

Today's Issues Readings for August 26, 2016

For Sunday August 26 the Today's Issues group will discuss two articles from the August 16 issue of the New York Review of Books:

P. 32, Jonathan Freedland, "Trump's Chaver in Jerusalem," about Benjamin Netanyahu

P. 69. Tim Flannery, "The Big Melt," a review of two books about climate change in the arctic.

The group meets in the parlor of the religious education building next to the church at 9:30 on Sunday mornings. Please do the reading and join our lively discussion.

A copy of the readings follows:

Trump's Chaver in Jerusalem

Jonathan Freedland AUGUST 16, 2018 ISSUE

Bibi: The Turbulent Life and Times of Benjamin Netanyahu
by Anshel Pfeffer

Basic Books, 423 pp., \$32.00

Benjamin Netanyahu

Benjamin Netanyahu; drawing by Siegfried Woldhek

Perhaps it's now impossible to read any political biography without thinking of Donald Trump. The forty-fifth president of the United States looms so large in the global imagination that the impulse to measure all other politicians against him has become almost involuntary. But in the case of Benjamin Netanyahu, the grounds for comparison are stronger than most.

Anshel Pfeffer, a prolific correspondent for both Ha'aretz and The Economist, has written a detailed, revealing, and shrewd biography of Netanyahu that is packed with fascinating insights, yet the word many readers might find themselves mentally scribbling in the margins repeatedly is "Trump." Pfeffer describes a man raised in elite institutions but nevertheless consumed by hatred of an elite from which he feels permanently excluded; a politician who built his brand through his mastery of television, with a knack for the newsworthy phrase, yet who sees the media as a sworn enemy, convinced that TV and the press have hindered his progress to high office when in fact they have smoothed it. We see a man mired in corruption allegations, watching as his aides flip to assist dogged state investigators, but who nonetheless retains the adulation of his base.

We are told that at

rallies organized by his supporters, he launched into long rants against the "leftist fake news media" he said were behind the "unprecedented witch hunt" against him and his family. He made long lists of his achievements, punctuated with the refrain, "That, they don't report!"

Pfeffer is describing Netanyahu, but it could just as easily be Trump. Earlier, we see Netanyahu interviewing the unnamed N, a prospective new head of the Mossad. The prime minister asks an odd question: “Will you be loyal to me?” N answered that he would do everything necessary to protect the state. ‘I’ll get back to you,’ said Netanyahu.” Change the names, and that exchange—with its demand for personal rather than institutional fealty—could have been lifted verbatim from the memoir of James Comey, the FBI director sacked by Trump.

The parallels verge on the uncanny. Netanyahu has trouble keeping his staff; the churn rate is impossibly high. He attacks his opponents with wholly bogus, invented charges. (In the 1996 election, for example, he claimed without evidence that Shimon Peres was planning to divide Jerusalem between Israelis and Palestinians.) In 1999, in a move that might resonate with Rex Tillerson, who learned he had been fired via a Trump tweet, Netanyahu fired his defense minister on live TV.

Once Trump entered the White House, Netanyahu wasted no time in making the connection explicit. Keen to ingratiate himself, he tweeted: “President Trump is right. I built a wall along Israel’s southern border. It stopped all illegal immigration. Great success. Great idea.” His third wife, Sara, is similarly brazen. When Trump and his third wife, Melania, came to visit, Sara embraced them with the words, “We’re just like you. The media hate us but the people love us.”

Pfeffer writes, “Both men are fundamentally insecure, lacking in introspection, and have an uncanny ability to sense their rivals’ weak spots and sniff out their voters’ inner fears.” They both have a knack for “stirring up resentment and divisions between parts of the electorate.” And for both, those divisions are often crudely ethnic.

Bibi might be flattered to be considered the Israeli Trump, but it’s probably more accurate to see Trump as the American Bibi. Netanyahu has been at this game for much longer, first leading his country two decades ago when Trump was still Page Six fodder. Indeed, it’s plausible to see Netanyahu as a trailblazer for a trend in politics that is now accelerating across the democratic world but that was visible in Israel years ago. He was a populist would-be strongman before it was fashionable, exploiting nationalist fear and resentment and railing against the liberal elites before most of us had heard of Viktor Orbán, Narendra Modi, or indeed Donald Trump.

