideal place for the author to expand upon the Wrights' "technical discussions." We can only surmise that McCullough does not want to bore his readers with the details. That's too bad. For me, the reference to the

technicalities of the rudder was compelling enough to prompt me to look up and read the rest of the letter in the Wilbur and Orville Wright Papers in the Library of Congress. In the end, I think McCullough and his editors may have underestimated the numbers of us "Wright Geeks" out here who are fascinated by the technical details of the history of flight.

The Wright Brothers is a good, light and enjoyable summer read, regardless of one's level of technical knowledge about aviation. For readers who would like a more technical and complete explanation of how the brothers came to invent the first controllable and sustainable flying machine as well as a recounting of the other parts of their lives, *The Bishop's Boys* by Tom

D. Crouch (W.W. Norton, 2003) is the book you want. Be warned, however: Crouch's book is *much* longer and takes considerably more time to digest. One is not better than the other; they each serve their own specific purpose. But only one of them is likely to inspire a Hollywood movie.



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In Pursuit of an Ice Pact

Robert Hellström

Jorge Daniel Taillant, *Glaciers: The Politics of Ice* (Oxford University Press, 2015).

In *Glaciers: the Politics of Ice*, Argentine author Jorge Daniel Taillant unravels the complex interplay between environmental protection, political will, and the unimaginable influence of big mining companies in the ice-capped Andes Mountains of South America. Looking through scientific lenses, his book traces the work of respected activists promoting environmental laws to protect vital water resources. Taillant identifies "cryoactivism" as a central theme behind Argentine Environmental Secretary Romina Picolotti's relentless goal to enact the world's first national glacier protection law. Her opponents, the provincial political leaders who support the mining

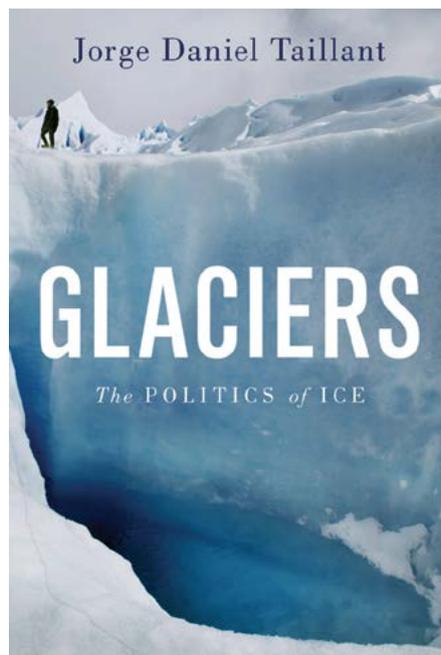
industry, have mounted swift and deliberate attacks to derail Picolotti's train. Peter Munk, president of Barrick Gold, the world's largest gold mining

corporation, whose eyes are set on prospecting in the Andes, is clearly Picolotti's most powerful and politically manipulative adversary. Taillant's

close attention to detail is supported by copious references to interviews, facts, and helpful Internet links that actively engage the reader. No matter how you read Taillant's latest detective work on mining operations, his attention to scientific and legal evidence, and his suspenseful unraveling of covert relations between mining and politics will inspire you to read on.

Taillant opens his story with an overview that assures his audience that this is neither a scientific textbook nor a dreary account of conservationist efforts to push an environmental agenda. It is, rather, "a social, cultural, and political introspection into our cryosphere (the world of ice) that brings critical complex and rather obscure scientific information about ice and glaciers into perspective for our nonscientific lives" (xxi). Chapter 1 introduces the major players, namely Picolotti, Barrick, money-hungry gold prospectors, federal government officials and Argentina's provincial government leaders. The author illustrates the impact of the mining corporations, describing their cutting of roads

through rock-covered sheets of ice the size of several football fields. Chapter 2 traces the natural processes that form and melt mountain glaciers. Glaciers in the Andes grew substantially during the Little Ice Age, a time of unusually cold global temperature from the 1300s to the middle 1800s, and have since been receding largely due to anthropogenic warming by fossil-fuel burning and an enhanced greenhouse effect. He makes readers aware of how critical yet fragile these frozen freshwater reservoirs are for millions of inhabitants who live downstream of their life-giving melt water. In Chapter 3, Taillant steps back into the world of politics and makes a strong case for introducing new glacier-focused laws to augment existing water laws that currently do not explicitly mention glaciers. Local provincial governments have been too welcoming to mining corporations. “Glaciers were a nuisance to mining and had to be removed to get at gold and silver deposits” (55). The big mining corporations and provincial leadership of Argentina appeared oblivious to the fact that Picolotti had carefully crafted the world’s first national glacier protection law that passed through the senate with hardly any debate. Picolotti made certain that the entire glacial ecosystem was protected under the law, including periglacial landforms and rock-covered ice or partially frozen soils that may thaw during the summer. This law promised to constrict if not halt mining operations and future prospecting and thereby hurt economic prosperity in provinces with gold and other valuable resources buried at elevations high enough for subfreezing temperatures to sustain glaciers. In Chapter 4, Taillant revisits the fringe areas between glaciers and lower, frost-free areas of water basins called the periglacial environment. Taillant carefully uses Google Earth images to outline unique glacial features being cross-cut by mining prospecting roads and drill sites. His



motivation is clear: to protect water resources that come from glaciers that take different shapes. These include landforms below glaciers that freeze and thaw during the warm and cold seasons or the daily cycles of intense sunlight and clear cold nights. These features also include permafrost (partially frozen soils), hidden rock glaciers containing vast stores of frozen water and debris-covered glaciers protected from the sunlight by a thin layer of rocks, all of which occur at elevations below the common, white-snow-covered glaciers. And yet, even as these dangers to glacier-based water resources are detailed, mining companies and local provinces in Argentina continue to decry the newly passed national glacier law as economically crippling. The reader is left wondering about the mentality of Barrick Gold: “what are they thinking...?” (83).

As a climatologist specializing in cold regions, simply hearing of a new book on glaciers motivated me to pick it up. In 2005, as part of a larger collaborative hydrologic assessment team, I began building a network of automated sensors to measure microclimate changes in the Peruvian Andes. I had only vague ideas of how unpredictable

political decision making could influence economic and social wellness in Ancash province, which contains the Cordillera Blanca (White, glaciated Mountains). Taxi drivers there talk of the current provincial leader as crazy Waldo, which seems to sum up local opinion.

Taillant’s treatment of the politics of climate science is captivating to both scientists and policy watchers. His writing style is very accessible, and his tactical story-telling approach and layperson analogies help readers understand the complex nature of glaciers and periglacial environments and the interplay between political, economic, environmental and corporate incentives. This author weaves science and politics very effectively and without seriously confusing the reader, a rare skill. Taillant’s passion and dedication to glacier protection jumps off the pages throughout the book and is especially evident in Chapter 9, where he recounts his own endeavors to acquire on-site and satellite images to assist with the glacier and periglacial environment inventory, a critical step in implementing the glacial protection law. Still, some of this book is heavy going. Readers of *Glaciers: The Politics of Ice* should approach it with an open mind, read no more than two chapters in one sitting, and consider the broader impact of Taillant’s story. If nothing else, you will definitely learn some fascinating, surprising facts about the importance of ice as a fresh-water resource on our planet.



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