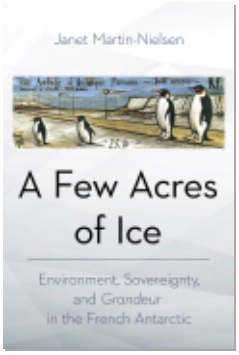
6. Growing Maturity



6

GROWING MATURITY

While Terre Adélie had been administered by Madagascar since 1924, by the mid-1950s this was no longer tenable. Between Madagascar's move toward independence and a growing desire to reaffirm French sovereignty over its most distant possession, Terre Adélie needed to be pulled closer to the Hexagon. The link with Madagascar had always been tenuous at best. While legal decrees tied the Antarctic territory to the Indian Ocean colony, in practice it was a fictional link: there was no geographic, historical, nor economic connection. Neither did Madagascar have the financial, logistical, or technical means to access Terre Adélie or to establish an administrative presence there. After World War II, it became harder to maintain with a straight face that Madagascar contributed to any real effective authority over Terre Adélie. The crux of the matter was made clear by Robert Bargues, the inspector general for Overseas France: "The administrative attachment to Madagascar could seem, to a certain extent, theoretical," he asserted in a speech in late 1950.[1] With Expéditions polaires françaises' expeditions of 1949–1953, it became clear that Terre Adélie's future lay not with an island off Africa's eastern coast but with polar experts in Paris. Madagascar's Representative Assembly recognized the inherent problem and soon announced that it was in favor of the austral territories being detached from Madagascar and administered directly from the Hexagon.[2]

In Madagascar, too, the political situation was in flux. In late 1945, the *Mouvement démocratique de la rénovation malgache* (Democratic Movement for Malagasy Rejuvenation) began to push for independence in an early postwar

challenge to France's colonial empire. By the spring of 1947, the nationalist movement was spreading across the island. It was violently repressed by eighteen thousand French forces who drew on weapons of terror—including torture, rape, and mass executions—to quash the uprising. Officially, 11,200 people were killed, but historians have estimated the real number to be much higher, possibly as high as two hundred thousand.[3] By early 1949, the nationalists were defeated and their leaders imprisoned. For a short while, it seemed that Malagasy independence had been thwarted. But with the Việt Minh victory in Indochina in 1954—after an eight-year war, financially and morally devastating for France—the potential independence of other French colonies became a political reality. France's Socialist government passed the *loi-cadre Defferre* in 1956, transferring powers from Paris to French colonies in Africa. Named for Gaston Defferre, the overseas minister, the law introduced almost-universal suffrage: while Africans living in French colonies had become French citizens in 1946, the vast majority were deprived of the right to vote until the new law. The law also devolved power toward territorial assemblies and abolished the different electoral colleges for Europeans and non-Europeans. Still, it was designed not to encourage equivalence or decolonization, but as an "active attempt to renegotiate imperial policy and perpetuate French influence overseas" by transferring direct administration but retaining ultimate control.[4] Regardless, the law's reforms built the framework for Madagascar's independence. The Malagasy Republic was declared in October 1958 and full independence was achieved in 1960.

Taken together, these events pushed the French government to question Terre Adélie's attachment to Madagascar. Noting the growing international interest in the Antarctic and sub-Antarctic regions, Bargues, the inspector general, called for the government in Paris "itself to directly exert its authority over these faraway lands."[5] While the overseas minister, Louis Jacquinot, introduced legislation to this effect in 1951, the instability of Fourth Republic governments meant that nothing happened quickly. Finally, on 6 August 1955, Terre Adélie, together with France's remote and uninhabited sub-Antarctic possessions (Crozet, Kerguelen, and the Îles Saint-Paul and Nouvelle-Amsterdam), were folded by law into a *Territoire d'outre-mer*, or overseas territory.[6] The new territory, called *Terres australes et antarctiques françaises* (French Southern and Antarctic Lands, or TAAF), was headquartered in Paris.[7] A legal entity with administrative and financial autonomy, funded through the Overseas Ministry, TAAF was managed by a chief administrator (*administrateur supérieur*) named by the Council of Ministers and charged with the powers of the Republic in the territory.[8] The chief administrator was assisted by a consultative council made up of members named by the implicated ministries for periods of five years. This political and administrative setup was expressly designed for possessions with neither Indigenous

nor permanent populations. Since TAAF's four districts had no electors, TAAF had no elected representatives in the French parliament.

The TAAF districts were linked by neither history nor geography nor climate: they included a slice of the Antarctic and a handful of archipelagos scattered in the southern Indian Ocean, some discovered by French and some by Castilian and Portuguese navigators. They were, however, linked by isolation and a lack of Indigenous inhabitants and permanent populations, as well as by their previous attachment to Madagascar. In terms of France's overseas empire, they represented the ends of Earth. As François Garde, TAAF's chief administrator from 2000 to 2004, has noted, they were grouped together in 1955 as a marriage of convenience: given the need to transfer their attachment from Madagascar to Paris, it was simplest from an administrative point of view to keep the group of uninhabited possessions as one.[9] Over the ensuing decades, the districts posed very different logistical, administrative, and legal challenges. Being grouped with the other districts in a single administrative bracket would later prove problematic for Terre Adélie, when it was singled out as having the least economic potential.

The creation of TAAF in 1955 was also prompted by growing concern about France's hold over its austral possessions. In an era of increasing international interest in the Antarctic and sub-Antarctic, as well as sweeping geopolitical changes affecting the region and France's overseas presence more broadly, the Fourth Republic felt compelled to reaffirm sovereignty over these districts for several reasons.

First, the wartime use of Kerguelen as a supply and rest station by the Germans highlighted the vulnerability of the austral districts. Early in the war, Kerguelen was visited by German auxiliary cruisers, which took advantage of the lack of human presence in the archipelago to repair their boats and replenish fresh water and food supplies. These incursions were only discovered when Australia sent a naval ship to the islands in late 1941. After the war, Australia openly declared its interest in Kerguelen, prompted by the security implications of leaving a vacuum. Starting in 1947, Australian scientific expeditions landed in Kerguelen, where they made magnetic observations and visited the abandoned French whaling station.[10] The political rumblings of the previous decades resurfaced. France needed to make a choice: establish permanent presence in Kerguelen or risk Australian annexation. The belief among high-ranking French officers that Kerguelen was strategically important pushed France to decide to establish presence there. These officers saw Kerguelen, situated equidistant between South Africa and Australia, as a strategically valuable waypoint for ships in an otherwise empty expanse of ocean.[11] "The role of Kerguelen in controlling Atlantic-Pacific lines of communication in case of conflict will be essential,"

wrote Robert Genty, a French Air Force colonel seconded to the Ministry of National Defence: "He who possesses Kerguelen will become master of sea and air links between the two big oceans and will control traffic in the southern Indian Ocean."[12] If France did not establish presence in Kerguelen, the French government realized, either the Australians or the Americans would step in and take over. In 1949, France announced its intention to build a base in Kerguelen. Named Port-aux-Français, the base saw its first overwinter in 1951 and has been occupied ever since. For similar reasons, a base, named Camp-Heurtin, was built on Nouvelle-Amsterdam to serve both Nouvelle-Amsterdam and Saint-Paul.[13]

Second, the rapid loss of overseas territory during decolonization also pushed France to affirm sovereignty over its remaining possessions, including the remote and unpopulated ones. As the colonial system was dismantled, it slowly became clear that the future of France's overseas ambitions was going to look very different from the past. With Hồ Chí Minh's decisive victory at the Battle of Điện Biên Phủ in 1954, France withdrew its forces from all its colonies in Indochina and relinquished all claims to territory on the Indochinese peninsula. In the same neighborhood, Laos and Cambodia had gained full independence a year earlier. In Africa and the Maghreb, where French influence had likewise reigned, the situation was similar. Pro-independence fighters in French Cameroun began a guerrilla war in 1955, leading to independence in 1960, while Morocco regained its independence from France in the spring of 1956. Of pressing concern to the Fourth Republic was the Algerian War, which began in 1954 and sparked a series of political crises in France, consuming the country for eight years.[14] This war led to the collapse of the Fourth Republic and the return of Charles de Gaulle to power in 1958 before Algeria won its independence in 1962—political events that would directly affect Terre Adélie. As these conflicts grew and their ramifications became clearer in the early to mid-1950s, there was a desire to pull together France's remaining overseas territories, regardless of their size, remoteness, or population, and reaffirm sovereignty over them. For Terre Adélie and the sub-Antarctic islands, this meant a new administrative structure, governed from Paris, and legal attachment to the Hexagon, all of which was achieved through the creation of TAAF. While they did not form a large or politically significant portion of France's overseas presence, the TAAF districts did, in their own modest way, help maintain France's prestige and place in the world when its colonial empire was collapsing. By virtue of being devoid of Indigenous inhabitants, too, the TAAF districts floated above the thorny problem of how to reconcile the Algerian War with the idea, so intrinsic to French identity, of the *mission civilisatrice*.

