Permanence in diversity
*A life in the service of Arctic Biological Research*
Louwrens Hacquebord

The pureness of nature is an overwhelming pleasure.
Under the midnight sun you have a different view every evening because of the changing light.
A tremendously beautiful sight.
Piet Oosterveld, November 1987

Piet Oosterveld was born in Zwolle on 5 February 1939. After secondary school he went to university in Utrecht to study biology. In the final stages of his studies he did fieldwork on the exposition of vegetations in Iceland and later wrote up the results of this fieldwork in Spitsbergen.

In 1967 Piet taught biology for some time at the grammar school in the town where he had formerly lived, but it soon became clear that research was where his heart lay. When he was asked to join an expedition to Spitsbergen, he needed little time to think. In 1968 he and three others formed the Netherlands Spitsbergen Expedition and spent the winter on Edgeøya, an island in the east of the Spitsbergen group of islands which is now also known as Svalbard.

Wintering in Spitsbergen
Why was there an expedition to Spitsbergen and whose idea was it? In his booklet *Nederlandse Spitsbergen Expeditie 1968–1969*, Piet wrote that it was Eric Flipse’s idea (Oosterveld 1970). Flipse had met Norwegian zoologist Thor Larsen who had told him that there were plans to organize polar bear research on Spitsbergen. The status of the polar bear population there was a cause of serious concern at the time; the number of bears shot each year was higher than the number born. Moreover, at an international conference in Fairbanks (Alaska) in 1965 it had become clear that too little
was known about the biology of polar bears to be able to take adequate measures to protect them. Through the Norwegian connection, Flipse came into contact with the zoologist Dr Anne van Wijngaarden of RIVON (Netherlands institute for nature conservation research) in Zeist, an institute working to conserve threatened mammals in Europe. Together, they accepted the Norwegian invitation to take a Dutch team to do research in Spitsbergen in 1968–1969. They set up a foundation in order to raise funds for the expedition, which proved to be no simple task. Completely in line with the tradition of Dutch polar research, all the money had to come from private funds and the business community. In spite of repeated requests, the government contributed nothing. It was only a few weeks before their departure that, thanks to a few large contributions from the business community, they managed to raise enough funds to let the expedition go ahead.

At the beginning of August the expedition headed north. The members of the team who were to winter there were Eric Flipse, 23, a biology student who was the expedition’s technical leader, Ko de Korte, 25, a biology student specializing in ornithology, Paul de Groot, 21, a forestry student, and Piet
Oosterveld, 29, a biology student who was in charge of the scientific side of the expedition. Anne van Wijngaarden, a zoologist and the overall leader of the project, and the technical assistants Nico Vergouw and Henk Vlug stayed with the team only for the summer, to help prepare for the winter and to build the research station. Hans Zoet and Paul van de Bos reported on these preparations in radio and television broadcasts.

The aim of the expedition was to gather biological data on polar bears in the east of Spitsbergen. The animals were under great pressure due to hunting, and in addition their health was being seriously undermined by toxic substances such as DDT and heavy metals. Because the polar bear is at the end of the food chain, it consumes many toxic substances which accumulate in its fat. The bears were measured, weighed and tagged in order to find out more about their biology and behaviour (Oosterveld 1969, 1971a). When the summer team returned to the Netherlands in mid-September, the real work started (De Korte and Oosterveld 1970b).

During the winter, the spring and the following summer, Piet Oosterveld and Ko de Korte also did scientific research of their own. Oosterveld was studying reindeer (Oosterveld 1971b) and De Korte the birds on the island.
(De Korte 1972). In the summer of 1969 a few big expeditions with ships and helicopters came to visit. Many of the ships belonged to Norwegian seal hunters who provide transport around Spitsbergen in the summer. Eric Flipse in particular made contact with the seal hunters and became fascinated by their work.

**Back to civilization**

In mid-September 1969 the Norwegian seal-hunting ship *Norvarg* picked the team up and took them back to civilization. Back in the Netherlands, the Rijksinstituut voor Natuurbeheer (Netherlands Institute for Nature Conservation) gave Piet a job writing up the data collected by the expedition. Paul did a photography course and soon after went to work as a police photographer. Ko and Eric were keen to get back to the polar region as soon as possible. Ko did so soon after his finals. In 1973 he continued his research into the breeding success of the tundra birds. Supported by the Foundation for Arctic Biological Research, which was the successor of the Foundation for the Netherlands Spitsbergen Expedition 1968–1969 and whose administration was headed by Piet Oosterveld, he spent the summer months of several years on the east coast of Greenland. His research eventually resulted in a dissertation and a doctorate awarded by the University of Amsterdam (De Korte 1986). Eric made good use of the contacts he had made with the Norwegian seal hunters in the summer of 1969. From 1972 on he collected data on Arctic seals in the marine area around Jan Mayen. His activities were also supported by the Foundation for Arctic Biological Research (Flipse and Oosterveld 1975).

