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Sheep bound for mountain pastures in Lyngsalpan ['The Lyngen Alps'] in Northern Norway 2014. Photo: Tor Arne Lillevoll.

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Anita G.J. Buma, Annette J.M. Scheepstra & Richard Bintanja (eds.), *Door de kou bevangen. Vijftig jaar Nederlands onderzoek in de poolgebieden*, Lelystad: MaRiSuDa Uitgeverij 2016, ISBN 9789081826426, 235 pp.

The Netherlands has a long history as a sea faring nation. Two names are emblematic in its early associations with the earth's Polar Regions, Willem Barentsz and Dirk Gerritsz. The former is now inscribed in the Willem Barentsz Polar Institute hosted by the Arctic Centre of the University of Groningen, whose researchers, including several doctoral and postdoctoral students as well as guest scholars, cover a range of disciplines such as polar archaeology, anthropology, polar marine biology, ecology, environmental studies and social impact assessments of climate change, geography history, polar tourism studies, as well as Arctic politics and governance, and a number of other specialisms in the natural and cultural sciences. The Barentsz Institute is concerned with research, education and the dissemination of knowledge pertaining to both Polar regions.

Dirck Gerritsz is the name of a sea captain who commanded the ship the *Blijde Boodschap* ['Annunciation'], one of five Dutch ships that set off for South America in 1598 to look for a trading route to Asia. Storm winds led to his ship being blown off course and far south to about 64° S, where he afterwards reported seeing high snow covered mountainous terrain that reminded him of Norway. Some early charts placed the location in the vicinity of the South Shetland Islands but due to a lack of information in relevant archives that might definitely verify Gerritsz' sighting as incorporated into the tales of early seafarers, the evidential base is flimsy. Still, in this day and age of branding, the symbolic value of the name is important and it is now inscribed on the Dutch marine laboratory that opened for business in January 2013 on Adelaide Island to the West of the Antarctic Peninsula on the premises of the British research base Rothera that is reachable both by ship and airplane.

Dutch scientists and scholars have been conducting research in the Arctic for a long time. Continual activity in the Antarctic is of a much later vintage, connected to the Netherland's adhesion to the Antarctic Treaty as a Consultative Party in November 1990. Even though there is a record of Dutch researchers participating in Antarctic research already in the 1960s, this prehistory was largely forgotten and even the accounts since 1990 are rather scattered and not very "visible." To remedy the situation, a number of scientists, encouraged by the high media visibility and public attention regarding the opening of the laboratory on Adelaide

Island a few years ago, set out to produce a comprehensive illustrated anniversary book, now entitled *Door de kou bevangen*. The project consisted in eliciting texts from many individuals plus coloured photographs from researchers' private collections. The outcome is a handsomely illustrated popular monograph on high quality glossy paper that serves both as a fine coffee table book and well documented reference work.

The title of the book calls for some explanation. It derives from an old popular expression used when someone is overcome by the cold, shivery and afflicted. Here it is used metaphorically in an oblique meaning, something like "frostbitten"—caught up in the grips of the cold, that is the polar cryosphere, mentally, physically and symbolically. It is something like being overcome or captivated by polar fever, analogous to late nineteenth century gold diggers who were struck by gold fever and drawn to the Klondike. Once you have been there on "the Polar Ice" as a scientist, technician, scholar or artist, its lure continues to attract. The jubilee volume affords a detailed account of Dutch involvements in the Polar Regions. The focus is particularly on the past fifty years. Altogether nearly forty authors provided the textual material that the three chief editors have pieced together to craft a result that is a seamless monograph of storylines, thematically arranged. Photographic inserts depict research sites, researchers at work, scientific equipment and means of transport etcetera; they appear on almost every page. Institutions that have supported the project are the Willem Barentsz Polar Institute, the University of Groningen (RUG), the Royal Netherlands Institute for Sea Research (NIOZ), the Netherlands Organization for Scientific Research (NWO) and the Royal Netherlands Academy of Arts and Sciences (KNAW); the latter hosted a stimulating symposium in Amsterdam 8 March 2016 on which occasion the book was also launched.

Of the editors, Anita Buma and Annette Scheepstra are affiliated with RUG and Richard Bintanja is a climate researcher at the Royal Netherlands Meteorological Institute (KNMI), De Bilt, near Utrecht; he was previously at IMAU (see below), where he studied ice/snow atmosphere interactions, and reconstructed past climate by means of ice sheet modelling. Anita Buma is professor at RUG, where she leads the interdisciplinary group devoted to marine biosphere, ecology of marine phytoplankton, the energetic and behavioural mechanics of marine animals, and potential of marine microalgae. Annette Scheepstra has a background in human sciences and pedagogy, has organized science shops and other public outreach events, and is a guide on polar expeditions and coordinates activities at the Barentsz Institute. The superb graphical layout and design of the book is the work of Nelleke Krijgsman of the NIOZ.