Finally, rising international interest in the Antarctic after World War II also forced France to reconsider Terre Adélie's status. Beginning with Operation

Highjump in 1946–1947, the United States made clear its ambitious plans for the white continent. Operation Highjump provided Expéditions polaires françaises with thousands of aerial photos of Terre Adélie—photos that, while not of practical use due to technical problems, were still a sharp reminder that France lacked any aerial capacity in Antarctica. Being outperformed by the United States in terms of creating maps and developing terrain knowledge did not bode well for France's claim to sovereignty. The sheer scale, ambitious nature, and technological superiority of Operation Highjump and its successor, Operation Windmill, made the French expeditions of the early 1950s seem small and insignificant.[15] This American activity in Antarctica, coupled with concurrent Argentine and Chilean expeditions as well as the British Falkland Islands Dependencies Surveys, drew attention to the continent and the uncertain state of its sovereignty claims. By the mid-1950s, Norway, Sweden, Australia, and the USSR were also active in the Antarctic, and South Africa and New Zealand were making plans for the continent. While the French claim to Terre Adélie had been reinforced by the expeditions of 1949–1953, there was still a need to pull Terre Adélie closer to the Hexagon and to make clear France's intention of retaining sovereignty over its slice of the Antarctic—and the creation of TAAF in 1955 served these ends.

In line with the motivation for its creation, TAAF had four principal missions: assuring French sovereignty, conducting scientific investigations, providing meteorological services, and inventorying and exploiting natural resources in its districts. As France had already formally claimed the districts and linked them administratively to the Hexagon, the next step in the assertion of sovereignty was presence: TAAF aimed to establish permanent French bases in every austral district. From the outset, these were envisioned as scientific bases in recognition of the role of science in performing sovereignty in remote and uninhabited lands—something that had been encouraged by earlier international legal decisions about other remote territories and that other claimant states, especially Britain, were making matter in the Antarctic. In Nouvelle-Amsterdam and Kerguelen, bases had existed since 1949–1950, providing homes for small, rotating teams of scientists. TAAF continued to support and expand these bases, including setting up meteorological stations in conjunction with the *Direction de la météorologie nationale*. These stations relayed daily observations to France and to countries with interests in the Indian Ocean (namely, Australia and South Africa) and also conducted research in climatology and high-altitude physics.[16] But when TAAF was founded in 1955, neither Terre Adélie nor the Crozet archipelago had bases or, indeed, any French presence at all. In Terre Adélie, presence was soon reestablished thanks to the International Geophysical Year of 1957–1958, while Crozet had to wait until early in the following decade. With regard to TAAF's resource mission, there was no discussion of resource exploitation

in Terre Adélie during TAAF's early years. At this time, TAAF's resource outlook focused on the sub-Antarctic districts, where it included the exploitation of marine resources (algae, spiny lobster, and fish), attempts at sheep and reindeer farming (with reindeer imported from Lapland, in addition to the sheep that brought earlier from the Falklands by the Bossière brothers), and plans to harvest sea elephants for oil and bonemeal.[17]

The creation of a new administrative structure for Terre Adélie meant changes for Expéditions polaires françaises. Until 1955, Expéditions polaires françaises had a large degree of freedom in its activities. It was a private polar organization, something that differentiated it from all big polar programs in other countries. While Expéditions polaires françaises was reliant on government funds—it did raise funds privately, but its bipolar programs were too expensive to be sustained with private funding alone—it had been largely free from political considerations from its inception in 1947. This changed with the creation of TAAF. In 1955, TAAF became responsible for Terre Adélie, taking charge of the district's administration, facilities, budget, and planning, while Expéditions polaires françaises was transformed into a contractor carrying out work in the Antarctic. All funding for Terre Adélie now passed through TAAF, which exerted oversight over Expéditions polaires françaises' budget. Expéditions polaires françaises was required to keep TAAF "constantly informed" about its activities and spending.[18] With respect to science, TAAF became responsible for conceiving of and developing annual scientific campaigns and long-term scientific projects in the Antarctic and sub-Antarctic. Expéditions polaires françaises' remit was to execute those programs by providing the necessary logistics, organization, transport, and infrastructure.[19] As Expéditions polaires françaises became drawn into TAAF's political orbit, its role, as the American Antarctic scientist and naval officer Leonard LeSchack wrote, "changed from that of constituting essentially the entire French Arctic and Antarctic program to its present function of supplying the logistics for a larger, more developed, permanent program."[20] Paul-Emile Victor chafed at the new administrative structure, resentful of the divide between what he saw as Expéditions polaires françaises' demotion within France and the organization's stellar international reputation: in the mid-1950s, for example, both Japan and Belgium expressly used Expéditions polaires françaises as a model when designing their own national polar organizations, and the US military even called on Expéditions polaires françaises to help solve scientific and technical problems.[21] Tensions came to the surface as Victor pushed back against the new supervisory structures, repeatedly complaining to the French presidency.[22] While Expéditions polaires françaises remained a private organization, it no longer enjoyed the freedoms of its first eight years, and became more and more entangled with government structures.

New Impetus: The International Geophysical Year

When TAAF was created in 1955, France had no base and no presence in Terre Adélie. After Port-Martin burned, there was no money forthcoming to build a new base and Victor's dream of continual French presence in Terre Adélie was cut short. For TAAF, this presented a problem: without presence, there was no way of securing French sovereignty. TAAF saw science, and the presence and authority imparted by scientific bases, expeditions, and knowledge generation, as the chief means of performing sovereignty in its districts. Before long, a solution came in the form of the International Geophysical Year (IGY) of 1957–1958, which gave new impetus to French state interest in the Antarctic.

The IGY was an unprecedented global program of scientific data collection and observation, a cooperative effort of sixty-seven countries and thousands of scientists.[23] Envisioned as a successor to the First and Second Polar Years, which took place respectively in 1882–1883 and 1932–1933, the idea for the IGY was first raised in the United States in the early 1950s. With the advent of computing, radar, and rockets, the scope of the project was expanded from the polar regions to encompass the geophysics of the globe as a whole. The timing—from 1 July 1957 to 31 December 1958—was chosen to coincide with an expected maximum in solar activity. The Antarctic, a region of exceptional geophysical and geographical interest, formed a major component of the IGY: twelve countries were active on the white continent during the project. Britain, Argentina, the United States, and the USSR all installed seven or more stations. Hundreds of men and thousands of tons of material were brought to the Antarctic by ship and by plane, representing massive financial and logistical investment, one of the largest and most expensive scientific projects ever envisaged to that point.