But there is much more to Netanyahu than a mere echo of the man in the White House. Even his enemies concede that Bibi is a more substantial figure than that, and not only because he has governed his country for so long. He has a coherent worldview, one that has crowded out all others in Israel but that also has shaped much thinking beyond, especially in the United States. Not least through his inaction, he shares responsibility for the current dire state of the Israeli-Palestinian conflict. If he remains in office until July 2019, he will overtake David Ben-Gurion’s record of days in the prime ministerial chair: he’s already occupied it for twelve of the last twenty-two years. This period—defined by relative affluence and improved security for Israelis, unending occupation for Palestinians, and paralysis in the conflict between them—has been the age of Bibi.

For the armchair psychologist, it has long been tempting to see Benjamin Netanyahu as ruled by a triangle of influences: his father, Benzion, a severe, forbidding scholar raised in the hard-line Revisionist camp of Zionism; his late brother, Yoni, commando and slain hero of Entebbe; and his wife Sara, the notorious Lady Macbeth figure of Israeli tabloid caricature, whose taste for expensive living and short temper, along with her apparent veto over personnel decisions, have aroused constant, if not feverish, interest. Pfeffer adds flesh to all three of those narratives, but also nuance. What emerges is a far subtler, more complex picture than the amateur Freudians might have assumed.

The book does not dwell too long on Sara Netanyahu, reminding us that it was she who chased her husband in their courtship, the then twenty-nine-year-old El Al flight attendant identifying the rising star diplomat-turned-politician as a catch. It retells the story of the “hot tape,” when Sara was called at home during Bibi’s first bid for the Likud leadership in 1993 and was told that a recording existed of her husband having sex with another woman: if he didn’t withdraw from the campaign, the tape would be released.

In a move that echoes Alexander Hamilton’s Reynolds Pamphlet, Bibi sought to preempt the scandal by going on television—where else?—and telling his version first. The subsequent police investigation never did find a tape, but Netanyahu was left embarrassed, while his wife was given enormous leverage. Pfeffer writes, “Despite her anger, Sara was prepared to remain in the marriage, on her terms.” Their lawyers met and reached an accord. There’s no proof that a written contract was signed, but

the facts remain that from the last weeks of the primary campaign to this day, Sara has accompanied Bibi on nearly all his major public engagements, and especially his foreign trips, with the exception of military- and security-related events. She has had full access to his schedule and has vetted the appointments of members of his staff.

From then on, we hear of important advisers, and advice, excluded from Bibi’s circle because of a perceived slight to Mrs. Netanyahu. Her influence is undeniable. But Pfeffer supplies two important caveats. First, though it might be convenient to cast Sara, already renowned for her grasping appetites and indicted on June 21 for systematic fraud involving catering expenses, as responsible for Netanyahu’s drift toward the billionaire class—gladly enjoying the largesse of Israeli and foreign tycoons, generosity that has led to some of the current corruption allegations against the PM—the evidence suggests he was quite capable of making those mistakes all by himself. Representing Israel in Washington and at the UN in New York in the 1980s, before he had even met Sara, “he had acquired a taste for good living, for being chauffeured and eating in fine restaurants, where someone else picked up the tab.”

Second, and perhaps more surprisingly, Pfeffer refuses to let Bibi off the hook by depicting him as the bullied victim of his wife. He writes that “the self-centered Netanyahu, who rarely

acknowledges those around him, not only has borne Sara's constant presence with complete grace, indulging her every whim, but has seemed truly devoted to her."

That myth-busting effort is more pronounced, and more profound, when it comes to the second point of the triangle: Bibi's older brother, Yonatan, or Yoni. The official narrative is that Yoni was an unambiguous war hero, not only a patriot who laid down his life leading the mission to rescue Israeli hostages herded by Palestinian and German hijackers into a disused terminal building at Entebbe Airport in Uganda in 1976, but also a thoughtful, passionate leader of men whose posthumously published letters home would become compulsory reading for impressionable Jewish teenagers everywhere. The Netanyahu family certainly worked hard to tell that story, funding conferences and biographies that would amplify and entrench the legend of, as Pfeffer puts it, "a warrior-philosopher and leader-in-waiting."

It was a story that helped launch Bibi, both directly and indirectly. Directly, in that he became an in-demand speaker and TV guest, a human link to the valor and glamour of Entebbe. But indirectly too, in that Bibi seemed to be the reluctant bearer of a torch passed to him by fate. Just as it was John F. Kennedy's war-hero older brother, Joe Jr., who was meant to be president, so Yoni could be seen in retrospect as the man who had been destined to lead—a storyline that cast Bibi as JFK.

In Israel it has been known for some time that the truth is not quite so simple. Still, for many readers, it will come as news to learn that Yoni was not the primary planner of the Entebbe operation; that he missed some of the essential preparations; and that his own comrades believed he made crucial misjudgments on the night of the rescue that both cost him his life and endangered the mission.

