ONE MAN'S DREAM

JAPAN'S ANTARCTIC HISTORY

Mariska M. Wouters

Graduate Certificate in Antarctic Studies
Centre for Continuing Education
University of Canterbury
Christchurch
NEW ZEALAND
1999
# Table of Contents

<table>
<thead>
<tr>
<th>Section</th>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>Introduction</td>
<td>3</td>
</tr>
<tr>
<td>II</td>
<td>One Man’s Dream – Japan’s Antarctic History</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>2.1 Introduction</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>2.2 Nobu Shirase – Japan’s First Antarctic Explorer</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>2.3 The International Geophysical Year and the Antarctic Treaty</td>
<td>8</td>
</tr>
<tr>
<td>III</td>
<td>Japan and Antarctica Today</td>
<td>9</td>
</tr>
<tr>
<td></td>
<td>3.1 Introduction</td>
<td>9</td>
</tr>
<tr>
<td></td>
<td>3.2 National Institute of Polar Research</td>
<td>9</td>
</tr>
<tr>
<td></td>
<td>3.3 Japan Antarctic Research Expedition</td>
<td>12</td>
</tr>
<tr>
<td></td>
<td>3.4 International Collaboration</td>
<td>13</td>
</tr>
<tr>
<td></td>
<td>3.5 Japan’s Antarctic Bases</td>
<td>13</td>
</tr>
<tr>
<td></td>
<td>3.6 National Legislation and Environmental Protection</td>
<td>14</td>
</tr>
<tr>
<td></td>
<td>3.7 Tourism</td>
<td>15</td>
</tr>
<tr>
<td></td>
<td>3.8 Antarctica in Japan</td>
<td>15</td>
</tr>
<tr>
<td>IV</td>
<td>New Zealand, Japan and Antarctica – A Brief Discussion</td>
<td>16</td>
</tr>
<tr>
<td>V</td>
<td>Conclusion</td>
<td>18</td>
</tr>
<tr>
<td>VI</td>
<td>Bibliography</td>
<td>19</td>
</tr>
<tr>
<td>VII</td>
<td>Appendix - Organisational Chart National Institute of Polar Research, Japan</td>
<td>21</td>
</tr>
</tbody>
</table>
I INTRODUCTION

In New Zealand and "other southern hemispheric nations, the geographical proximity of the Antarctic has meant that this is a part of the world that commands considerably more importance than would be accorded to it by northern hemispheric counterparts" (Dodds 1997:2). Dodds argues that geographical indicators such as proximity and geological continuity are employed to justify and explain polar interests to public audiences in the Southern Hemisphere. However, the historical and cultural legacies of polar exploration and commerce are usually taken for granted by political leaders and the general public, so that while many citizens in the southern hemisphere can recall the names of famous explorers and/or expeditions, there is often little critical appreciation of what motivated claims to polar territory or to participation in scientific programmes such as the 1957-58 IGY. As Dodds (1997:xi) states: "...the geographical proximity of the Antarctic has exercised a powerful hold on the collective and individual geographical imaginations of those Southern Hemisphere nations".

The discovery of New Zealand by European explorers is closely linked to the search for the last continent. When Abel Tasman reached the North Island of New Zealand in 1642, he "discovered" one of the last and most significant landmasses still to be discovered by Europeans. In the 1770s, Captain James Cook circumnavigated New Zealand and the "ghost of this continent was ... finally laid to rest" (Simpson-Housley 1992:7). "New Zealand's discovery by the European world was the undoing of the Terra Australis myth and from its beginnings 'New Zealand' was intertwined with what was to become 'Antarctica'" (Gee 1998:4).

Despite substantial literature on New Zealand's Antarctic history, for example, there appears to be little research into the origin of Antarctic involvement and the understanding of Antarctica by northern hemisphere countries, other than on the traditional world powers such as the USA, Russia and the United Kingdom. Dodds (1997:xiii) looked at geopolitics in Antarctica from the perspective of SORS nations, but there appears to be little research on other countries which are actively involved in Antarctic research and/or management, such as Japan. It is of interest to perform an investigation of a non-European, non-Southern Hemisphere, Antarctic country, and Japan provides a useful case study. It is a nation that has had long-term activity in Antarctica by having its own scientific bases and being party to the international treaties. A study of Japan, although a modernised and westernised state, would also provide an opportunity to look at the attitude of a non-Western peoples to the Antarctic, often called the last "wilderness", but research of this nature is beyond the scope of this paper.

An expedition from Japan reached the Antarctic in 1912. This was a private party without government support. Although this first party did not receive government assistance, the official documentation of Japan’s Antarctic history claims that Japan has nevertheless had an Antarctic involvement since then. Like New Zealand, Japan participated in the International Geophysical Year of 1957-58 and Japan has had an Antarctic base since 1957. Both nations signed the Antarctic Treaty in 1961, and New Zealand was the first and Japan the last country to ratify the 1991 Protocol on Environmental Protection. Where possible a correlation or a distinction will be drawn between New Zealand and Japan, although a full examination of similarities and differences is not possible.
This essay will investigate the relation of Japan to Antarctica. Section II will describe the historical evolution of Japan’s involvement in Antarctica with a review of past episodes of exploration and a brief explanation of Japan’s “polar claim”. A consideration in this section is why Japan participated in discussions leading to the 1959 Antarctic Treaty. The current status of Japan’s Antarctic operations and reference to Antarctica-related activities in Japan will be provided in section III. It will be considered whether the political, economic and resource interests of Japan in the region have changed over time and whether Japan is responding to contemporary international concerns about environmental protection and regulation of activities such as polar tourism. Section IV contains a brief discussion of the relationship between Japan and New Zealand in the Antarctic context, and the final section will draw the conclusion to this study.