The IGY's chief aim was a coordinated, open, civilian program of concurrent data collection, analysis, and exchange across the globe to study geophysical phenomena on a large scale. Equally, however, it was an international scientific enterprise operating outside of politics at a time of tension across East and West, an audacious project with deep implications for the production, circulation, and exchange of scientific data as well as for international relations. With the Korean Armistice Agreement in July 1953 and Joseph Stalin's death earlier that year, the way was paved for scientific cooperation between the West and the USSR, and the IGY emerged as a respected and unifying project in the early Cold War. While this ideal was certainly not perfectly realized in practice, the level of international cooperation seen during the IGY (such as friendly exchanges of scientific personnel between the Americans and Soviets in Antarctica) was impressive given the geopolitical climate of the era.[24] Particularly noteworthy

was that the Antarctic claimant states allowed other states unimpeded access to work in, and even build bases in, claimed territories—something almost unthinkable in other parts of the world. Political tensions were, unsurprisingly, not completely erased, something seen in particular in the depiction of territorial claims on maps. The location of many Antarctic bases, too, was motivated not by scientific considerations but by political ones.[25]

While tensions over the Antarctic were in principle put to the side for the duration of the IGY, in France the political reality of mass activity on the white continent could not be ignored. "It has been announced that the Americans will equip 50 boats, an air and submarine fleet, with an expeditionary corps of 10,000 men, as well as colossal vehicles built to roll over the ice despite its cracks and chasms," *Revue des deux mondes*, a respected cultural, literary, and current affairs periodical, announced in 1955: "It is thus an enterprise that seems as political as it is scientific."[26] Describing the IGY as a combination of "cooperation and rivalry" in *Le Monde*, Paul-Emile Victor pointed out that France needed to join the "crowd" making its way to the Antarctic or risk being excluded from the continent's future.[27] And as the writer Xavier Reppe reminded his country, France had a poor record of conserving the fruits of its explorers, having already lost Bouvet, Prince Edward, and Marion Islands, and having failed to protest when the British annexed the Antarctic Peninsula.[28] As other countries made their interest in and ambitions for the Antarctic visible, the French government came to realize that France could scarcely stay out and hope to retain a claim to authority over a slice of the Antarctic pie. The lack of French presence in Terre Adélie since early 1953 took on new meaning: only with presence could France demonstrate sovereignty over this territory. Soon, the government committed almost 1.5 billion francs for the IGY, of which 900 million were earmarked for bases in Terre Adélie.[29] This amount was widely criticized by scientists and in the media as being too low, leaving France at risk of being eclipsed by other countries with higher budgets, but it was grudgingly accepted as the best possible outcome given the enormous financial pressures of the situation in Algeria.[30]

In France, the Academy of Sciences took charge of preparations. These efforts were led by R. Pierre Lejay, the Jesuit geophysicist who had long been a vocal opponent of Victor and Expéditions polaires françaises. Lejay soon recruited Bertrand Imbert to head France's Antarctic program for the IGY. During the war, Imbert had joined the Free French Navy, operating in North Africa and landing on the Normandy coast in June 1944, where his frigate, *La Surprise*, protected the American battleship *Augusta* from German attack. After a brief postwar stint in Indochina, Imbert was seconded from the navy in order to participate in Expéditions polaires françaises' expeditions to Terre Adélie. When he was contacted by Lejay, he cut short a hydrographical expedition in Morocco

to return to France. It was immediately clear to Imbert that only one organization in France had the logistical know-how to operate in the Antarctic: Expéditions polaires françaises. But for years Lejay had been combative toward Victor and his organization, criticizing them in Parisian political and scientific circles, accusing them of scientific and logistical shortcomings and of wasting public funds.[31] Given his eminence, Lejay's words carried weight, especially in the Academy of Sciences, where he found sympathetic ears. There was also a feeling in the upper echelons of the academy that the private nature of Expéditions polaires françaises was problematic as it meant that the government lacked control over the organization. But practicalities settled the matter quickly: as Imbert pointed out, only Expéditions polaires françaises could get the job done. A contract was soon signed stipulating that the Academy of Sciences would define the scientific work to be done while Expéditions polaires françaises would be responsible for operations and logistics. The French Army was involved, too, lending Imbert heavy tracked vehicles for transport in Terre Adélie, the protracted negotiation of which made clear that Expéditions polaires françaises' previous dispute with the navy colored the way the entire French armed forces saw Antarctic endeavors.[32]

Imbert planned three expeditions to Terre Adélie for the IGY: a preparatory expedition in 1956, followed by two scientific expeditions from 1957 to 1959. In October 1955, the first team left France aboard the *Norsel*, packed to the brim with materials to build and supply two bases, as well as five tracked vehicles, an enormous tractor, and sleds. Wooden crates were piled every which way on the deck and no space, however small, was left empty. On the day of departure, gray and overcast, hundreds of family and friends lined Rouen's concrete dock, the men dressed formally in suits and long coats, the women wearing hats, and the children stiff in school uniforms.[33] As the *Norsel*'s Norwegian captain, Guttorm Jakobsen, sounded the ship's horn three times, all the men assembled on the bridge for the departure. Robert Guillard, the leader of the preparatory expedition, was struck by the enormity of leaving his wife and infant son, Thierry, for over a year.[34]

Expéditions polaires françaises had been forced to lease the *Norsel* from Norway after the split with the navy and the loss of the (in any case largely inadequate) *Commandant Charcot*. The *Norsel* had originally been built as an icebreaking tug for the *Kriegsmarine* by the German occupiers of Norway but was not finished before the end of the war. After the war, it was purchased by a Tromsø-based company and fitted out for sealing. Before being chartered by the French in 1955, the *Norsel* had visited the Antarctic as part of the Norwegian-British-Swedish Antarctic Expedition (1949–1952) and the Falkland Islands Dependencies Survey (1954–1955). Known as *Polarbussen* (the Polar Bus), the ship

was scarred from its many encounters with the ice, neglected and sad in appearance.[35] But Imbert knew that its captain and his Norwegian crew had a stellar reputation. Still, that France was leasing a foreign ship to access Terre Adélie was a point of contention: why, Reppe asked, when the Americans, the Soviets, and the British owned massive polar icebreakers, did France "need to relegate herself to the last rank, by continuing to lease a foreign ship of 600 tons [which can only] transport twenty-five people and less than 200 tons of cargo?"[36]

After leaving Rouen, the *Norsel* called at Algiers, Aden, Melbourne, and Hobart en route to Terre Adélie. Through the Suez Canal, it had a military escort due to ongoing tensions between France and Egypt. And when the ship reached the Red Sea, Captain Jakobson stopped to allow his passengers to bathe in the biblical waters. This preparatory expedition also marked Paul-Emile Victor's first trip to the Antarctic. Victor, who had flown to Australia to avoid the months-long sea journey, joined the ship in Melbourne. Previously, Victor had been too involved in Expéditions polaires françaises' work in Greenland to travel to Terre Adélie.

The *Norsel* arrived in Terre Adélie on New Year's Day 1956, almost three years to the day since the last French presence in the Antarctic territory. The fourteen-member team, led by Guillard, was tasked with building two bases and preparing them for the opening of the IGY on 1 July 1957. A veteran of the Resistance, Guillard had assisted in the liberation of Lyon and the campaign in Alsace. After the war, he entered the *École militaire de haute montagne*, where he specialized in the maintenance of tracked vehicles. During a sojourn in Austria to practice high-mountain parachuting, he met Victor. Recognizing Guillard's technical aptitude, Victor asked the young man to join Expéditions polaires françaises. Between 1948 and 1951, Guillard spent nearly all his time in Greenland—but still he found time to become a national bobsleigh champion and compete for France at the 1952 Winter Olympics in Norway. Between his close friendship with Victor, his vast experience in polar environments, and his unparalleled technical know-how, Guillard was a natural choice to lead the preparatory team to Terre Adélie.

It took Guillard and his men two weeks to unload supplies from the *Norsel* by hand, laboriously, one item at a time, until a mountain of wooden crates sat upon the exposed rock, each one labeled in black stenciled lettering, an edifice of great curiosity for the many penguins who crowded around. Rather than rebuild at the hellishly cold and windy Port-Martin site, the new main base was situated at the site of Mario Marret's old hut on Île des Pétrels, near the Emperor penguin rookery, a location with marginally calmer weather. The base was named Dumont-d'Urville in honor of the French explorer who had discovered the territory. Upon arrival at the site, Guillard and Victor found Marret's hut still in-

tact, with the welcoming note, candles, and dried flowers left three years earlier, all atop a checkered green tablecloth. Thanks to the lessons of the Port-Martin fire, Dumont-d'Urville was built from prefabricated metal buildings erected on scaffolding over the irregular rock surface: fireproof, lightweight, and able to withstand the weight of snow accumulation. The base consisted of living quarters, a workshop, a kitchen, a mess, a bathroom, a darkroom, a laundry room, and sleeping quarters, all kept warm—or at least tolerably warm—by fuel oil generators. In anticipation of the base being buried by snow, the windows were almost all in the roof (figure 13). Surrounding the main base were eleven small wooden shelters for scientific work, as well as a garage for maintaining the tracked vehicles and sleds.[37]

The preparatory team then transported a second, smaller base over the ice sheet to a site near the magnetic south pole, 320 kilometers south of the Dumont-d'Urville base, in preparation for two three-man overwinters to take place during the IGY. The base and supplies (including 360 kilograms of flour, 35 kilograms of lentils, 15 kilograms of carrots, 1,200 packs of cigarettes, and one game of Monopoly), a total of more than forty tons, were mounted on long skates and towed by Sno-Cats and Weasels, tracked vehicles specially built for polar conditions. The team of seven men, led by Guillard, left Dumont-d'Urville in early October 1956 and only arrived at their destination at Christmas: ferocious weather prevented them from traveling for 100 of the 120 days of their traverse.