Nor is it sufficient to follow the pop-psychology view of the hawkish Bibi as somehow striving to match the heroism of his brother and determined to compensate for his own lack of comparable glory. For one thing, Pfeffer shows that Bibi had a distinguished military record in his own right. He served in the same elite special forces unit, the Sayeret Matkal, as his brother. Indeed, he too took part in—and took a bullet during—a successful hostage rescue operation, under the command of future prime minister and rival Ehud Barak. If anything, what's striking is how little Bibi makes of his own military résumé: had he been a US politician, it would surely have formed the core of his public persona.

This relative modesty of Bibi's might be a function of the Israeli context, where among top-rank politicians a stellar past in uniform is the rule rather than the exception. He could hardly have shown off his medals during the 1999 campaign, given that his opponent, Barak, was a former Chief of General Staff and jointly the most decorated Israeli soldier ever.

The notion of Bibi as a would-be tough guy seeking to be as fearless in the PM's chair as his brother was on that Ugandan airfield falls at a more basic hurdle. No one would ever mistake Netanyahu for a peacenik, but he has been consistently risk-averse. His rhetoric is bellicose, but

Pfeffer tells us that “he is the prime minister with the lowest casualty rates in Israel’s history.” He launched the Operation Protective Edge military offensive in Gaza in 2014, but even then the author depicts him as the voice of relative caution and restraint around the decision-makers’ table, keen to avoid pushing further or deeper. As for the all-out wars that have punctuated Israel’s seventy years, Netanyahu has not yet launched one. Similarly, and this will surprise those for whom Bibi has long been an object of hate, he is the settlers’ friend but not much of a builder. We learn that “during his tenure, fewer new settler homes were built in an average year in the West Bank than under any of his predecessors in the past three decades.”

Which brings us to the apex of the triangle: Benzion Netanyahu. Some of the most vivid material in the book comes in the early chapters, which begin with the lives of Bibi’s father and grandfather, a rabbi born in what is now Belarus. (The protagonist himself is not born until page 48.) This background is worth dwelling on, for it turns out that Bibi is a third-generation unbending Zionist with deep ties to the United States: both his father and grandfather were full-time advocates for their cause and, like him, dispatched to the US to make the case for a Jewish homeland. All three had experience pressing US Jews for funds.

Gali Tibbon/AFP/Getty Images

Benjamin Netanyahu and his wife, Sara, at his father’s funeral, Jerusalem, April 2012

Once Bibi is on the scene, we see in close-up what many people may believe they already know: that the young Netanyahu had a double life almost from the very start. His academic career thwarted in the new Israel, Benzion, a historian specializing in the Spanish Inquisition and the expulsion of Jews from Spain in 1492, moved to a series of US institutions. The young Netanyahu spent two early years in New York, then four and a half formative adolescent years in Philadelphia, returning without his parents to spend the summers in Israel. “There emerged the American Netanyahu and the Israeli Netanyahu, which were so distinct from each other that they had different names,” Pfeffer writes. American Ben, “studious and rather detached,” gave way to Israeli Bibi, “gregarious and outgoing,” every June.

This duality of Netanyahu’s has been both an asset and a burden. For some Israelis, it raised a question of authenticity, as if somehow Bibi was not a true Israeli: some called him a yored, literally “one who descends,” the pejorative Israeli term for an emigrant that carries a hint of abandonment, even betrayal, of the homeland. His critics have mocked him for the name he adopted when studying architecture at MIT in his twenties, suggesting that “Ben Nitay” was an attempt to move away from his Israeli roots. Pfeffer defends his subject from that charge: “Ben Nitay was the Hebrew pseudonym that Benzion had used during the 1930s and a name appearing in the Bible and in the Talmud.” Bibi used it because Americans were struggling to pronounce “Netanyahu.”

There are nuances like that throughout. It’s true that Ben immersed himself in US culture and current affairs, but Bibi and Yoni clearly itched to return to Israel, heading back there alone year after year. Publicly, Bibi was reverential toward his father, but Pfeffer makes clear that Benzion

was a chilly figure, shut off behind his study door, plowing for decades a single academic furrow, with little understanding of the emerging Israeli society to which his sons were so committed. The brothers Netanyahu seem impatient with, even at times contemptuous of, their father. He was a man of books and footnotes, while his sons were determined to be men of action. For all that, Benzion's influence is clear and points to one of the most striking Netanyahu traits: ideological consistency. As Pfeffer writes:

Few politicians have had such a long and intensive career without their views evolving. Over the years, Netanyahu has been forced to publicly jettison some positions and present a more pragmatic image. In his actions, he has remained resolutely doctrinaire.