The historical and cultural legacies of polar exploration are usually taken for granted and there is often little critical appreciation of what motivated claims to polar territory or to participation in the IGY. Moreover, Antarctica raises concerns over global cooperation, governance and power-sharing. This study aims to identify some of the issues and does not assume to provide a detailed analysis of the Japan’s involvement in Antarctica. This essay will not include a description of the legal and territorial geographies of the Antarctic, unless specifically required for better understanding, as there is abundant literature available on Antarctica’s legal context.
2.1 Introduction

Japan was among the twelve countries that established research stations on the Antarctic continent during the 1957-58 International Geophysical Year (IGY). On 4 August, 1960, it acceded to the Antarctic Treaty (New Zealand acceded on 1 November, 1960). However, Japan’s Antarctic involvement predates the IGY. The Lonely Planet Guide on Antarctica (Rubin 1996:36) introduces Japan’s Antarctic involvement as: “Coming from a country with no tradition of exploration, Nobu Shirase (1861-1946), a lieutenant in the Japanese Navy, was a surprise”. It is not a well-known fact that a Japanese adventurer was aiming to reach the South Pole at the same time as Scott and Amundsen were making their bid.

The Sixth International Geographic Congress (1895) had declared 1901 the 'Antarctic Year'. German, Swedish and British expeditions set out for the first real attempts at exploration of the Antarctic continent itself. This was the beginning of the 'Heroic Age', characterised by the 'Big Four' Antarctic heroes: Robert Falcon Scott, Ernest Shackleton, Roald Amundsen and Douglas Mawson (Gee 1998:6). All of Scott and Shackleton’s expeditions departed for Antarctica from New Zealand ports with considerable support from the New Zealand public and government. Shirase’s expedition was therefore the 'odd' expedition during this period of Antarctica’s discovery by the European nations.

2.2 Nobu Shirase – Japan’s First Antarctic Explorer

Nobu Shirase was born in 1861, and was the first-born son of a Buddhist monk of Jorenji temple of the town of Konoura in Akita Prefecture, just before the Meiji Restoration. Apparently at the age of eleven, his schoolteacher told Shirase about the Arctic world, and from then on his aim was to lead an expedition to the North Pole. At the age of eighteen, in 1879, Shirase went to Tokyo to attend a school for priests at Sensoji Temple in Asakusa. The expectation was that he would become a Buddhist priest as he was the oldest son. However, Shirase still wanted to travel to the Arctic and he quit school because he would not be able to make expeditions as a Buddhist priest. He entered the army school for military noncommissioned officers. At the same time, he changed his name from the one he had as a priest to Nobu. For unknown reasons he did not join the navy, which would have facilitated his need to get a ship to travel to the Arctic. After graduation from the military training school, he became a professional army officer. In 1883, Shirase volunteered to join a navy expedition to the Tsushima Islands and so, in June, he landed at the northeast island. Shirase stayed over the cold winter with five other members but, in 1894, the sino-japanese war occurred and the party was forced to spend another winter on the island. During the second winter period, three of the six members died from scurvy. On August 21, 1885, the survivors were finally rescued. This period was significant for Shirase, as he deliberately volunteered for activities that would assist him in getting experience for any future Arctic expedition. Shirase remained in the army for ten years, after which he retired as lieutenant around 1899 (Akita Pioneers, Tanabe 1999).

In 1909, at the age of 48, Shirase was shocked by news that Robert Peary arrived at the North Pole (at that time in Japan, the average life expectancy was about 45 for men). He decided he would go to the South Pole instead! In 1910, he petitioned the Japanese parliament for
support of his Antarctic expedition. The Lower House passed approval for support of ¥100,000, which was reduced by the Upper House to ¥30,000. The government delayed answering Shirase’s proposal. Eventually, journalists began to report about his proposal and newspapers also held campaigns to collect money. In the summer of 1910 a big meeting of supporters was held, “The Antarctic Expedition Supporters' Association” was formed, and money was donated by people around the country. This was a new concept to Japan. The official web page of the Shirase Museum refers to the lack of government funding as a major difference between Shirase and the European Antarctic explorers: “... the government actually did not give him any money. This factor made a big difference between the expeditions made separately by Scott and Amundsen, which were assisted by their respective governments” (Akita pioneers). A drama of the expedition was even presented at theaters in Tokyo and Osaka, with the purpose of stirring up public interest and obtaining contributions to benefit the expedition. Overall, Shirase fought both government and public ridicule and only was successful when a nobleman and former Premier of Japan, Count Okuma, gave him support (Southpole).

The preparation did not progress rapidly as the money collected was not enough to buy a big ship and remodel it for the expedition. Shirase wanted to borrow a naval boat, but because he was ex-Army, military rivalries delayed him getting a boat for three months. Eventually he acquired a very small three-masted wooden fisherman's sailboat with a displacement of 199 tons (about one-third the size of the Terra Nova) which was named the Kainan Maru (Akita pioneers). As it was not sufficient to navigate in the icy ocean of the Ross Sea with only three masts, a used steam engine of 18 horsepower was installed as an auxiliary engine. The ship was also reinforced with 6-millimeter thick sheet steel mounted on square timbers 7.6 centimeters thick and 15.2 centimeters wide.