FIGURE 13. The first two buildings for the Dumont-d'Urville base, built for the International Geophysical Year, 1956 (Archipôles, IPEV).

One-meter-deep sastrugis—snow dunes, as smooth as marble and as hard as rock, easily capable of breaking Caterpillar tracks—reduced the average speed to five kilometers an hour and the vehicles struggled to stay upright in the howling winds and uneven terrain.[38] Guillard's years of experience maintaining and repairing tracked vehicles proved essential to the traverse's success. The immense difficulty of this overland traverse highlighted the lack of French aviation capacity in the Antarctic: Imbert would have preferred to establish the inland base with air support, but he could secure neither an airplane nor the help of the Armée de l'air.[39] This lack of aviation capacity would become a recurring theme over the following decades.

Arrival: snow as far as the eye could see in all directions, a white desert stretching to the horizon, not smooth but ridged and sculpted by the wind, rough edges throwing shadows helter-skelter, no indication other than from the sextant that they were in the right place. To the Frenchmen, it was at once nothing and everything: the blankest of slates, the riskiest of endeavors, and the most necessary. Exhausted from the arduous traverse, the men still needed to build the base from prefabricated semicylindrical sections of sheet metal, a form designed to withstand the pressure of snow accumulation, and dig out a 130 cubic meter hole by hand to accommodate it.[40] When this was completed, the base, named Station Charcot, was slid gently into the hole by two Sno-Cats. During the first night, a blizzard hit, whipping snow like froth and completely burying the base. The following morning, only the two ventilation shafts and the radio masts, which reached several meters up into the air, were visible. Station Charcot looked like a submarine frozen into the ice (figure 14). Atop one of the masts flapped the French flag, a declaration of France's presence in the deep interior of Terre Adélie. For the entirety of the IGY, the base could only be accessed via trapdoors in the roof.

Early in 1957, the second French team arrived in Terre Adélie. The voyage, again aboard the *Norsel*, had been long and dull: with the nationalization of the Suez Canal by Egyptian president Gamal Abdel Nasser, the ship was forced to take the long route around, passing through the Panama Canal.[41] The team of twenty-three men, led by Imbert, found their quarters uncomfortable, smelly, and cramped, and many suffered from weeks of seasickness. Upon arrival in Terre Adélie, they installed scientific equipment at the Dumont-d'Urville base and, with the official launch of the IGY on 1 July 1957, began a year of data collection and studies. Their work was continued by the third team, which arrived in 1958, led by Gaston Rouillon, an alpinist and veteran of three expeditions to Greenland. The French scientific program included extensive work on high-altitude circulation, katabatic winds, snow accumulation, ice thickness, magnetism, the high atmosphere and ionosphere, and south polar auroras.[42] In the

FIGURE 14. Station Charcot buried in the snow, 1957 (Archipôles, IPEV).

spirit of the IGY, the team at the Dumont-d'Urville base was also in daily radio contact with the Soviet teams at Mirny and the American teams at McMurdo, and weekly contact with the British, New Zealanders, and Australians.

Of the twelve countries who built bases in the Antarctic during the IGY, only three—France, the United States, and the USSR—dared to overwinter in the continent's interior. For Imbert, the two overwinters at Station Charcot were not debatable: France *needed* to be present in the continent's interior, a need as essential for political considerations as for scientific ones. It was a risky endeavor with no chance of rescue should something go wrong over the long austral winters, with their extreme cold temperatures, ferocious winds, and powerful blizzards. Overwintering in the interior was meant to prove French capability on the great ice sheet, to demonstrate the success of made-in-France polar technologies, and to send a clear message about future ambition. Acutely aware that the United States and the USSR were investing much more heavily in the Antarctic, Imbert and the Academy of Sciences saw Station Charcot as an essential symbol of France's commitment to the white continent.[43] The choice of location, too, was symbolic. By situating Station Charcot near the magnetic south pole, Imbert carved out a place for France in the landscape defined by the two superpowers: the American interior station, Amundsen-Scott, was located at the geographic South Pole and its Soviet homologue, Vostok, at the southern pole of inaccessibility.[44] Indeed, Station Charcot provides the quintessential example of

what Aant Elzinga calls the "siting of new research stations [based on] the political need to demonstrate a presence."[45] Entirely cut off from the rest of the world with no possibility of relief, escape, or help, the two teams of three Frenchmen endured twenty-four-hour darkness and temperatures that plunged to minus 40°C in their laboratory.[46] Indeed, the project was so risky given the limited means at Imbert's disposal that he had a hard time convincing his superiors to give it the green light. He did so by taking preparatory measures to the extreme: among other precautions, the men who were to spend the year at Station Charcot had their appendixes removed before they left France.[47]

Station Charcot was very much the poor man's effort: whereas the United States and the USSR used airplanes and enormously long trains of tracked vehicles to transport large teams of men and thousands of tons of material into the interior from their respective coastal bases of McMurdo and Mirny, the French effort was small and entirely dependent on small-scale land transport. These arduous traverses saw their passengers imprisoned for days on end in the vehicles while storms raged outside. With the motors off to save fuel, the cold was biting, and between the lack of visibility and howling blizzards, the men endured extreme discomfort when venturing outside to relieve themselves. The French traverses were mentally trying—as were the overwinters at Station Charcot. Near misses included carbon monoxide poisoning and the only man with extensive medical training falling seriously ill. A windmill, which was supposed to generate electricity for lights and radio contact with Dumont-d'Urville, also failed catastrophically during the first winter. When he had not heard from Station Charcot in weeks, Imbert, who was overwintering at Dumont-d'Urville, had to decide between sending out an overland rescue team in the heart of the polar winter—by any estimatation, an extremely risky proposition—or asking the Americans or Soviets for help. In the end, he did ask the Soviets for a reconnaissance flight over Station Charcot, but with no radio contact and perpetual darkness, there was no chance of finding the station from the air. Even given the spirit of the IGY, this reliance on a foreign country to come to the help of Frenchmen in a French territory did not bode well for sovereignty. All this was a far cry from the American and Soviet interior stations with their sophisticated facilities, creature comforts, and air links to the coast. At Amundsen-Scott, located at the South Pole, the Americans enjoyed barracks, a galley and mess hall, a photography lab, a chapel, a garage, and several buildings for scientific work.[48] There, the eight scientists were supported by another eight naval personnel. Still, the men at Station Charcot found ways of alleviating the harsh conditions of their overwinter: at midwinter, on 21 June 1957, they enjoyed a special dinner including Tahitian punch, asparagus and ham, vol-au-vent, chicken, chocolate biscuits, fruit tart, coffee, and cognac.[49]

FIGURE 15. A stamp issued by France for the International Geophysical Year—note Terre Adélie highlighted in the bottom left.

Even though the IGY was designed to be apolitical, and there was tacit agreement among the participating nations that political arguments over Antarctica were to be put to the side for its duration, still performances of sovereignty were common. In addition to flying the tricolore over the two bases, the French also issued several new postal stamps declaring their presence in Terre Adélie, erected plaques and monuments, and printed postcards and other paraphernalia highlighting the "French Antarctic" (figure 15). And in 1958, the French president, René Coty, received and congratulated Imbert and the members of his Antarctic expedition, decorating them with the *Étoile noire du Bénin* for their contributions toward *rayonnement* and France's influence in the world.[50] The choice of this award was carefully made, and represented Terre Adélie's rising importance to France's overseas stature in a time of rapid territorial loss.