At the center of the Netanyahu worldview is an absolute faith in the primacy, if not supremacy, of the West. For Benzion, the pivotal historical moment was the fifteenth-century Reconquista, when the Christians triumphed over the Moors in Iberia and, in his view, Western civilization was saved from Islam, a victory that he believed prefigured the Jewish return to Palestine. Bibi displays a similar cast of mind when he repeatedly depicts Israel as the vanguard in a broader Western struggle against the forces of Islamist darkness.

This doctrine can manifest itself as crude racism. In his memoirs, the British journalist and historian Max Hastings, hired after Entebbe to write an encomium to Yoni, recalled a conversation with the young Bibi:

He joked about the Golani Brigade, the Israeli infantry force in which so many men were North African or Yemenite Jews. "They're okay as long as they're led by white officers." He grinned.

More directly, Benzion was a hardcore follower of the uncompromising Revisionist Zionism of Ze'ev Jabotinsky, who believed the Jews should construct an "iron wall" to stand between them and their Arab enemies. (As part of their general fondness for mythmaking and brand-building, the Netanyahus have tried to suggest that Benzion served as Jabotinsky's secretary. In fact, writes Pfeffer, he was never more than "a peripheral figure" within Revisionism.) Benzion remained implacable. In 1947 he drafted a full-page New York Times ad that denounced the imminent UN partition plan with its proposal of a Palestinian state alongside a Jewish one. Sixty-two years later, aged ninety-nine, he told an interviewer, "This land is Jewish land, not for Arabs. There is no place here for Arabs and won't be."

There is an echo here of another of Bibi's earlier, unguarded remarks to Hastings: "In the next war, if we do it right we'll have a chance to get all the Arabs out," he told the reporter all those years ago. "We can clear the West Bank, sort out Jerusalem." Benzion made his remarks after his son's 2009 speech at Bar-Ilan University, when Bibi appeared to countenance the notion of a Palestinian state for the first time. But Benzion was clear that, regardless of the words Bibi had uttered, his son had not moved.

There are two further inheritances from Benzion to Bibi that are illuminating. Bibi repeatedly places himself in the long sweep of Jewish history, seeing himself as not merely a prime minister of Israel but a leader of the Jewish people, a successor to the Maccabee chiefs and kings of Judea. Pfeffer writes that Netanyahu's decades-long fixation on the threat of a nuclear Iran is not merely a ruse to divert attention from the Palestinians—though it has certainly achieved that purpose—but is rooted in Bibi's genuine belief that it is his historic duty to save the Jewish people from a latter-day Haman bent on Jewish annihilation. The origin of this kind of thinking is not hard to locate. At Benzion's funeral, Shimon Peres spelled it out: "Bibi," he said, "your father wrote history. You are making history."

Netanyahu's commitment to the Jewish people as an abstraction is not in doubt; it's his commitment to, even affection for, actual Jews that is rather more questionable. US Jews might have swooned for Bibi, with his telegenic fluency and American manners, but the feeling was not mutual. As a teenager in Philadelphia, Bibi disdained the Jews around him, seeing them as soft and weak: they would never wear the uniform of the IDF, never risk their lives for the Jewish state. That attitude endured, his greatest disrespect reserved for Jewish liberals, whom he sees as weaker still. Pfeffer quotes a former Obama official, a Jew, who tells him that Bibi "talks about stuff [progressive Jews] like—high tech and gay rights—but it's clear he disrespects people who put their liberalism on par with their Jewishness."

One might expect this to be balanced by a deep love of all things Israeli. But no. Netanyahu prefers American culture and ideas, especially conservative ones, to Israeli ideology. "He has scant appreciation for much of Israeli society or its academia (at least in the fields not connected to technological research)," Pfeffer writes, "and little interest in the nation's diverse communities, save for the need to appeal to them for votes." We know of his loathing of the raucous Israeli press, and he is constantly railing against the legal establishment. What does that leave? Surely Bibi admires the storied Israeli military? Not necessarily: "He had spent five years in a small elite unit and had never shaken his disdain for 'the big and stupid army.'"

Like a socialist who loves humankind but struggles with living human beings, so Bibi is a fierce defender of the Jews without seeming to have much regard for Jews themselves, whether American or Israeli. This too is an attitude easily traced to his father, who in the 1940s had little faith in Zionism's ability to build a state given "the human material at our disposal." Both fierce nationalists, father and son were consistently bleak in their assessment of the people who made up their nation.