The ambition has been to get individual researchers, scientists as well as scholars in the humanities to relate their personal experiences of working under extreme conditions, to explain the substance and significance of their research and to situate it in an international perspective. Popularization of intricate fieldwork together with theoretical underpinnings pull the reader right along through illustrated pages from cover to cover; the thrust of research endeavours, their historical background, past and current contexts and wider significance are nicely explained without sacrificing stringency. One gets a good overview of the work that has been going on in recent decades, complemented by a brief history of earlier Dutch activities in the polar regions. We also learn about the institutional landscape of Dutch polar research and its disciplinary differentiation over the past fifty years, and particularly the last thirty marked by multi-disciplinarity.

After an introductory chapter entitled (in translation) "Dutch footprints in the Polar Regions" written by Scheepstra, the book is structured around five main interdisciplinary thematic areas, each comprising a chapter introduced by a lead author followed by several sections by multiple authors. The general areas covered are (1) geosciences; (2) climate and sea levels; (3) marine sciences; (4) terrestrial biology and the effect of climate change on polar vegetation and animal life, particularly wild geese in Svalbard; and (5) human sciences—history viewed through the lens of polar archaeology, anthropological research in the Arctic, and issues in the Antarctic related to an expanding polar tourism. Finally, there are three appendices with a digest of information for the inquisitive reader. First, there is a documentation of all relevant PhD dissertations in the Netherlands published in the aforementioned fields from 1962 to 1975, about 115 theses all told—recorded chronologically by year, author, thesis title, name of supervisor, and university affiliation. All but four are in English. By far the most frequently recurring home universities are those in Groningen and Utrecht. The former houses the Arctic Centre and has a leading faculty in several natural sciences departments—many readers of the present journal (*Journal of Northern Studies*) will be familiar with Louwrens Hacquebord who has written the introduction to the chapter on the human sciences and its section on historical-archaeological research in the polar regions.

Utrecht University (UU) is well known for its Institute for Marine and Atmospheric Research (IMAU) that was for a long time directed by Hans (Johannes) Oerlemans, internationally famous for his pioneering work in polar meteorology and paleoclimatology as well as climate modelling and participant in Working Group I of the IPCC. In the list of

theses he appears as supervisor in twenty-eight cases. Other frequently appearing senior scientists are R.H. Drent (supervisor of 8 theses—RUG, avian ecology and evolutionary studies), Hein J.W. de Baar (8x, NIOZ, oceanographic studies), L. Hacquebord (7x, RUG, historical, archaeological and policy studies), W.J. Wolff (5x, RUG, eco-systems).

A second appendix provides us with the name, institutional address and email address as well as website/Facebook coordinates of each of the 38 authors who have participated in composing the texts assembled in the book. Finally there is a separate listing of all the photo credits and sources for the images that appear throughout.

I shall not go into further detail regarding the storylines of the research that can be found in the different chapters. It is enough to highlight a few aspects. Within "Earth Sciences," research on the impact of climate warming on permafrost and its consequences has been conducted in Eastern Siberia within an international programme also involving Russian, Swedish and North American scientists. Field studies in Southwest Greenland and Northwest Alaska have been devoted to sedimentation and silt transport processes in earlier times in the formation of landforms around river deltas. Geological research on King George Island, Antarctica was an important part of the First Netherlands Antarctic Expedition 1990/1991; it is briefly described, while the results of participation in a two month multinational sea-bottom sediment drilling expedition January 2010 from New Zeeland to Antarctic with a return route to Hobart, Tasmania, are interpreted from a paleo-climatological perspective to get a more precise understanding of when the present-day Antarctic icecap first emerged approximately 33.5 million years ago. A better insight was also gained into how fast ecosystems adapt themselves to new climatic and environmental regimes.

In the second chapter, "Ice, climate and sea levels," I am glad to see the picture of the little Swedish summer station Svea (established 1988/1989)—the image rouses pleasant memories. Richard Brintanja (one of the editors of the present book) did some of his work there on the climate sensitivity of a blue ice area in the Sharffenbergbotnen valley that is surrounded by nunataks in the Heimefrontfjella of Dronning Maud Land. That was in the austral summer season 1992/1993 attached to a Swedish SWEDARP expedition; five years later, he was there again for a follow up. On that occasion, I was part of the Swedish group whose main mission was to conduct a pilot ice coring operations under the auspices of the European EPICA programme.[1] I remember our group stopped off and spent some time at the Svea station site on our eventful traverse along the 75°S latitude line up the Amundsen Ice sheet (and then back

again); someone on the Dutch team lent me a pair of speed skates for fun and I was able to make fairly good headway on a stretch of blue ice near Svea.

I have often wondered about the automated meteorological stations that were set up in the field near Svea station by the Dutch team 1997/1998. This story, together with Bintanje and his team's blue ice work, is nicely contextualized in the book from a scientific point of view. It also turns out that Richard Bintanja has written several novels, and in the book there is an excerpt from one of these entitled *Poolreizen* (2006), a fictional account spiced with humour and tensions noted by a keen observer of everyday human interactions partly based on his own personal experiences and metaphysical reflections "on the ice" during the two Antarctic expeditions with the Swedes.