French scientific work during the IGY cemented the country's reputation as a powerhouse in Antarctic science—something that would bring benefits for decades to come. Most immediately, this status was recognized when, upon the creation of the Scientific Committee on Antarctic Research (SCAR) in 1957–1958, the French geographer Georges Laclavère was elected as its first president.[51] But despite France's scientific successes during the IGY, it ended in tragedy on 7 January 1959 when, just hours before the *Norsel* was due to arrive and transport the third expedition team back home, the meteorologist André Prud'homme

disappeared in a blizzard while taking measurements only two hundred meters from the Dumont-d'Urville base. He was presumed drowned.

Toward the Antarctic Treaty

Far from being an isolated event, a self-contained year and a half of intense scientific work, the IGY ultimately transformed Antarctic politics and laid the groundwork for the continent's future management. At its best, the IGY offered a vision of Antarctica as a cooperative laboratory for scientific inquiry, a place of mutual advancement of human knowledge, even of friendship and peace. The idea of returning to the pre-IGY state of rising tensions in the Antarctic, especially given the enmity of the Cold War and the impact of the East-West divide on geopolitics, was far from desirable. The Antarctic stood out as a pristine environment, one of the least touched places on Earth, and there was a growing desire to protect it from becoming yet another site of military buildup.

Even before the IGY officially opened, there was already debate about what would follow. In December 1956, six months before the IGY got underway, the United States proposed a one-year continuation, and many participating countries readily agreed to extend their work and international cooperation for an additional year. In France, the possibility of an additional year led to a heated debate: Expéditions polaires françaises and many French scientists were in favor, but the government—the holder of the purse strings—was hesitant. There was also opposition from some scientists, led by Lejay, who were still unhappy with Victor's hold over French polar science. With Lejay's death in 1958, however, this opposition foundered. While the government had committed to fund France's participation in the IGY itself, it had little interest in extending this support, especially given the financial burden of the war in Algeria. The funding for the Dumont-d'Urville base and Station Charcot had been intended to support expeditions between 1956 and 1959, full stop. Indeed, the plan for the third and final expedition explicitly included closing the two bases and ending French presence in Terre Adélie. This was part of a broader state disregard for Terre Adélie, underpinned by a belief that the territory lacked the prestige of France's other overseas possessions.[52] Victor, still fuming from the abandonment of Terre Adélie after the Port-Martin fire, was furious at the thought that it might again be left bereft of French presence. He lobbied the government, arranging for meetings with the president and pressing his case, all in pursuit of an extended mandate.[53] But it was not until pressure was applied from outside that Victor got his way.

By the time of the IGY, the political situation in the Antarctic had changed significantly from the interwar years. While Britain, its Dominions, France, and Norway all made claims to Antarctic territory in the interwar period, the massive logistical difficulties of operating in such an inhospitable place meant that they installed no permanent facilities and conducted little or no activity in the claimed territories. Indeed, in France, the sheer difficulty of accessing Terre Adélie was seen to justify complete absence from the territory. But this vision of the Antarctic Continent began to change during the war. The IGY then saw the installation of bases (some very sophisticated), the construction of ice runways and complex radio networks, and regular incursions of icebreakers and large cargo planes. Antarctic logistics, while still difficult, were no longer in the realm of the impossible. As such, the standards for effective occupation also changed. The closure of the French bases, Victor knew, would greatly weaken the claim to sovereignty over Terre Adélie.

At the same time, US president Dwight Eisenhower proposed an international conference to discuss the future of the Antarctic. Eisenhower addressed the eleven other countries active in Antarctica during the IGY: France, Britain, the USSR, South Africa, Belgium, Japan, Australia, Chile, New Zealand, Norway, and Argentina.[54] "It would be desirable for countries who participated in the IGY Antarctic program to agree on a program to assure the continuation of successful scientific cooperation," said Eisenhower: "Such an agreement could also have the advantage of avoiding political rivalries, needless and undesirable on this continent, the waste of funds intended to defend isolated national interests, and the return of frequent international disagreements in this territory."[55] In this, the United States was strongly influenced by a desire to limit Soviet activity in the Antarctic, and saw internationalization as a peaceful and effective means of doing so. American officials were also motivated by the lack of any major minerals findings (or indeed any findings of economic significance at all) in the Antarctic during the IGY, which suggested that the United States would not be missing out on an economic bonanza by pushing for internationalization.

From mid-1958 to mid-1959, at the height of the Cold War, the twelve countries—including the two rival superpowers—embarked on a marathon of over fifty meetings in Washington to define Antarctica's political future.[56] Rather than solving the thorny political problems facing the continent, the United States proposed freezing the legal status quo: no country would have to renounce its historic rights or claims and no country would be able to make new claims or accrue rights from its activities on the continent for the duration of the treaty. This careful structure protected the interests of all countries at the table despite a tripartite division of views on sovereignty. This division consisted of those

countries with mutually recognized claims to parts of the Antarctic based on discovery and territorial acquisition (Britain, France, Australia, New Zealand, and Norway); those countries with mutually recognized claims based on inherited territorial rights from the Treaty of Tordesillas of 1494, as well as geographical proximity and continuity and related "natural rights" (Chile and Argentina); and those countries who had not made formal claims but who reserved the right to do so or were interested in possibly doing so.[57] The United States and the USSR, in particular, saw the continent as a *terra nullius*, a land that belonged to no one. That the Argentinean and Chilean claims overlapped with the British claim further complicated matters.

In order to prevent the continent from being pulled toward militarization, the United States also proposed to make the Antarctic a nonmilitarized and nuclear-free region—something that both supported long-term American interests and spoke to broader international concerns about the white continent. These proposals were deeply pragmatic: the two superpowers saw them as the best possible way of avoiding confrontation and, simultaneously, preventing the other from gaining any strategic advantage.[58] The claimant countries saw the proposals as a solution to the impossibility of defending their claims by conventional military means, should tensions reach that point. Further, an agreement among the twelve, and especially an agreement built on science as a cohesive and unifying force, was a means of keeping outsiders (such as the United Nations) out of the continent's management. In short, the twelve countries involved came to believe that their interests in the Antarctic, disparate as they might be, would be best protected by a treaty along the lines of that proposed by Eisenhower. This is perhaps best summarized by the British diplomat John A. Heap, who wrote that the treaty was propelled not by altruism but by practical judgments: "The parties gained little from [the Antarctic Treaty] but what they all, variously, have stood to lose without it made the exercise worthwhile."[59]

With this stance, the United States made it clear that it was not going to pursue any claim to territory in the Antarctic. By the 1950s, the United States only had two possible courses of action toward a claim: making a claim to the unclaimed sector of the continent, widely seen as the least valuable region, or challenging other nations' claims, all of whom were partners in important Cold War defense and security alliances. Further, if the United States were to make a claim, the Soviets would inevitably follow suit—not something the Americans wanted to encourage. And after the IGY, when the Soviets declared their intentions to remain active in the Antarctic, the United States saw internationalization as a solution to both the Soviet problem and American scientific aspirations.[60] In the balance of things, an agreement that the Antarctic would be used only for peaceful purposes and guaranteeing free access to the continent to Ameri-

can scientists offered distinct advantages over a troublesome claim to the United States.

The American decision to not pursue a claim was also a reaction to the escalating dispute between Britain (on one hand) and Argentina and Chile (on the other), whose Antarctic claims overlapped. Argentina laid formal claim to land in the Antarctic in 1942, when a military expedition placed a copper cylinder containing an official notice and a flag on Deception Island. This claim added a new dimension to the long-standing British-Argentine dispute over the Falkland Islands, leading to an increasingly acrimonious bilateral relationship and opening the door to a complete breakdown in the Antarctic Peninsula region. The United States was left in the uncomfortable position of potentially having to choose between a significant European ally and important Latin American relationships. As the dispute deepened, the specter of military confrontation in the Antarctic loomed. In this context, internationalization offered a peaceful solution to the British-South American dispute in which the United States could maintain its desired neutrality.