The clear difference between the two men, highlighted by Peres, is that one was a man of words, the other of deeds. Bibi surely achieved the adolescent ambition he shared with his brother: to be a man of action. On one level, that is of course true. But through all these long years in politics—the campaigns, the coalition haggling, the diplomatic shuttles, the speeches, all of which Pfeffer details meticulously—there is a striking lack of accomplishment. Yes, Netanyahu has sidelined all potential rivals, maintaining his grip on office. But what has he done with all that power?

It's true that he has got what he wanted with Trump's withdrawal from the nuclear deal with Iran, though senior figures in the Israeli security establishment fear that could make Israel less rather than more safe, if Tehran responds by reviving its nuclear ambitions. And it's true too that he has won from Trump the long-sought relocation of the US embassy to Jerusalem. But he has not resolved the puzzle left unsolved by Ben-Gurion: fixing Israel's borders once and for all. He can point to no diplomatic breakthrough with Israel's neighbors to match those of Menachem Begin or Yitzhak Rabin. He has not delighted hawks with some audacious military victory. Instead, he has contained the Palestinians, kept them pinned behind a security barrier, thus allowing Israelis to prosper in their own bubble. But he has not wrestled with, let alone answered, any of the fundamental questions his country faces.

On May 14, the seventieth anniversary of Israel's birth and the day of that embassy dedication ceremony in Jerusalem, a day Netanyahu pronounced "glorious," Israeli forces killed more than sixty protesters at the frontier with Gaza, an event which not only badly scarred Israel's reputation everywhere outside Trump-Fox News America, but which also served as a reminder of all that remains unsolved. As Pfeffer concludes, "His ultimate legacy will not be a more secure nation, but a deeply fractured Israeli society, living behind walls." Not for nothing is the final section of this book titled "Stuck on Top," for Bibi, and Israel with him, have been stuck for a decade.

Pfeffer has written a revealing biography of a man the world thinks it knows. Rich in detail and taking full advantage of the author's vantage point as a bilingual journalist, alive to the subtleties of both Israeli and diaspora Jewish life, it is for now the definitive portrait of Netanyahu. It is scrupulously fair to its subject, presenting exculpatory evidence for some of the charges that have long dogged him. If there is something missing, it is not a gap in Pfeffer's research, but rather a void in the man himself.

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The Big Melt

Tim Flannery AUGUST 16, 2018 ISSUE

Brave New Arctic: The Untold Story of the Melting North

by Mark C. Serreze

Princeton University Press, 255 pp., \$24.95

Extreme Conservation: Life at the Edges of the World

by Joel Berger

University of Chicago Press, 376 pp., \$30.00

Austin Post/National Snow and Ice Data Center, University of Colorado, Boulder

The McCall Glacier in the Brooks Range of Alaska, photographed in 1958

Since 1980, computer models have been predicting that a rise in atmospheric concentrations of carbon dioxide will cause the Arctic to warm twice as fast as areas at lower latitudes, putting it at

high risk from climate change. But as Mark Serreze explains in *Brave New Arctic*, until the 2000s many scientists working in the Arctic, including himself, were having a tough time finding conclusive evidence that humans were having an impact on the region's climate.

Serreze is now director of the National Snow and Ice Data Center (NSIDC), based at the University of Colorado at Boulder. NSIDC's Arctic Ice News website gives daily updates on the state of the poles, an exceptionally important service for those interested in the increasing effects of climate change. In 1982, however, he was an aimless geography major who almost randomly took a job as a field assistant on an expedition to the Arctic to investigate how the great ice sheets formed during the Ice Age. He thought himself handsomely remunerated at \$5.00 per hour, as he measured two small, isolated ice caps on Ellesmere Island, hoping to determine whether they were growing or shrinking.

The Arctic is geographically complex, with an even more complicated weather system, and conducting research there is hard, dangerous, and expensive. Yet it's important that the work be done, because climate changes that occur there have a disproportionate effect on our planet. The Greenland ice cap, for example, contains enough water, were it to melt, to raise sea levels globally by around twenty-three feet, and the Arctic permafrost contains enough carbon, were it to be released, to increase atmospheric concentrations of CO₂ by ninety parts per million (as of June 2018 it stands at 409.25 parts per million).