When Japan’s first expedition to the Antarctic sailed from Tokyo on 1 December, 1910, only a handful of students watched the departure. Shirase had wanted to leave Japan in summer, as it would take four months to travel from Japan to Antarctica. On the way to the Ross Sea, Shirase spent four nights in Port Nicholson, Wellington, where he bought water, vegetables, tinned meat and some fuel. Shirase reached 74°16', but the Ross Sea was too frozen to penetrate although the coast of Victoria Land was sighted on 6 March. On March 14, 1911, ice prevented any further advance of the ship in the Ross Sea and Shirase left the Antarctic region.

Shirase did not return to New Zealand, perhaps out of embarrassment, and instead he went to Sydney, where he arrived on 1 May, 1911, where he was greeted with suspicion and hostility. He had anchored on one side of the Opera House, on the other side of which the Australian naval base was situated. A resident of Vaucluse granted the party free use of part of his garden to erect a prefabricated hut. The Captain of the ship, Nomura, and several crew members returned to Japan in an attempt to raise additional funds while the rest of the expedition remained behind, apparently with little money and food, and living a life close that of beggars. A former member of Ernest Shackleton's 1907 expedition, Professor Edgeworth David, from the University of Sydney, came to the rescue. His enthusiastic involvement did much to reassure the Australian public. Eventually Shirase and his crew were able to stay anchored at the other side of the naval base. He stayed in Sydney for six months, and the following austral spring left for Antarctica on November 11 for the second attempt. However, the stay was marked by the hostility of the local newspapers and Shirase wrote, “The New Zealand press viewed our attempt with ridicule. The New Zealand Times was particularly poignant in its comments upon us. It remarked that we were a crew of gorillas.
sailing about in a miserable whaler, and that the polar regions were no place for such beasts of the forest as we. The zoological classification of us was perhaps to be taken figuratively, but many islanders interpreted it literally, because crowds of people came to our tents daily to observe the 'sporty gorillas' misguided with the crazy notion of conquering the South Pole' (Southpole).

This time, Shirase had decided to change the objectives of the expedition from the traverse of the Antarctic into that of scientific research and exploration at King Edward VII Land. On January 16, the Kainan Maru arrived at Whale Bay in the Ross Sea, one day after Scott's arrival at the South Pole (who in turn was beaten by Amundsen). A party was sent ashore at a spot they named 'Kainan Bay' but because the ice was filled with so many crevasses the party came back on board and the Kainan Maru headed off to the west, where they came across Amundsen's Fram which was waiting for Amundsen's return from the Pole. Visits were exchanged but any serious discussion was prevented by language difficulties. In the Antarctic the Fram and Kainan Maru had been within two miles from each other, but they did not meet. Amundsen visited Japan just at the beginning of the Showa period (late 1920s early 1930s) and met with Shirase (apparently Shirase was still so poor that he had to borrow suitable clothes before he could meet Amundsen).

Where the Kainan Maru was moored the top of the ice shelf was about 100 metres high. Shirase apparently wrote "we were resolved to scale the so-called insurmountable barrier or die". After cutting a zig zag path up the nearly perpendicular slope and some sixty hours later the men stood at the top. This was the starting point of his so-called "Dash Patrol" which consisted of seven men, two of whom would remain at the edge of the ice shelf as a base camp while the other five would make a dash to the south on sledges pulled by 28 dogs. They started for the pole on January 20, 1912. The trip was anything but a dash as the cold, blizzards, and separation of the two sledges meant that after nine days of traveling 282 kilometers, Shirase and his team decided to turn back to the coast on 28 January. Before returning, the party stood in a row and planted a Japanese flag in the ice at latitude 80°05' south, burying a copper case containing a record of their journey, and naming the snow fields around them the "Yamato Yukiha," or Japanese snowfield. This point was not actually a part of the continent but was a part of the ice shelf in the Ross Sea. Although Shirase claimed all the area of the Ross Ice Shelf within sight, this claim has never been taken seriously, even by Japan (Rubin 1996:37). Japan's actual arrival in Antarctica was attained fifty-six years later, in 1968, when Masami Murayama and a team from JARE 9 made a return survey trip to the South Pole from Syowa Station (NIPR 1998a). The map shows the voyages of the Kainan Maru (Southpole).
While Shirase was heading to the South Pole, the crew on his ship, the *Kainan Maru* left the Bay of Whales and sailed around the coast charting this. A shore party was dropped at Bisceo Bay in King Edward VII Land where they reached the foot of the Alexandra Range which had not been seen at close range until that time. The summit of the mountains could not be reached as a large crevasse blocked the way, but a memorial board was erected to commemorate the journey. The ship then made her way back to the Bay of Whales but it was not until February 2 that the bay could be entered as the wind was against the ship. The expedition left Antarctica on 3 February, 1912 and on the way back to Japan they visited Port Nicholson for about a week at the end of February/beginning of March. The *Kainan Maru* returned to Japan on June 20, 1912. Although the party had left in a silent departure, their welcome in Yokohama was a tremendous reception and apparently 50,000 citizens attended a welcoming ceremony. In Konoura there is an Antarctic museum which has displayed tools of Shirase’s Antarctic expedition, including his passport, which apparently shows: “destination Antarctica via New Zealand”.