The potential of a treaty for the Antarctic—something long-term and carrying international weight—changed the debate in France. In mid-1958, the Conseil de Cabinet decided, on recommendation from the Overseas Ministry, to permit one more year of work in Terre Adélie to coincide with the extension of the IGY. But the government's commitment was restrained: it did not provide any substantial funding. Rather, money for the additional year came from Expéditions polaires françaises, which had raised funds privately since its inception in 1947, primarily from the sale of photographs and books and from tickets to exhibitions, films, and speeches. The subsequent year was a reduced campaign with the simple goal of continuing the momentum of the IGY and hopefully bridging to permanent presence in the territory. The additional expedition, decided on at the last minute, had to be put together in a rush. A team of twelve men under the leadership of René Merle arrived in Terre Adélie in late January 1959. Their overwinter was difficult, defined by maintenance tasks and fixing the scientific instruments that had been used continuously for two years, but they also managed to conduct some territorial reconnaissance and draw a geological map of Terre Adélie's coastline.[61]

TAAF, too, was pushing for continued French presence in Terre Adélie, seeing presence as the kingpin for maintaining French sovereignty over the district. TAAF joined Victor's lobbying effort, pressuring the government to commit to permanent presence. The left-wing media also called for the government to not pull out of the Antarctic so that, as *Le Monde* put it, "France [would] have a stronger position during the discussion on the future of the Antarctic."[62] The esteemed law professor René-Jean Dupuy summarized a growing feeling when he

wrote that France could only defend its claim to Terre Adélie by keeping the Dumont-d'Urville base open and demonstrating "real occupation" of the territory.[63] Together, these voices argued that, with the continent's future under intense scrutiny, French sovereignty over Terre Adélie could not be assured by sporadic presence; rather, to guarantee its rights in Terre Adélie, morally, legally, and politically, France needed to commit to permanent presence.

With the return of Charles de Gaulle as prime minister in mid-1958 and then as president soon afterwards, these advocates found the political opening they needed.[64] With its implications for prestige, overseas reach, and relations with the United States, French activity in Antarctica fit neatly into the Gaullist worldview. Soon, motivated by the negotiation of the Antarctic Treaty and by growing American activity on the continent, de Gaulle committed France to continued and continuous presence in Terre Adélie.[65] This decision was both a concrete step toward rebuilding France's prestige and *grandeur* and part of his broader, systematic effort to distance France from the United States while remaining Cold War allies—a balancing act designed to underline France's independence.

De Gaulle's obsession with independence had its roots in both his complete dependence on Britain during the war and France's dependence on the United States for postwar credit and reconstruction. It also stemmed from resentment of his treatment by Eisenhower and Roosevelt during the war and by the great powers immediately after the war. The allies took time to recognize the legitimacy of de Gaulle's provisional government and France was invited neither to the September 1944 meeting of the new United Nations Security Council nor to Yalta in February 1945. Determined to rebuild a stronger, autonomous France, de Gaulle pushed for an independent nuclear deterrent, which would ensure France's place as a permanent member of the UN Security Council and make a strong statement about French capability and sovereignty. It was also the basis for his 1966 decision to withdraw France from the North Atlantic Treaty Organization's integrated command structure and to demand that the United States remove its thirty bases and nearly thirty thousand troops from French territory.

In the wake of the Suez Canal crisis, de Gaulle was primed to distance his country from the United States as far as practically possible given the Cold War in all spheres, whether they be political, military, economic, or cultural. In the Antarctic context, de Gaulle deplored the idea of depending on the United States to affirm French rights in Terre Adélie—and the only way to prevent this, he agreed with Terre Adélie's advocates, was with continual French presence. At the same time, de Gaulle was motivated by the desire for France to keep pace with other countries in the Antarctic: "France, which possesses Terre Adélie, cannot remain absent in a land where all her neighbors maintain numerous and permanent bases," as one of his secretaries of state declared.[66] In this respect,

too, de Gaulle was concerned about the United States' immense financial and technological advantages in the Antarctic arena. Similar forces were at work when it became clear that the USSR would not vacate the Antarctic after the IGY. In practical terms, de Gaulle's decision meant that the Dumont-d'Urville base would remain open and continually occupied by teams of French scientists and technicians, managed and operated by TAAF and Expéditions polaires françaises.

Of central importance to de Gaulle was to restore France's honor, *grandeur*, and rank among the great powers. While the idea of "grandeur" radiates through France's past, the war and its aftermath—and especially decolonization—called into question the future of French identity.[67] The gap created by the Vichy regime during the war and the revolving-door governments of the Fourth Republic, beset by ministerial instability and political crises, threatened France's status on the world stage—a status that was dear to the political landscape advanced by de Gaulle. And the winding down of the second empire forced the country to confront the tight link between *grandeur* and domination, to find new ways to showcase French prestige globally. During the war, the empire contributed in no small way to the liberation of the Hexagon, in strategic terms and by supplying colonial troops—and after the war, when France was so weakened at home, the empire provided a basis for the country to reclaim its status as a world power. This is why, as soon as the war in Europe was over, France looked to rebuild its imperial presence in the Levant, Indochina, and Africa. But when de Gaulle returned to power in 1958, that idea of France was finished. With the independence of significant former French colonies in the 1950s, and with the path set for Algerian independence, de Gaulle's vision of France as a *puissance mondiale moyenne* (midsized world power) demanded a stronger hold over France's remaining overseas possessions.

By the end of the 1950s, it was clear that the vision of the French state as a territorial entity that reached around the world—something intrinsic to the Fifth Republic's 1958 constitution—was now dependent on smaller and more remote possessions such as Mayotte, Martinique, Djibouti, Réunion, New Caledonia, French Polynesia, and Terre Adélie.[68] As Jean Chesneaux reminds us, these lands were "no longer seen as mere French possessions in the old colonial tradition but as intrinsic parts of France itself; they stand as *terres de souveraineté*, lands under French sovereign jurisdiction, a term dating back to the expansionist policies of Louis XIV."[69] More and more, they became central to France's influence and presence internationally. In this context, the four TAAF districts, with no Indigenous populations, stood out as secure overseas regions: remote, often overlooked, and yet increasingly relevant to demonstrating France's presence far from the Hexagon and to providing a basis for rebuilding French prestige unmarred by a colonial past. Indeed, as TAAF's former chief administrator François Garde

has written, "In a deserted continent where the great tide of decolonization will never reach, the assertion of the tricolore is a discreet form of revenge on history."[70] By committing to continual French presence in Terre Adélie, de Gaulle offered a boost to his country's national pride at a time of immense change, a way forward from what were widely seen in France as humiliating failures in Indochina and Algeria. In this context, Terre Adélie gained importance "in the eyes of all who want France to remain *grande*."[71]

Victor capitalized on the sympathetic mind he found in de Gaulle, meeting with him several times to push his case and writing to him on a regular basis. De Gaulle was warm toward the dean of French polar exploration, disposed to his cause and also of practical help, pushing other ministries to do Victor's bidding and even occasionally conjuring up more money in response to Victor's frequent requests.[72] De Gaulle also personally met with members of Expéditions polaires françaises at the Elysée palace and wrote letters to Victor and his teams at least annually congratulating them and showing his support for French Antarctic presence.[73]

Negotiating a Future

During the negotiation of the Antarctic Treaty, which took place from mid-1958 until the end of 1959, France's interests were represented by Pierre Charpentier, who headed the French delegation in Washington. Trained in law, Charpentier joined the diplomatic service in 1929, serving in London, Moscow, and Rabat before the war. A Resistance fighter and member of the *Forces françaises de l'intérieur* (French Forces of the Interior) during the war, Charpentier was again posted to Moscow in 1944. Over the next decade, he worked at France's embassy in Romania and led the French delegation to the Organization for European Economic Co-operation as well as France's trade negotiations with the USSR before being named ambassador to Greece. By the time the Antarctic Treaty negotiations opened, Charpentier was a senior diplomatic adviser to the French government.

Led by Charpentier, France came out fully in favor of military neutralization and scientific cooperation in the Antarctic. Military neutralization appealed to France for the same reasons it appealed to the other countries at the table: it removed both a set of potential threats to Terre Adélie and the intractable question of how the territory might be defended militarily. For France, too, whose Antarctic presence had essentially never had a military component, a demilitarized continent was a hedge against any future Operation Highjump. And the idea of Antarctica as a continent dedicated to science was appealing to France

given the country's scientific successes in the early 1950s and during the IGY: with science as currency, the French would be rich in Antarctic terms, able to project authority and command respect. Charpentier pointed, too, to the political will in France to increase scientific cooperation in the Antarctic, another means of pushing back against American hegemony. In this respect, Expéditions polaires françaises' focus on science in the early 1950s was vindicated, while the French Navy's position seemed ill-thought-out.