Even more worryingly, the Arctic also holds large reserves of methane, in the form of clathrates—icy, lattice-shaped chemical structures known as “the ice that burns.” Much of it is under the permafrost both on land and under the sea, where it's held stable by temperature and water pressure. All of these factors make scientists worry about the consequences as they watch Greenland's ice melt ever more rapidly, permafrost melt extend in places, and craters form as clathrates become unstable and explode. But will any of these changes trigger a tipping point in the near future that will make climate change unstoppable? Without the strong research on the Arctic led by people like Serreze, we would be flying blind into what could be a very dangerous future.

In 1983, as Serreze was about to embark on his research career, he was “thinking about Arctic cooling and instantaneous glacierization” (the rapid growth of glaciers), and despite the computer models, “even secretly hoping for it.” The evidence for human impacts was not yet in. In 1990 the Intergovernmental Panel on Climate Change reported that the changes in the Arctic “could still be largely due to natural variability,” and that unequivocal physical evidence of what the models were predicting might not be seen for at least a decade. Part of the problem was that the Arctic has a highly variable climate, influenced not only by year-to-year fluctuations but also by decadal cycles such as the shifts in atmospheric pressure known as the North Atlantic Oscillation.

It was not until around 1996, when oceanographers circulated a letter urging coordinated study of the changing Arctic, that the scientific community began making a concerted effort to

understand what was happening there. Serreze played a major part in that research, yet as late as 2003 he was unconvinced that the data were showing anything beyond natural variability. That August, however, at a retreat hosted by the National Science Foundation, he had what he describes as “an OMG moment” as researcher after researcher spoke of “melt, thaw, disruption, destabilization, warming, moving, weakening, and uncharted trajectories.” Others took even longer to be convinced: Jim Overland, a leading oceanographer at the National Oceanic and Atmospheric Administration, finally accepted that humans were changing the Arctic in 2008. Soon thereafter, however, things began happening so fast that only paid lobbyists, and those deluded by them, were denying the facts.

In the summer of 2007, Arctic ice cover reached an all-time low and was so far outside the range of the climate model projections that it shocked scientists. In summer 2012 there was so little ice in the Arctic Sea that open water reached close to the pole; for comparison, in 1980 Arctic summer ice covered an area around the size of the contiguous United States, minus Arizona. By 2012, it covered only 46 percent of that area. As Serreze explains, after that summer, scientists realized that it was a case of when, not if, the Arctic will lose all of its summer ice.

From a hard-to-detect start, climate change quickly gathered speed, and soon had the momentum of a charging rhino. So breathtaking was the shift that Serreze began to speak of the scientific community’s “utter astonishment” at the rate of melt and of a “death spiral” of the Arctic sea ice. Deep concern was sparked globally when, in the summer of 2012, almost the entire surface of the Greenland ice cap began to melt. Then, at the end of December 2015, air temperatures over the Arctic briefly reached above freezing. Serreze, seemingly in disbelief, describes the event as “simply unheard of.”

In February 2018, after the completion of Serreze’s book, the Arctic experienced its fourth winter heatwave, with temperatures rising above freezing four years in a row. The 2018 heatwave was the most extreme, with a temperature of 43° Fahrenheit recorded at Greenland’s northernmost observatory, which is just 440 miles from the North Pole. For ten consecutive days, the station recorded above-freezing temperatures, and overall this year, temperatures in the Arctic have been up to 70° Fahrenheit higher than average. Unsurprisingly, the NSIDC website reveals that winter ice cover in the Arctic this year is the second-lowest on record, with the four smallest areas occurring over the last four years.

As Serreze makes clear, the Arctic climate system is now entering uncharted territory, with the computer models no longer providing a reliable guide to the future. Will we see an ice-free North Pole in 2018? Or an ice-free Arctic just twelve years from now, in the summer of 2030? Since the US North Pole Environmental Observatory was shut down in 2015, it has been much harder to answer such questions. And the public seems apathetic. On the phone with Serreze, the veteran journalist Seth Borenstein lamented, “How many times can a journalist report on what is happening in the Arctic before it becomes so repetitive that people lose interest?”

The great Dutch writer and historian Geert Mak once told me that in 1933 the Dutch newspapers were full of stories of the threat of Nazism, yet by 1938 those same papers were all but silent on the subject. Sometimes, it seems, threats to our future become so great that we opt to ignore them. Yet if we fail to act with the utmost urgency to slow climate change, we will invite catastrophe on all humanity.

Arctic ecosystems are already responding to the changing climate. “Shrubbification” of the tundra has been evident for some time. In 1948, geologists exploring for oil took photographs at locations across Alaska. In 1999 and 2000 researchers took matching photos at the same locations. Comparing the images revealed an increase in shrubs, so that the open tundra was disappearing under them. One of the few mammalian beneficiaries of the warmer conditions is the bowhead whale, which is finding more food. Most Arctic species, however, are finding conditions ever more difficult.