In 1970 the members of the team who had spent the winter in Spitsbergen were awarded the Visser-Neerlandia prize for their work. One year later, partly due to the results of the Dutch study, polar bear hunting in Spitsbergen was restricted and from 1974 on it was completely prohibited.

**Exploratory oil drilling on Edgeøya**

In the early 1970s the natural environment of Edgeøya was threatened again when the oil companies FINA and CFP developed an interest in the island. In 1971 and 1972 the two companies carried out exploratory drilling on Edgeøya. To prevent the tundra vegetation from being severely harmed by the drilling and by vehicles driving across the tundra, the Norwegian government issued a drilling permit which was subject to restrictive conditions: only a limited amount of driving was allowed on the tundra and all
building materials and refuse had to be removed after the exploratory drilling. Piet Oosterveld managed to interest two students in a study of the effects and in 1972 Dutch researchers again arrived on Edgeøya. They received financial support from the Foundation for Arctic Biological Research, which was sometimes informally referred to as ‘Piet’s foundation’. The two students studied the effects of the oil drilling on the tundra of Edgeøya. Their study showed that the Norwegian government’s rules had been followed well and that in spite of the inevitable tracks, damage to the tundra vegetation had been limited (Kuper and Van Rijn van Alkemade 1972).

In 1977 Arnoud van den Berg and Jan Willem van Rijn van Alkemade re-examined the sites which had been damaged by oil drilling. They found that the erosion observed in 1972 had not become more severe; on the contrary, deep tracks had become somewhat flatter and in several places the vegetation had begun to recover. The tracks described in 1972 were still clearly visible five years later. In places where the vegetation had been severely damaged, the permafrost was less close to the surface than in other similar places. Although most building materials had been removed, both drilling sites were still clearly recognizable in 1977 (Van den Berg 1978).

In 1986 Cock van Herk, Rob Lensink and Jan Willem van Rijn van Alkemade continued with the study of the effects of the oil drilling in 1971 and 1972. It turned out that in many places the vegetation had partially recovered. A slight change in the depth of the permafrost was observed, which was probably not permanent, and after 14 years the erosion had become considerably less deep. All of the data (from 1972, 1977 and 1986) were written up and published.

**REES ’77**

On the initiative of Piet Oosterveld and with financial support from the Foundation for Arctic Biological Research, another big expedition to Spitsbergen was organized in 1977. The most important goal of this ‘Reindeer Environment Expedition to Edgeøya, Svalbard’ (REES ’77) was to study the relationship between reindeer and the tundra vegetation on the island. The most important product of the study was the ecological landscape map published in the present volume. Piet Oosterveld was the leader of a multidisciplinary expedition team consisting of ten scientists and four assistants. The members of the expedition (many of whom were young and inexperienced) came from five Dutch scientific institutions, but took part
in the study as private individuals. Apart from Oosterveld, they were the biologists Steven de Bie, Sip van Wieren, Jan Willem van Rijn van Alkemade and Arend van Dijk, the biology students Arnoud van den Berg, Hester Heinemeijer, Max Lebouille and Niels de Nies, the forestry scientist Piet Schermerhorn, the soil scientist Ies Zonneveld, the doctor Tineke Bos and the technicians Eric Flipse, Lawrence Newman and Fineke Flipse-te Raa.

Piet Oosterveld continued with the reindeer study he had started in 1968. He collected data on numbers, reproduction, death and distribution of the Svalbard reindeer on Edgeøya in order to gain a better understanding of the factors regulating the population. As in 1969, he collected skulls and lower jaws in the Kapp Lee area to determine ages. To gain more insight into food supplies, a detailed vegetation map was made of the Kapp Lee area and the Rosenberg valley, using aerial photographs. This map was used as a basis for research into the Svalbard reindeer’s feeding behaviour. For this same study droppings were also collected and later analysed in the Netherlands (De Bie 1977a, 1977b; De Bie en van Wieren 1980; Alendal, De Bie and Van Wieren 1979).
Equipped with an enormous amount of new scientific data, the group left Edgeøya on 14 September 1977, leaving a completely repaired station behind them at Kapp Lee.