When Shirase returned to Japan, he had amassed a debt of around ¥120,000, which took until 1936 to repay. To generate income, Shirase lectured on his Antarctic Expedition. Shirase died on September 4, 1946, at the age of 85, his neighbors apparently not knowing that this old man had achieved fame as the first Japanese explorer of the Antarctic.

Shirase is remembered as “Uncle Antarctica” by his descendants. More broadly, on the east coast of the Ross Sea, his name has been given to the “Shirase Coast”, and his adventures and fame are remembered in the name of the icebreaker *Shirase*. Shirase composed a *waka*, a short Japanese poem, as his farewell effort, "Study the treasures under the Antarctic and make use of them even after my death" (Akita pioneers).

Shirase’s expedition, despite earlier misgivings by New Zealand, is also commemorated in New Zealand. During the 80th anniversary in 1992 of the Canterbury Museum a permanent display of Shirase’s Antarctic expedition was mounted. Although there was evidence of Scott, Shackleton and Amundsen’s expeditions, there had been no displays about Shirase. The town of Konoura contributed a replica of the Kainan Maru to the museum (Tanabe 1999).

2.3 International Geophysical Year and the Antarctic Treaty

“Japan resumed its activities in the Antarctic in order to participate in the scientific programmes of the International Geophysical Year in 1957-58 about half a century after the first Japanese party led by Lieutenant Nobu Shirase was sent there in 1910-12” (NIPR 1998:3). Participating nations in the IGY were able to locate their research stations anywhere on the continent regardless of prior claims to national territory. The eight claimant nations, Japan and four other non-claimant states (Belgium, South Africa, the Soviet Union and the USA) participated in the research programmes of the IGY. The IGY programme was only possible because an agreement had been reached in 1955 that sovereign rights in Antarctica would not be affected by the IGY scientific programmes (Dodds 1997:15). The first Japanese Antarctic Research Expedition (JARE) was sent to the Antarctic on board the *Soya* in 1956 to carry out scientific research in various fields and on 29 January, 1957, Syowa Station was established.

Following the Second World War, Japan had renounced any rights in Antarctica under the Japanese Peace Treaty of 1951 but it had whaling interests (Wong 1999). This is apparently
why it was invited to participate in 1959 as an original signatory to the Antarctic Treaty. It is likely also that Japan was keen to establish a reputation as a worthwhile member of the Pacific community and that, when it declared an interest in Antarctica, a number of the world’s powers also involved in Antarctica considered it much better to have Japan included in the Antarctic Treaty System.

The success of scientific activities during and after the IGY and increasing widespread fear that Antarctica might be a possible site of Cold War tension led to a general consensus among a number of nations to ensure the peaceful utilisation of the Antarctic through scientific research and international cooperation. Eleven countries (Argentina, Australia, Belgium, Chile, France, Japan, New Zealand, Norway, South Africa, the Soviet Union, the United Kingdom, and the United States) ratified the “Antarctic Treaty” in 1961 (Dodds 1997:38). Japan thus became one of the original signatories of the Antarctic Treaty, giving it considerable influence in the management of the future of Antarctica.
3.1 Introduction

Since its participation in the IGY and its commitment to Antarctica through signing the Antarctic Treaty, Japan has had an almost continuous presence in Antarctica through the conduct of scientific research at its Antarctic bases and participation in international programmes. Prior to Japan's first modern Antarctic expedition and since Shirase's expedition, its activities in the Antarctic and Southern Ocean region had primarily consisted of whaling, with the Japanese fleets expanding during this period. Even today, among Japan's more well-known Antarctic activities are its annual whale catch of about 300 whales, the meat of which is sold to fund scientific research, and Japan is the primary harvester of krill which has been commercially fished since about 1974 (Rubin 1996:56). This section, however, will examine Japan's activity in relation to the Antarctic continent and will not describe its activities in the Southern Ocean.

Japan, like the UK, Germany and Russia, has a major polar research institute providing most of the scientists and support staff, whereas New Zealand tends to draw most of their scientists from universities (Rubin 1996:159). Japanese Antarctic research is conducted cooperatively by a number of governmental agencies under the name of the Japanese Antarctic Research Expedition (JARE). Below follows a description of the organisation of Japanese Antarctic activities.

3.2 National Institute of Polar Research (NIPR)

The National Institute of Polar Research (NIPR) is the primary, governmental, agency in Japan which administers Japan's Antarctic activities. The NIPR was established in 1973, as one of the Inter-University Research Institutes of the Monbusho (the Ministry of Education, Science, Sports and Culture is referred to as Monbusho), to conduct polar research in Japan. It replaced the former Polar Research Centre of the National Science Museum. Its legal status is more or less equivalent to that of the national universities in Japan. Its head office complex is located in Tokyo and includes a research building, a guesthouse, and a library. A training house with meeting rooms and accommodation facilities is maintained at Oishi village near Lake Kawaguchi at the foot of Mount Fuji which is used for overnight training courses. Sea transport is by means of the icebreaker Shirase which is operated by the Japanese Maritime Self-Defence Force (NIPR 1998a).