Joel Berger’s extraordinary new book *Extreme Conservation* reveals just how hard-won knowledge about various Arctic species is. His abiding interest is snow oxen, a diverse group of herbivores adapted to life in the most hostile regions of Earth. One of them, the musk ox, is Berger’s most long-standing subject of study. A relative of sheep and goats, it was once widespread across the Arctic. But the last European musk ox died around nine thousand years ago and the last Asian ones around two thousand years ago, leaving the sole survivors in Alaska, western Canada, and Greenland. The Alaskan population was wiped out when native people obtained guns from European traders, but was reintroduced from Greenland in 1935.

Berger’s research has taken him to two of Earth’s three poles: the Arctic and the “third pole,” the Tibetan plateau. He has had to work in all-but-impossible situations—for example, in restricted military areas where he was opposed by bureaucrats, and in the most remote parts of Mongolia and Bhutan, where cultural differences can make research very difficult. In the US, he succeeded in securing pronghorn migration routes, convincing ranchers and oilmen of the necessity of setting aside land for conservation.

Matt Nolan/National Snow and Ice Data Center, University of Colorado, Boulder

The McCall Glacier, photographed in 2000

Berger has a record of achieving great things in the toughest places on earth. Yet he is not always welcome. In remote Inuit villages, for example, he’s perceived as a symbol of distant and threatening America, which in the eyes of the locals has already done enormous damage to native cultures. He is also interested in a creature that the local Inuit have little sympathy for. As they see it, musk oxen were introduced by Americans without any local consultation, and they are thought to compete for food with the caribou upon which the villagers depend.

One of the most dangerous climatic trends for musk oxen, Berger explains, is ever-warmer winters, which can induce rain-on-snow events. He has had his own experiences with them: “Winter jackets that were dry in the cold became waterlogged in rain. In wetness and grueling

wind, we grew hypothermic. Snow machines overheated. Thick sheens of river ice lost outer coats.” For herbivores the impact is even more catastrophic, because the rain freezes to a hard layer of ice, making it impossible for them to reach their food. After one rain-on-snow event on Banks Island, Canada, 20,000 musk oxen, out of a population of 70,000, perished. And the effects can be felt for years, as calves born underweight struggle to survive.

But why should we care about the fate of the musk oxen? Apart from the fact that they are one of the toughest and most magnificent herbivores, they and other snow oxen may well be canaries in the Arctic coal mine. Because of their unique ecology, they are among the first to be affected by climate change, but it won't be long before the changes affecting them begin to affect other species, including ourselves. Scientists fear that, as the Arctic loses its biodiversity, the ecology of our living world will begin to unravel.

In March 2011 Berger found evidence of yet another climate-related threat to the musk ox. While flying near Cape Espenberg, Alaska, he discovered a group of fifty-two dead musk oxen, including a male who had been frozen while standing in the ice. The group had been killed by an ivu—a storm-driven surge of freezing seawater and ice that can travel hundreds of yards inland and push up waves of ice as high as twenty feet. As the sea ice, which absorbs wave energy, retreats, ivus and coastal erosion are increasing, with tragic effects on both musk oxen and Inuit villages, which are being relocated from the coast.

Stabilizing the Arctic's climate, if it can be done at all, is the task of decades or centuries. It will require a swift cessation in the use of fossil fuels and the development of methods and technologies that will draw CO₂ out of the atmosphere. But other threats to Arctic wildlife can be dealt with more swiftly. One such threat is hunting. Hunters tend to target male musk oxen, which are twice as large as females and have magnificent hooked horns. But in groups of musk oxen that lack males, infant mortality is high.

This appears to be because musk oxen have an unusual defense mechanism. If threatened by bears or wolves, they form a circle, within which they protect their young. The males, which can be very aggressive, suddenly lunge out of the circle and try to hook the predator with their horns. As the Arctic warms, grizzly bears are pushing further north, and researchers hypothesize that grizzlies and other predators are killing enough young musk oxen in herds lacking protective males to cause the population to decline.

Such scientific hypotheses are interesting, though of little use unless they can be tested. But testing hypotheses about musk ox predation is extraordinarily arduous. Predation events are rare, and a researcher would never gather enough data just by tailing a herd of musk oxen in the hopes of witnessing one. Instead, to test the idea Berger decided to try to determine whether musk oxen fear bears, reasoning that if they did, then bears must be significant predators. So he dressed in a bear costume and approached herds of musk oxen, recording their response. Just to be sure that it was the bear costume they were responding to, he also approached the same herds dressed in a caribou outfit.