An annual summer expedition

In the 1980s Piet Oosterveld succeeded in manning the station for six consecutive years, giving many young biologists an opportunity to gain fieldwork experience in the Arctic. One of the main reasons for this success was that the tourist activities of the Plancius Foundation of Amsterdam made it easier to deliver provisions to the station. Nevertheless, from an organizational and financial viewpoint it was a gigantic achievement on the part of Piet Oosterveld to realize this research without commitment from any Dutch research institute or funding from any organization for scientific research.

In 1983 Piet Oosterveld and Hans de Haas sailed to Edgeøya on the MS Plancius to see how things were going. The station at Kapp Lee was repaired again and new data were collected on the reindeer in the area. The next year the station was manned again. In the summer of that year Pim van der Knaap and Jacqueline van Leeuwen took samples for paleobotanic research from a layer of peat discovered by Piet Oosterveld in the Rosenberg valley. The initial goal of this research was to collect data on climate changes, but the reindeer droppings found in the samples and the C$^{14}$ datings showed that the reindeer had been continuously present on Edgeøya from 4995 ± 45 BP to 3810 ± 40 BP and very probably also during the period thereafter (Van der Knaap 1986). Van der Knaap and Van Leeuwen also took samples from skua mounds in the Agardh valley (Spitsbergen) and near Meodden (Edgeøya). Paleobotanic examination of these samples showed that the skua mounds were first used some 4500 years ago (Van der Knaap 1988). That year Louis and Edwig Beyens also joined the expedition. The two Belgians took samples of testate amoebae at various sites on Edgeøya (Beyens en Charde 1984).

Piet Oosterveld and Agnes van de Vlijver again collected the skulls and lower jaws of reindeer which had died the previous winter and did some experiments on the composition of reindeer droppings.

From July to September 1985, Jan Barkman and Leo Jalink listed, described and took samples of mushrooms on Edgeøya (Barkman 1987). In his report, Barkman came to the conclusion that Edgeøya, untouched as it was, was a very fine natural environment which would be well worth more
research. Very little was known about the mushrooms on Spitsbergen, so that a study of them would be extremely interesting. However, in order to do this it would be essential to carry out supplementary research into the soil biology in dry and wet tundra, and tundra enriched by bird droppings. In 1985 Leo Jalink laid the foundations of mushroom research in Spitsbergen and would work on it for several more years.

That year Piet Oosterveld, Agnes van de Vijver, Jan Willem van Rijn van Alkemade, Henk Korte and Wim Iven were also active in Kapp Lee. Later the Belgian researchers W.H.O. De Smet, L. Beyens and P. De Bock joined them; they all worked on research of their own.

In 1986, in addition to Piet Oosterveld there were seven people at the Kapp Lee station on Edgeøya in Spitsbergen, including Leo Jalink and Marijke Nauta who were continuing with the mushroom study which had started in 1985. The mycocoenological research was carried out in permanent experimental sites where macrofungi and vegetation were examined as well as soil and other abiotic factors (Jalink en Nauta 1989). Cock Van Herk carried out vegetation research together with Arien van
Iperen and Agnes van de Vijver, and Rob Lensink observed the birds on Edgeøya (Lensink 1987).

The vegetation research was led by Piet Oosterveld. Its goal was to gain more insight into the foraging behaviour of reindeer and geese. Piet Oosterveld himself spent a great deal of time on the reindeer. He searched a total of 30 square kilometres looking for dead reindeer in an attempt to get a picture of the events of the previous winter. The total number of dead reindeer proved to be the same as the year before, but this time did not include any one-year-old animals. During the winter 9 males and 6 females had died. All but one of these reindeer had died in early spring. Oosterveld again collected the skulls and lower jaws of reindeer in order to determine ages, and reindeer droppings to determine their pollen content and compare it with that of the subfossil droppings found by Pim van der Knaap in 1984.

The polar bear attack

1987 was a dramatic year; indirectly, the events which took place then led to the end of Dutch research on Edgeøya. That year Piet Oosterveld and George Visser were together at the Kapp Lee station on Edgeøya. Oosterveld was continuing with his reindeer research and Visser was working on the vegetation. Together, they were trying to find out more about the reindeer’s grazing behaviour. A few days before the two scientists were to be picked up by the MS Plancius, Piet was attacked by a polar bear.