Two more sections in the same chapter take us to the melting ice of the Arctic—Greenland, Iceland and Spitsbergen—and then, respectively, discuss more generally the recovery and interpretation of ice cores records in Greenland and the Antarctic. Some striking findings relating to climate fluctuations "deep" into the past are explained. A final section in this chapter summarizes some of the technological innovations that have revolutionized precision and continuity in meteorological measurement and the transmission of data that feeds into climate modelling; these are some of the fields in which the IMAU at Utrecht excels. Other areas where research in the Netherlands is strong are outlined in the chapter on "Marine polar science." Five sections are devoted to the subject, describing a diversity of specific programmes with international collaborations.

Likewise with the thematic chapter on "Terrestrial biology," an area where the Netherlands has a long tradition going back to the Second International Polar Year (1932–1933)—that was when Nikolaas (Nico) Tinbergen and his colleagues combined ecology and ethology (animal behaviour studies) in East Greenland. Since then, polar ecology, ornithology and evolutionary biology has been a frontline theme whose history is traced up to and through the Fourth International Polar Year (2007–2008). In one of the sections in that chapter there is an interesting account of life in the field and in the "research village" of Ny-Ålesund in Svalbard where over 180 persons of different nationalities affiliated with eleven research stations are busy during the Arctic summertime. A Dutch research specialism here is the behaviour, feeding habits and breeding ecology of migrant wild geese. In *Door de kou bevangen* we find many interesting stories about this type of research that Dutch scientists have also conducted at other sites in the Arctic. Furthermore, we

learn how political contingencies during the Cold War restricted and after Gorbachev's Murmansk speech facilitated conditions for international research programmes.

The final chapter, dealing with what we may call the polar humanities, leads off with an introductory section written by Louwrens Hacquebord. It notes how the relationship of the Netherlands to the northern Polar Region goes back to 1560, when trade routes to Cathay (China) were sought and how geographical discoveries changed the map and eventually spurred land-based whaling operations in north-western Spitsbergen and Jan Mayen Land. Dutch pursuit of whales continued until about 1850, whence with and after the advent of the First International Polar Year (in which Dutch geoscientists played a prominent role) scientific activities dominated. In a second section, the same author tells us how archival studies combined with archaeological excavations from 1979 onwards, concentrated first on Spitsbergen and in the early 1990s with the collapse of the Cold War also turned to Novaya Zemlya. Excavations and mapping were done at the site of the house "het Behouden Huys" built of planks and other driftwood found on the beach where, during his third expedition Willem Barentsz was stranded and overwintered, before dying at sea in the summer of 1597 on the return journey on a rescue vessel to Holland.[2] Results from this and later polar archaeological projects (including ones relating to whaling operations at South Georgia and Deception Island in the southern hemisphere) are outlined and illustrated with interesting images.[3]

In a third section of the chapter, Cunera Bijs and Barbara Miller review Dutch anthropological work on Inuit culture in Greenland and Northern Canada, focusing in part on indigenous peoples' coping strategies and multiple tensions in the face of modern day forces of globalization. The final section of the chapter, authored by Ricardo Roura and Kees Bastmeijer, describes a variety of Dutch projects investigating different kinds of commercial tourism in Antarctica. One of the critical points emerging from the results is that, contrary to what is sometimes held, namely that eco-tourism in the Antarctic has a positive influence on opinion building for a more responsible climate policy, there is no evidence that this is the case. Eco-tourists as ambassadors who may put pressure on their congressmen or home-country politician(s) have very little influence. On the other hand, the negative impact of greenhouse gas emissions from the airplane flights that take them back and forth across the globe to Antarctic gateway cities where they board and disembark from numerous cruise ships by far outweighs whatever positive role these tourists actually play in the larger picture of things. This is a so-

bering message, all the more so since the authors point out how both the international agency that is supposed to oversee self-regulation among commercial operators, and the national delegates of the Antarctic Treaty Consultative Meetings since the Madrid Protocol intended to regulate environmental impact, do much more talking about conditions under which tourism is permissible than anything in the way of actually making an effort to introduce some real teeth in order to limit the annual numbers of tourists.

NOTES

[1] EPICA stands for the European Project for Ice Coring in Antarctica, a multinational European project for deep ice core drilling in Antarctica. It ran from 1996 to 2005. The Swedish effort in the austral summer season 1997/1998 was only one of several pilot studies to find a suitable site for deep core drilling in Droning Maud Land. The site finally selected was where the German summer-only polar research station was erected, the Kohnen-Station named after the geophysicist Heinz Kohnen (1938–1997) who was for a long time the head of logistics at the Alfred Wegener Institute in Bremerhaven, Germany.

[2] Off the northern coast of the Netherlands on the island of Terschelling where Willem Barentsz was born there is a local museum where one can find a life-size replica construction of "het Behouden Huys."

[3] Some of these projects were part of the of the large international multidisciplinary LASHIPA project that ran during the Fourth International Polar Year (2007–2009) and included the Swedish researchers Dag Avango and Ulf Gustafsson who were affiliated with the Arctic Centre, RUG in Groningen. LASHIPA = Large Scale Historical exploitation of natural resources in Polar Areas.

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