More difficult for the French negotiators was the concept of sovereignty in Antarctic space. For Charpentier and his political masters, French sovereignty over Terre Adélie was written in stone, stretching back to Dumont d'Urville's discovery of 1840. Pointing to de Gaulle's commitment to continual presence, Charpentier noted that "the French Government is proud, in addition to having indisputable historical claims, to be able to rely on a permanent occupation."[74] The idea of relinquishing or weakening that sovereignty was anathema to the government, which saw France's slice of the Antarctic pie in the larger context of French overseas possessions and ambitions. But it was equally clear that any treaty would have to balance the positions of claimant and non-claimant states, something that could only be done by acknowledging but not fully recognizing existing territorial claims.

Tasked with winning the French over to the idea of "freezing" sovereignty claims, the US State Department legal adviser Herman Phleger and diplomat Paul C. Daniels spent considerable time negotiating with their French counterparts in the months leading up to the conference. Determined not to weaken France's claim to Terre Adélie, the French remained resolute.[75] Three days before the Washington Conference on Antarctica opened, Charpentier called on Phleger and Daniels and declared that France would "under no circumstances" agree to an article that inhibited the recognition of France's claim to Terre Adélie: "On the highest levels it had been decided that French sovereignty in Antarctica should not be prejudiced by any treaty which provided that the other parties reserved their position that such claims were not recognized," declared Charpentier.[76] Charpentier delivered the same message to Richard Casey, the Australian minister for external affairs and head of Australia's delegation to the conference.

As the negotiations progressed, Charpentier maintained this stance, calling for the freezing of sovereignty claims proposed in the draft treaty text to be diluted since it "implied a legal negation of France's rights in Antarctica and was, therefore, unacceptable to France."[77] On this, however, he found himself alone: other national representatives, including from Britain, the United States, Australia, Norway, and the USSR, believed that altering the draft text would upset the delicate balance between claimant and non-claimant states—a balance

being tested on other fronts at the same time.[78] France's intransigence was due to both an unyielding position on sovereignty and uncertainty over the constitutionality of signing a treaty weakening any claim to sovereignty. France, the state with the smallest claim, was proving the least flexible of the participants. As he wrote in his diary, Casey feared the French position would "destroy the conference and treaty."[79]

When Charpentier privately made it clear that any change in the French position would have to be taken up at the highest levels of government, Casey did just that. Complaining personally to the French foreign minister, Maurice Couve de Murville, Casey warned him that by proving the least flexible of all the participating countries, France was playing at ruining the entire treaty conference.[80] His case was helped by the chief of Soviet Antarctic expeditions and president of the USSR's geographical society, who chose that moment to describe French sovereignty over Terre Adélie as "imagined."[81] Indeed, it was the Soviet threat that finally won the French over: as Casey pointed out to Couve de Murville, a freezing of claims was the best way of countering Soviet ambitions in the Antarctic, which might include claims to any sector, including Terre Adélie. Australia was especially provoked by the USSR's decision to open research stations in the Australian Antarctic sector, which stoked fears that the Soviets would establish secret missile bases from which they would be able to threaten major Australian cities—fears Casey enunciated clearly to the French.[82] As other countries piled on, ultimately isolating the French, the die was cast. Couve de Murville wanted neither to lose out to the Soviets nor for France to be blamed for a failed treaty conference. Charpentier's instructions were reversed and, after insisting on small changes to the article's language, he announced that France was willing to agree to a freezing of claims. France also succeeded in having French included as one of the four official treaty languages, along with English, Russian, and Spanish—a reassurance of prestige with which Norway, also a claimant state, had to do without.

The Antarctic Treaty was signed in Washington on 1 December 1959 and entered into force in June 1961. The treaty banned all military measures, including bases, fortifications, maneuvers, and weapons tests south of the 60th parallel (with an exception for logistical presence). It also enshrined Antarctica as a land of open scientific investigation and maintained the legal status quo of sovereignty claims in their present state for the duration of the treaty. The article pertaining to sovereignty, Article IV, reads as follows:[83]

1. Nothing contained in the present treaty shall be interpreted as:

   (a) a renunciation by any Contracting Party of previously asserted rights of or claims to territorial sovereignty in Antarctica;

(b) a renunciation or diminution by any Contracting Party of any basis of claim to territorial sovereignty in Antarctica which it may have whether as a result of its activities or those of its nationals in Antarctica, or otherwise;
(c) prejudicing the position of any Contracting Party as regards its recognition or non-recognition of any other State's right of or claim or basis of claim to territorial sovereignty in Antarctica.

2. No acts or activities taking place while the present treaty is in force shall constitute a basis for asserting, supporting or denying a claim to territorial sovereignty in Antarctica or create any rights of sovereignty in Antarctica. No new claim, or enlargement of an existing claim, to territorial sovereignty in Antarctica shall be asserted while the present treaty is in force.

This article is often called the "miracle" of the Antarctic Treaty, as it allows states with conflicting interests to interpret its meaning to suit their purposes. It is precisely on this basis that France was able to accept it: France has consistently interpreted Article IV as in no way weakening its claim to Terre Adélie. Charpentier made this point clearly at the end of the negotiations, asserting that "on the occasion of signing the Antarctic Treaty, the Republic of France reaffirms the sovereignty that she exerts over Terre Adélie."[84] In France, the treaty was also interpreted as respecting the historical actions of Antarctica's early discoverers, in particular Dumont d'Urville, and hence as lending support to France's claim.[85] Since signing the treaty, France has consistently maintained that "in signing and ratifying the Antarctic Treaty the claimant States have in no way renounced their sovereignty and that this is especially true of France in respect of Terre Adélie," as the government put it to the United Nations in 1984.[86] In this narrative, the major discontinuities in France's Antarctic activity (which reached 110 years between discovery in 1840 and the next visit in 1950) do not figure at all; rather, in the French perception of the territory, the country is seen as having a long, proud, historic Antarctic tradition. This construction of an identity narrative is enabled by the lack of any competing narrative: Terre Adélie has neither an Indigenous population nor direct territorial competitors offering an alternative view.

In practice, France has held that continual presence in Terre Adélie is the third essential step, after discovery and formal claim, for sustaining and justifying the territorial claim.[87] With this in mind, France has maintained continual occupation at the Dumont-d'Urville base from 1956 to the present day. This occupation has focused on scientific research, illustrative of the ways in which science has become the lens through which Antarctic legitimacy and influence

are measured.[88] Nonetheless, the treaty has had practical impacts on France's governance of Terre Adélie, including preventing the French state from enacting regulations affecting foreign nationals. Since signing the treaty, France has been actively engaged in the Antarctic Treaty System, assuming a leadership position, determined to maintain an authoritative voice in Antarctic affairs and particularly in shaping how Terre Adélie is perceived internationally.[89] The ATS is paramount to French national interests in the Antarctic: it offers France a political structure through which its claim is stabilized and protected, and it is the mechanism by which France feels best able to wield authority over Terre Adélie itself and the management of the continent more broadly. The ATS also gives France another power base in Antarctic affairs, one that in some senses counteracts France's lack of geographic connection to the continent.

The Calm before the Storm

Underpinned by new commitment, the 1960s saw a steadiness and maturity in French Antarctic affairs. The Antarctic Treaty provided a path for the continent's future, making it clear that science would play a predominant role, and science was one of France's strengths in the region. Activities in Terre Adélie shifted from individual scientific projects and campaigns to long-term plans, from temporary facilities to a better-built and -equipped base. But the decade was also marred by tensions over logistics and Terre Adélie's administrative situation.

Designed for the IGY, the Dumont-d'Urville base was originally built with a three-year lifetime in mind. It was adequate for those purposes, but by no means suited for larger groups over longer periods. Once the stamp of permanence was given to French presence in Terre Adélie, the base needed to be rethought. Improved unloading facilities, including a road between the ship's docking place and the base, were urgently needed: through the IGY, the supply ships were loaded and unloaded by hand over rocky, unprepared terrain, a time-consuming, arduous, and inefficient affair. Victor quickly drew up detailed, long-term infrastructure plans for proper dockside facilities, a road, a quay, a vehicle garage, larger living quarters, and new scientific laboratories.[90] He envisioned a base capable of comfortably hosting forty people over the winters and twice as many during the austral summer crossovers, suited for the climate, pleasant rather than utilitarian—all in keeping with his view that polar expeditions had entered a modern scientific age, one that left the hardships of the earlier era of adventuring behind.