Because of the conservation measures which had been taken partly as a result of the Netherlands Spitsbergen Expedition in 1968–1969, the numbers of polar bears had increased considerably. In sixteen years’ time the population had grown from 1000 to 3000 bears. Most of the bears were on the pack ice in the north-east of Svalbard, but the number of encounters with polar bears at Kapp Lee had also risen sharply. On that particular day Piet saw a young male bear hitting the Zodiac rubber boat on the beach in front of the research station with its claws. He grabbed a newspaper, rolled it up tightly and lit fire to it. Holding this torch, he went towards the bear to chase it away. But the bear refused to be chased away: it turned around and walked towards Piet. Piet, who had not expected this, turned around, intending to go back to the station. While doing so he slipped, and immediately the bear was on him, biting his head. George Visser saw what happened, and without hesitation ran outside and grabbed the animal by the scruff of its neck. The polar bear let go of Piet, so that he was able to escape. George came in for a few hefty blows from the bear, but also managed to get away.
Badly hurt, the two scientists stumbled back into the station, where they would have to wait three days for the *Plancius* to arrive. The captain of the *Plancius* used the radio to call in the help of the Governor of Svalbard, who immediately sent a helicopter. The bear, which was still roaming around the station, was shot dead, and the two men were taken to hospital in Longyearbyen. There they were patched up well enough to return to the Netherlands, where Piet had to stay in hospital for several more weeks. In 1988 Piet Oosterveld returned to Kapp Lee one more time. Jalink and Nauta accompanied him and completed the fieldwork they had begun in 1985. They took mycological samples in the experimental sites which had been laid out in 1985 and also took soil samples.

**The end of a Dutch research station in the high Arctic**

Unfortunately, 1988 was also the Kapp Lee station’s last year. In 1989 Piet Oosterveld sold it for a symbolic sum to the Norwegian Polar Institute. The Norwegians immediately demolished the station to forestall any future Dutch claims to the area. Norway knows better than any other country how important a role research stations can play in political and territorial claims; after all, it owes its own sovereignty over Jan Mayen to a claim of this kind. Since the demolition of the Dutch station, there has not been any medium-sized research facility on the island, which has in the meantime been proclaimed a nature reserve. From a scientific point of view, it was a serious mistake to demolish the station, because now the only high Arctic research station on Spitsbergen has been lost. All research stations still in existence are on the west coast of Spitsbergen where low Arctic conditions prevail because of the warm Gulf Stream.

After the sale of the station, the Foundation for Arctic Biological Research was no longer necessary. On the instructions of Piet Oosterveld, the executive committee terminated the Foundation, thus putting an end to one of the most important Dutch research initiatives in the Arctic since the Second World War.

In retrospect it has become clear that the studies never really got off the ground and never produced the expected results because they were not formally embedded in an research institute in the Netherlands. Piet Oosterveld was therefore forced to spend a great deal of time on logistic and financial preparations for the expeditions and on keeping the station running. He was too often dependent for his research on scientists who had other jobs and were therefore doing this research in their spare time. The
Piet Oosterveld himself never received any structural financial support from the Dutch organization for scientific research, so that in fact the Foundation for Arctic Biological Research suffered chronically from lack of funds. Lack of both funds and staff eventually led to the premature end of this unique research initiative.

With this volume we would like to honour Piet Oosterveld as the driving force behind biological research on Edgeøya. He invested large amounts of time and energy in this research and in our opinion it is right that the results should still be published.

Samenvatting

Piet Oosterveld is op 5 februari 1939 in Zwolle geboren. Na het gymnasium studeerde hij in Utrecht biologie. Samen met drie anderen nam hij nog tijdens zijn studie deel aan de Nederlandse Spitsbergen Expeditie die tot doel had ijsberen te onderzoeken op en rond het eiland Edgeøya in het oosten van Spitsbergen. Het onderzoeksteam overwinterde daartoe in een speciaal voor dat doel gebouwd station op Kapp Lee.

Door die overwintering raakte hij verknocht aan de arctische natuur. In 1972 ging hij daarom weer terug naar Edgeøya, ditmaal met twee biologiestudenten, om de effecten te onderzoeken van de toen plaatsvindende olie-exploratie op de toendravegetatie van het arctische eiland. Dit onderzoek is daarna nog een aantal keren herhaald om een goed inzicht te krijgen in de langetermijneffecten van olieboringen op de vegetatie.


In 1987 sloeg het noodlot echter toe. Dat jaar werd Piet Oosterveld door een ijsbeer gegrepen. Gelukkig kon hij nog net ontsnappen, maar zijn onderzoek was daarmee wel ten einde. Nog eenmaal keerde hij terug op Kapp Lee maar het gaf hem geen voldoening meer. In 1989 verkocht hij het
station voor een symbolisch bedrag aan het Norsk Polarinstututt dat het onmiddellijk afbrak.
Met deze bundel willen we Piet Oosterveld als drijvende kracht achter al dit onderzoek eren door verschillende biologische onderzoekingen nog eens voor het voetlicht te brengen.

References


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