Berger discovered that the approach must be made from at least a mile away and, like that of a bear bent on attack, it must not be direct. With a wind-chill factor of -15° C and a skin of ice over the snow, on his first attempt Berger took an hour and a half to get within forty-five yards of the herd. Then a bull charged—from twenty-five yards away. Instinct kicked in, and he tossed the head of his bear costume skyward, causing the confused bull to halt. Berger then struggled through the deep snow toward his colleagues, who were approaching on their snowmobiles.

The astonishing thing is that Berger did not give up but repeated the exercise again, and again and again, over deep snow, sharp rocks, and permafrost, enduring hours of agonizing cold. At most, he got to record two encounters per day, but often only one. Over the years, he built a data set of more than one hundred encounters and got charged “seriously” by bulls four times. Always, in the back of his mind, a question lurks: What if, while dressed in his costume, he meets a real bear?

Some of Berger’s interactions with musk oxen are deeply disturbing, and it’s greatly to his credit that he admits to the failures as well as the triumphs of his work. As part of his research, he darted female musk oxen with a sedative and placed radio tracking devices on them. In all, he darted 215 musk oxen, 90 percent of which returned to their herds. But some became isolated, initiating what Berger accurately describes as a “tragedy.” As he tracked the isolated individuals, a sad picture emerged. Without herd protection in a harsh land, they became distressed and sought safety in holes in the snow, where they led a lonely and fearful existence.

Investigating musk oxen killed by predators can be even more traumatic. One of the animals Berger collared was attacked by wolves. The radio collar pinged in a way that signified that the animal wearing it was dead. Unable to investigate right away, Berger arrived on the scene two days later and was astonished to find another carcass, beside which the rest of the herd waited “patiently, now for a full three days, as if somehow their presence will usher their two dead companions back to life.”

Berger leaned down to remove the collar: “A chunk of leg is gone. A hole punctures her abdomen. Part of the rump is eaten.... The cow lies in the snow, edges melted away by the warmth of her decaying body. I push down on her throat. Her eyes open.” Horrified, Berger realized that the mutilated creature was still alive—indeed it had been eaten alive for days. She tried to get to her feet. It took three shots to put her out of her misery.

Such nightmarish moments can give researchers a form of PTSD. While studying saiga antelopes in Mongolia, Berger worried about trying to capture and collar the high-strung creatures, upon whom the procedure had never previously been tried. At night he was haunted by a repeating dream “involving talons—vise grips tearing into my shoulder, blood exploding—the eagle’s victory dance.”

The bleak nature of Berger's work comes through strongly in a letter he wrote to his wife while he was researching musk oxen in the "postapocalyptic" world of Wrangel Island, in Russia. The island, in the Arctic Sea, is famous as the last redoubt of the woolly mammoth, which survived there until the Pharaonic era. Today it forms part of a military zone, and upon entering it Berger was arrested, then released to live among the rotting buildings of an old gulag. His letter reads, in part:

Three days, almost 100 miles of riding [on a snowmobile] from 5 above to 20 below, just to get a single data point. One! Just crazy? And, by the time I submit our work for publication—well, who knows, some reviewer will probably say, "sample size is too small."

Berger is a committed conservationist whose work has increased the chance that musk oxen, saiga antelopes, takin, and pronghorns will survive. But is such altruism sufficient to induce someone to live a life of freezing discomfort, trauma, frequent failure, and social alienation? As a biologist who undertook twenty-six expeditions to remote parts of Melanesia, I have some insights into the life Berger has chosen. Yes, the idea that you might be helping species survive is a powerful incentive. But another reason that near-death experiences don't put you off is incurable curiosity: you just have to know what's over that next mountain, or what that next observation will bring.

But the boiling frog syndrome also plays a part. After spending months raising the money, recruiting the staff, and acquiring the equipment needed for a project, you've invested a lot in the journey. By the time you reach your first serious hurdle in the field, to quote Macbeth, you are "in blood stepped in so far that, should I wade no more, returning were as tedious as go o'er." By the time you face that arrow pointed at your chest or that charging musk ox, it's simply too late to turn back. Such fieldwork is mostly for the young. I gave up in my forties, when those mountains just seemed to be getting steeper and more exhausting to climb, and I began to believe that I might actually die in the field. But Berger continues, his hair graying and his body crying out for rest. He is a hero of biology who deserves the highest honors that science can bestow.