The two main tasks of the NIPR are to promote scientific research in the various disciplines in polar areas, as well as to administer the scientific programmes and logistic support of the Japanese Antarctic Research Expeditions (JARE). The transportation of personnel and cargo to the Japanese bases is done by icebreaker. In addition, the NIPR assists postgraduate research courses on polar subjects.

The research programmes of the NIPR are grouped into five overall disciplines:

i. Upper atmosphere physics;

ii. Meteorology, glaciology and oceanography;

iii. Earth sciences including geology, geomorphology, solid earth geophysics and meteoritics;

iv. Marine and terrestrial biology;

v. Polar region engineering.
The NIPR is responsible for collecting, processing and utilising data and samples obtained by Antarctic and Arctic investigations. It consists of two main scientific Divisions, for Research and Data Collection and Processing. The Division of Data Collection and Processing deals with data and specimens in the fields of biology, glaciology and aurora physics. These data and specimens are used for joint research programs with other institutions at the NIPR or are distributed to qualified scientists based on advice from advisory committees (such as the Antarctic Meteorite Research Committee and Ice Core Research Committee). There are also four scientific Centres, for Arctic Research, Science Information, Environment and Monitoring, and Meteorite Research. Aurora data are preserved for the World Data Centre C2 for Aurora. The Information Centre is equipped with powerful data processing facilities, a Multipurpose Satellite Data Receiving System, and a polar information retrieval system. The Arctic Environment Research Centre operates an Arctic field laboratory in Svalbard. An Antarctic Meteorite Research Centre was newly established in 1998. In addition there is an administrative section and a library. Appendix 7.1 provides a chart outlining the organisational structure of the NIPR.

The Centre for Antarctic Environmental Monitoring (CAEM) was established in 1995 and studies the Antarctic environment in conjunction with the global system. It has three aims:

i. To study processes and mechanisms of variability of Antarctic systems over decade periods;

ii. To determine the impact of global change on Antarctic systems;

iii. To understand the role of Antarctica in influencing global change.

To achieve these goals this Centre focuses on the following three areas:

a. Ocean-geosphere environments: to monitor the related interactions between the ocean-ice sheet–atmosphere system with the underlying crust to clarify the role of marine-geophysical dynamics in influencing global change.

b. Atmospheric environments: to monitor the Antarctic atmosphere as a whole, from troposphere and stratosphere to ionosphere and magnetosphere, including interactions between the sun and earth, auroral physics, trace gases and material cycling, to better understand the role of the Antarctic atmosphere in global change.

c. Biosphere. By monitoring ecosystem changes, the Centre evaluates the impact of global change on the Antarctic biosphere and any biogenic feedback to the climate. A main area of research is that of photosynthetic production which is a starting point of the food chain on land and in the ocean. A slight change in environmental conditions will influence the scale of primary production and determine the population size of predators.

In addition to the Centre for Antarctic Environmental Monitoring, NIPR has established the Arctic Environment Research Centre (AERC) in 1990 in Japan. This looks after the Svalbard field laboratory. The official NIPR publication (1998a) states that Japan is concerned over the recent rapid growth in human activities affecting the polar regions and the planet. As Japan is located in the Northern Hemisphere it supports environmental research in the Arctic, “accumulated knowledge and experience of NIPR from its Arctic research are essential for the Centre for planning and executing Arctic research”. The two main tasks of the AERC are to act as a national corresponding office for the world Arctic research community, and to conduct its own research.
At present, there is a full-time staff of 135 including Antarctic expeditioners who all have the status of government employees. Two advisory bodies consisting of 20 members each (nominated by Monbusho) direct the basic policy of the Institute and coordinate the Antarctic programmes. The NIPR has scientific and technical committees, which consist of about 120 members in total, who are responsible for making plans for the implementation of the JARE programmes.

In 1993, the NIPR joined the Graduate University of Advanced Studies, and the Department of Polar Science was established in the School of Mathematic and Physical Science.

The NIPR is responsible for all four Japanese scientific stations in Antarctica. Syowa Kiti (Syowa Station) is the main JARE station and was established in 1957. Two other stations, Mizuho Kiti (Mizuho Station) and Asuka Kiti (Asuka Station) were established in 1970 and 1984 respectively. The most recent station Dome Fuji Kiti (Dome Fuji Station) was established in 1995.

Data analyses are made in the home institute, Syowa Station, on board the icebreaker Shirase and in the field laboratories which are maintained in three sites in Iceland and at Svalbard.

3.3 Japanese Antarctic Research Expedition (JARE)

A number of governmental agencies cooperatively conduct Japanese Antarctic research under the name of the Japanese Antarctic Research Expedition (JARE), which is operated by the NIPR for both the scientific programmes and logistics, except the transportation of personnel and materials by the icebreaker Shirase. All decisions and approval of proposals for research activities rest with the “Headquarters for JARE” which is under the chairmanship of the Minister of Education, Science, Sports and Culture. The Secretariat of the JARE Headquarters belongs to the Science and International Affairs Bureau of Monbusho. Other agencies involved are the Japanese Meteorological Agency of the Ministry of Transportation (meteorology), the Communication Research Laboratories of the Ministry of Posts and Telecommunications (ionospheric physics); the Hydrographic Office of the Ministry of Transportation (physical and chemical oceanography), and the Geographical Survey Institute of the Ministry of Construction (geodesy and cartography). JARE draws personnel from the above agencies as well as NIPR, universities, and private enterprises (NIPR 1998b).