Victor's plans were soon approved by his government masters and work began in earnest in the summer of 1962. That season, the scientific program was

reduced in order to maximize progress on infrastructure. Priority was given to new generators to more than quintuple the base's power capacity and to scientific facilities for the upcoming International Years of the Quiet Sun (1964–1965). Over the following two years, new laboratories were built for meteorology, magnetism, seismology, cosmic rays, and natural radioactivity. A bar, foosball table, discotheque, and library (complete with comfortable leather chairs and thousands of books and magazines) were added, and the inadequate unloading facilities were transformed with a wharf, five-ton crane, and proper road.[91] Aware of the challenges of isolated overwintering in small groups in a harsh climate, Victor also capitalized on physical infrastructure decisions to improve mental health on the base through the long, dark winters—for example, designing the living quarters to be homey rather than institutional and calling for the personnel to have individual bedrooms. Expéditions polaires françaises had also long insisted that overwinterers be able to be in telegram contact with their families back home at minimal expense.[92] In late 1966, a sleek, modern kitchen was installed, part of a broader effort to make meals a source of pleasure. The stainless-steel kitchen, with humungous ovens, neatly stacked crockery, and copper pans hanging from wall hooks, was the domain of a dedicated chef. "Everyone knows that in France, appetizing meals are indispensable for maintaining morale," wrote the newspaper *Le Monde* in an approving article, noting that suppers at Dumont-d'Urville included gratin dauphinois, veal marengo, and Camembert.[93]

On the ground, this infrastructure work was overseen by Christiane Gillet, Expéditions polaires françaises' chief engineer and one of the first women to participate in expeditions to both polar regions. Gillet, who designed the French Jarl-Joset station in Greenland as well as much of the new construction at Dumont-d'Urville, had both the technical aptitude and mechanical abilities to hold her own in an otherwise exclusively male environment. While other countries forbade women from the Antarctic at this time (the British Antarctic Survey, for example, took until 1983 to allow women to participate in its field programs), Gillet's presence in Greenland and Terre Adélie was not so much a result of French gender or workplace policy as of the fact that Victor and Expéditions polaires françaises considered her indispensable.[94] But while Gillet headed Expéditions polaires françaises' technical section from 1956 until 1998, still she was forbidden from overwintering in the Antarctic, something only opened to Frenchwomen in the 2000s.

Through the 1960s, the maturation of France's place in the Antarctic can be seen through funding, science, logistics, international cooperation, and administration. Economic growth at home meant that money was available to support extensive work at the Dumont-d'Urville base—even if the amount provided was

never enough to satisfy every want. The improvements made to the base in this decade were not just about the comfort of its inhabitants; they were also a physical stamp of French presence in Terre Adélie, a tangible statement about the French claim. Expedition teams grew in size and scope. In the austral summer of 1963, the Dumont-d'Urville base played host to seventy people, a number unimaginable in the days of the early expeditions. Increased means meant bigger projects, such as the launch of Dragon sounding rockets in 1966–1967 by a team of nearly thirty researchers from the *Centre national d'études spatiales* (figure 16).[95] The French conducted joint expeditions with the Soviet Academy of Sciences, including a 1,500-kilometer traverse from Vostok to Mirny led by French glaciologist Albert Bauer. While the Soviets were impressed by Bauer's scientific expertise, the French were equally impressed by Soviet polar logistics.[96] Bauer and his compatriots were transported directly to Vostok aboard a Soviet Ilyushin aircraft. The Ilyushin, flown by the polar aviation branch of Aeroflot, landed on a four-kilometer-long snow runway at Vostok. Unlike the Americans,

FIGURE 16. With penguins in the foreground and the Astrolabe glacier in the distance, a Dragon rocket rises in a plume of combustion gases, 1967 (Jean-Clair Loison, Archipôles, IPEV).

who used jet rockets to enable their planes to take off from snow surfaces, the Russians "just opened the throttles and waited, apparently unconcerned by the time and the distance it took to get lifted by the thin air."[97] This logistical feat underscored France's lack of heavy aviation capacity in the Antarctic and presaged a push for air access to Terre Adélie.

Performances of sovereignty, too, were common through the decade. In 1966, TAAF's chief administrator, Pierre Rolland, inaugurated an official mapping and toponymy commission, the *Commission de toponymie des TAAF*, intended to systematize the giving of historically significant French names to locations in the TAAF districts.[98] The inclusion of Gaston Rouillon as one of the commission's four members underscores Expéditions polaires françaises' influence on French Antarctic affairs at the time. Through this decade, French authorities also pushed back when they sensed that any aspect of France's hold over Terre Adélie was in jeopardy, such as protesting when the Soviets wanted to take over the radio frequency already in use in the territory.[99] More broadly, France hosted the Antarctic Treaty's fifth consultative meeting in Paris in November 1968, at which the French minister of foreign affairs, Michel Debré, made clear his country's commitment to the white continent.[100]

With the Antarctic Treaty, credibility and a strong voice in the Antarctic depended on scientific work and logistical capacity. France excelled at the first but suffered from logistical shortcomings and—contrary to de Gaulle's desires—was not infrequently forced to rely on help from other countries. At the end of the 1968–1969 austral summer campaign, the supply ship *Thala Dan* got stuck in pack ice eighty-five kilometers from Dumont-d'Urville. Purpose-built for polar waters by Danish company J. Lauritzen Lines in 1957, the red-and-white *Thala Dan* was the *Norsel*'s successor. The lease of a foreign ship itself was an indication of France's logistical weaknesses: despite claiming a portion of the Antarctic pie, France still did not have its own polar ship and relied on foreign vessels to access its own territory. After several days of effort, it became clear that the *Thala Dan* could not make it to the rocky shore of Terre Adélie that season. With forty-two men waiting to be repatriated to France and insufficient provisions at the base to sustain them through another austral winter, France was forced to ask the Americans and the Australians for help.[101] Australia stepped up and, together, the teams used helicopters to ferry all the men, scientific documents, provisions, and materials between the *Thala Dan* and the Dumont-d'Urville base. This incident, combined with earlier failures and near misses, made it clear that France could not assure the security of the Dumont-d'Urville base alone—a significant problem for the sovereignty mission. The French were also embarrassed when an American team conducting observations of Antarctic bases under Article VII of the Antarctic Treaty in 1963–1964 could not land and

properly inspect Dumont-d'Urville because of the lack of landing facilities at the French base.[102] Air access to Terre Adélie, in the form of a long prepared snow or tarmac runway, was increasingly seen as essential.

There was also trouble on the administrative and management front through the 1960s. With Expéditions polaires françaises now answering to TAAF, Victor found himself in a new and uncomfortable position, with diminished control over French Antarctica. Victor appealed to officials at all levels of government to clarify the lines of demarcation in order to—as he saw it—prevent TAAF from encroaching on his remaining authority. Victor was particularly insistent that the name "Expéditions polaires françaises" appear on all data, photographs, and articles published from French scientific work in Antarctica, demanding retractions and corrections from offending publishers and scientists.[103] Those who published material without Expéditions polaires françaises' explicit consent, too, found themselves at the receiving end of long, legal reprimands.[104] Expéditions polaires françaises also pushed its own agenda by promoting its films and books in school classrooms and reaching out to teachers via pedagogical magazines, as well as holding public lectures and film soirées. None of these efforts were well received by a growing group of young scientists who thought Victor's iron grip over scientific work in Terre Adélie unreasonable.[105] In 1965, they rebelled, alerting the Academy of Sciences of Victor's demand that his own name be included on all publications. Government authorities agreed that the practice was inappropriate and put an end to it.

Nonetheless, the 1960s were the calm before the storm. At the very end of the decade, on 21 July 1969, the twenty-seven-member French team at Dumont-d'Urville—deeply ensconced in the Antarctic winter—listened intently as Neil Armstrong made history by setting foot on the moon. The radio broadcast was staticky and in English, a language with which many of the overwinterers struggled, but the emotion they felt was deep: "The moon, always extraordinary in the Antarctic, seemed close to us, and, paradoxically, in our isolation, we felt more at one with the three astronauts than with the other Earthmen," recalled overwinterer Jean-Pierre Jacquin.[106]