Cooperative research on polar region logistics is a practical requirement of JARE. Research has included investigations into cold region buildings, over-snow and air-cushioned vehicles and sledges, cold-weather clothing, production and saving of energy, safety measures, human physiology, waste disposal. Waste heat recovery systems of diesel engines were developed to save the fuel consumption at Antarctic stations, and wind generators have apparently proved satisfactorily for operating small automated observation stations.

The 39th JARE (1997-1999) is composed of 58 personnel (40 winter personnel and 18 summer personnel) who carry out a range of research projects and routine observations. It would appear that half of the winter over staff are scientists, and half are logistics personnel.
The leader at Syowa in the winter is a geophysicist and the deputy leader, who is the summer leader, is a geomorphologist.

3.4 International Collaboration

NIPR cooperates with domestic and foreign universities and research agencies and it appears that JARE’s Antarctic scientific activities have been mostly carried out by collaboration within the international observation network and the international Antarctic scientific community. Currently 500 Japanese investigators are affiliated with NIPR. A major function of the Centre for Antarctic Environmental Monitoring is to provide a framework for collaborative research. To undertake the above research programmes, the Centre is developing close links among research groups within NIPR and with other institutions both nationally and internationally (NIPR 1998a).

Permanent members of the NIPR represent various national and international polar research organisations. The NIPR established and continues to operate national Antarctic data centres for aurora, biology, glaciology, solid earth geophysics, geology, upper atmosphere physics and logistics in cooperation with Working Groups of SCAR (Scientific Committee on Antarctic Research) of the International Council of Scientific Unions (ICSU).

Japanese scientists have been involved with international programmes such as the long-term multi-national programme BIOMASS (Biological Investigation of Marine Antarctic Systems and Stocks), Solar Terrestrial Energy Programme (STEP), Global Atmospheric Chemistry (IGAC) Programme, International Geosphere-Biosphere Programme (IGBP), and the International Absolute Gravity Base-station Network (IAGBN), among others.

From 1980 to 1990, seismic and volcanic activity was studied in cooperation with New Zealand and US scientists. In the past, Japan and New Zealand have worked together on three major research projects; the Dry Valley Drilling Project, the Mt Erebus Seismic Study, and the Mt Erebus Eruption Mechanism Study.

Since the geomagnetic conjugate point of Syowa Station is located in Iceland the geomagnetic conjugate research programme is being carried out in collaboration with the Scandinavian countries.

3.5 Japan’s Antarctic Bases

Dr Walton in the Lonely Planet Guide (Rubin 1996:159) suggests that there is a wide variation among the set up of the bases in Antarctica, with some bases being very simple providing only basic protection for short visits, while others provide all the modern facilities. He believes that “each one in its own way reflects the culture of the nation that established it – visiting Antarctic research stations is seeing a distillation of national characteristics!” Japan has four Antarctic stations, of which only Syowa is occupied all year.

Syowa Station is located at 69°0’S 39°6’E – 66°4’S 71°4’E and is the first and mother station of JARE. It is situated on East Ongul Island in Lutzow-Holm Bay which is separated from the continent by Ongul Strait which is about 4km wide. The climate is comparatively moderate, with average air temperatures of −10.4°C and average wind speed of 6.4m/s. The rock surface is exposed in the summer, revealing moss and lichen colonies.
After the station was completed in 1957, six expeditions were dispatched between 1956 and 1962, but the station was closed between 1962 and 1965 because of the decommissioning of the supply ship Soya. An icebreaker Fuji was built during this period, carrying two large Sikorsky S61A helicopters and one Bell 47G helicopter. She was also capable of carrying about 500 tons of cargo and was equipped with shipboard observation facilities. With this new means of transportation, Syowa Station was reopened on February 1, 1966, by the 7th JARE. Facilities at the station were expanded to include about thirty buildings, fifty vehicles and two airplanes. The total floor area of the buildings has increased from 200m$^2$ (3 buildings) in 1957 to 5,555m$^2$ (50 buildings) and other facilities in 1994. A construction programme to improve Syowa Station buildings began in 1991 with a new central four-story building with a fireproof design constructed in 1992.

Mizuhoto Station was established in July 1970 along the geomagnetic meridian passing through Syowa Station. It is located on the inland ice sheet at 70°42'S and 44°2'E (2,230m above sea level) at about 270km southeast of Syowa. The natural environment is harsh with average temperature of –32.5°C and average wind speed of 10.8m/s, and it is located in a severe katabatic wind region. Living and scientific facilities of 490m$^2$ in total floor area were steadily buried under snow resulting in intermittent occupation. A few members maintained year-round operation from 1976 to 1986 (observing meteorology, glaciology, and upper atmosphere physics) but after 1987 the station was automated for meteorological and glaciological observations using the ARGOS data collection system. The station is visited by observers from Syowa station several times a year and plays an important role as a supply and air base for observations in inland areas.

The commissioning of the Shira$I$ made it possible for JARE to expand the area of its activities and to establish Asuka Station. Asuka Station was established in December 1984 on the ice sheet north of the Sor Rondane Mountains at 71°3'S and 24°8'E which is 930m above sea level. Most of the station’s facilities (about 450m$^2$) have become buried under snow. The principal role of the station was to support field work in geology, geomorphology, meteorite search, glaciology and biology into the Sor Rondane Mountains although year-round observations including meteorology, glaciology, solid earth geophysics, and upper atmosphere physics were conducted between 1987 and 1991. The station’s activities have been suspended from 1991.

Recently, finding and providing for a site for deep drilling far inland has become more important to scientific activities. A new station called Dome Fuji was established in 1995 at 77°1'S and 39°4'E for the deep drilling programme which was to be conducted for 2-3 years. It is located on the icesheet about 1000km south of Syowa Station and is 3810m above sea level. The annual mean air temperature is –54.4°C. The station is equipped with 8 buildings (380m$^2$ in total). It was continuously maintained by nine people in the period between 1995 and 1997 for 2500-meter deep ice-core drilling and atmospheric observations. The station is now used as an automatic observatory and a summer observation site.

3.6 National Legislation and Environmental Protection

In 1997 Japan enacted a bill requiring stricter conservation efforts in the Antarctic environment. This new law enabled Japan to ratify the 1991 Protocol on Environmental Protection to the Antarctic Treaty. It prohibits animals and plants from being brought into
Antarctica except for research purposes and outlaws the capturing of animals. It also requires that waste be either properly disposed of or brought back from Antarctica and that environmental assessments be carried out for all projects on the continent (Kidsweb 1997).

In response to the commitment to ratify the Protocol on Environmental Protection, the Monbusho has made the decision to retrieve waste around Syowa Station. According to the Ministry, 40 vehicles, including 27 snowmobiles and several trucks, and a number of computers have been abandoned around the station since 1966. Some of those items were supposed to be recycled, but the tight schedules of research expeditions forced members to leave the items untouched. The nearly 500 tons of discarded waste (vehicles and other machinery) which has accumulated around Syowa Station during the past forty years will be brought back to Japan over a five year period from 1997. The first batch of waste was scheduled to be brought back by an expedition team that left for Antarctica in November 1997 (Kidsweb 1997).

The official guide to the National Institute of Polar Research 1998(a) reads that “in recent years, environmental protection of Antarctica and its unique ecosystems has become increasingly important in planning and conducting Antarctic research” and that "appropriate procedures for environmental protection are followed by JARE". A new programme for monitoring changes in global and regional environments and ecosystems was apparently started at Syowa Station and its coastal and inland vicinity in 1997. The monitoring programmes include studies on atmosphere CO₂ concentration, sea level, population of penguins.

3.7 Tourism

During the 1996-97 Antarctic summer season, 7,322 shipborne tourists visited Antarctica of which 7% were Japanese which represented a 4% increase from the 1994-95 season. Two Japanese tour companies are associate members of the International Association of Antarctic Tour Operators (IAATO) which they joined in 1996. Japan Euro-Asia Service Company (JES) is a leading tour operator in Japan. Since its founding JES has specialised in adventure tours and although it initially operated mostly in Asia, was one of the first companies to actively promote Antarctic tourism. During the 1997-98 season JES chartered four voyages aboard the Alla Tarasova. The second company is Playguide Tours which has offices in British Columbia and Japan. It offers programmes worldwide to the Japanese market. In the 1997-98 season it was expecting to sponsor four voyages to Antarctica aboard the Akademik SergeiVavilov (IAATO 1997). The Japan Environment Agency is the coordinating body for permits, notification and other obligations of the ATS in relation to Japanese citizens. Guidance. In 1997, Quark Expeditions performed a circumnavigation of the Antarctic continent on the Kapitan Klebnikov and during this voyage visited Syowa station (Schoeling 1999).

3.8 Antarctica in Japan

Each year as the next JARE leaves Tokyo harbour for Antarctica the expedition takes flags from ten different Japanese schools with it. The schools are selected by Asahi Shimbun (a leading Japanese newspaper) and the programme is run in conjunction with Blue Ice International (a global network linking children around the world to Antarctica). When the expedition returns, the flags along with pictures of the flags in Antarctica are taken back to the schools. Apparently, just before the departure of the Shirase, a wild celebration takes
place as family and friends wish each expedition member a successful journey (Blue Ice International 1997).

Within Japan, there are several Antarctic-related museums. The icebreaker *Fuji*, which is moored near Osaka, has a permanent exhibition on board. The main Antarctic museum is probably that commemorating Japan’s first Antarctic explorer Nobuo Shirase and includes much material on Shirase’s 1910-12 Antarctic expedition (Rubin 1996:66)

Several Antarctica-focussed movies have also been produced by Japan. Koreyoshi Kurahara’s film “Antarctica” was produced in 1984 and features the fate of the sledge dogs of the 1958 Japanese expedition. The season after Syowa station was built, it could not be staffed because pack ice prevented the relief ship *Soya* from approaching. The winter-overs from the previous year were ferried off by helicopters, the last of which flew off on 11 February, 1958. Fifteen of the station’s sledge dogs were left on the station, as there was apparently not enough room for them aboard the ship. It is unclear why the dogs were not shot. However, when the third JARE returned in January 1959, two of the dogs were found alive. These dogs, Taro and Jiro, subsequently became famous in Japan and Kurahara’s film was the country’s biggest movie in 1984. Harushi Kadokama produced “Virus” in 1980 which was partially filmed on location in Antarctica, and is a nuclear-holocaust thriller (Rubin 1996:79)
Japan’s early Antarctic exploration was motivated by an individual’s dream rather than from any nationalistic aim. Whereas Scott’s and Shackleton’s expeditions received a lot of general public and government support (both in New Zealand and Great Britain), Shirase’s departure was not supported in the same way with goods, funds, and a huge public presence at farewell. For example, an estimated 30,000 people were present to see of Shackleton’s *Nimrod* from Lyttleton in 1908 (Quartermain 1971 quoted in Gee 1998:8). New Zealand was home to many of the Antarctic expeditions, including a brief stop by Shirase.

Between Shirase’s private Antarctic expedition and the first JARE in 1956, Japan had no direct involvement in Antarctic expeditions and its Antarctic activities primarily consisted of whaling. Its subsequent participation in the IGY caused a little concern for New Zealand. Dodds (1997:168) commented that “in the midst of the cold war, the IGY witnessed .... Japan and South Africa raising the profile of their interests in the polar region”. The New Zealand Ministry of External Affairs at that time was concerned that the Japanese might locate a base in the region and hoped that the proposal for a joint American/New Zealand base in the Ross Sea Region would dissuade the government in Tokyo.

European exploration of Antarctica, with which New Zealand’s Antarctic involvement was inextricably linked, continued until the Second World War which halted Antarctic expeditions, after which New Zealand’s again became a launching point for British and now also American expeditions (Gee 1998:6). New Zealand itself in fact did not undertake any direct involvement in Antarctica until the IGY. At that time it opened a joint base at Cape Hallett with the United States and it began the construction of Scott Base. This was also the period when Sir Edmund Hillary led a New Zealand party to the South Pole (when it was only meant to provide the Ross Sea Side party of a Trans-Antarctic Expedition organised by Britain). Initial interest in Antarctica by New Zealand at this time was primarily from private interest groups, which indeed had to pressure the New Zealand government quite strongly to become involved in the IGY.

The IGY caused a sudden increase in official commitment in New Zealand’s role in Antarctica including a renewed awareness of the Ross Dependency. Dodds (1997:157) describes New Zealand’s role in the Antarctic as “paradoxical” as the New Zealand government took no active interest in the Ross Dependency from 1925 to 1955. It did not dispatch a single national expedition to the Ross Dependency. New Zealand’s historical association with the Antarctic region has rather been shaped by its connection with the British Empire. Nevertheless, its relative proximity to Antarctica compelled New Zealand to retain an interest in the political and resource management of the continent and the Southern Ocean.

During the inter-war period, New Zealand’s Antarctic involvement was shaped by Britain’s demands, but increasingly New Zealand became more occupied with resource regulation and mutual cooperation between states with the development of pelagic whaling (Dodds 1997:161). The living resource management of the Ross Sea region remained a policy priority for the government in spite of the damage inflicted to allied whaling fleets during the Second World War. New Zealand has been an influential member of the Antarctic Treaty System in terms of addressing the living and non-living resource question. Its role has often been interpreted as being between the hard-line territorial concerns of claimant states such as Argentina and Australia and the non-claimant states such as the USA and Japan (Dodds 1997:174). During the 1990s, the ratification of the Protocol has been the primary focus of

As New Zealand was the first country to ratify the Protocol and implement domestic legislation, its government officials have had quite extensive discussions about New Zealand’s domestic enabling legislation of the Protocol with Japanese officials prior to Japan ratifying the Protocol (Prior 1999).

The living resource negotiations during the late 1970s saw concerns by the nations bordering the Southern Ocean over ecological management and resource exploitation pitched against the major fishing interests of the Soviet Union and Japan (Dodds 1997:216). Indeed, conservation measures have often been blocked by fishing nations such as Japan and Russia.

During the 1990s, New Zealand’s focus has been on environmental stewardship. Japan’s interests appear to have been its scientific research in Antarctica, as well as the living resources of the Southern Ocean. The Antarctic origins of the two nations are quite different. Their geographical relationship with Antarctica perhaps generates a different view of Antarctica. Their geopolitical views do not always match. More research needs to be done on the participation of Japan in Antarctica to gain better knowledge of its objective and historical/cultural perceptions. As both countries have represented Antarctica in the international arena as participants in the Antarctic Treaty System for forty years, it is essential that nations which undertake such responsibility also work to understand the nations with whom they have an integral connection in order to better cooperate for the future protection of Antarctica.
V CONCLUSION

"Antarctica is a special place of global importance" (Dodds 1997:222). Its geographical isolation, lack of an indigenous population and without a single state in a position of representing the interests of the continent, make it unusual. An examination of how we respond to places such as the Antarctic is required but also an appreciation of practical political action. The implementation of the Protocol has highlighted the dilemma that the environmental management of Antarctica remains mediated by a fragmented system of sovereign states.

Dodds (1997:223) also suggests that the future management of Antarctica will also depend on evolving geographical and political understandings of the Antarctic region. With greater understanding of the Antarctic and the Southern Ocean different sets of political issues have emerged. At the beginning of the 20th century Antarctica's future was primarily determined by a few European, American and Australia/New Zealand nations. The signing of the Antarctic Treaty widened this group to include representatives from Africa and Asia. Even today, although the membership of the ATS has grown significantly, the meaning of Antarctica has been tied up "within the institutional and intellectual framework first developed by the original twelve states". Antarctica poses major questions regarding resource management, sovereignty, environmental protection, economic development and are part of global politics rather than only nation or hemispheric interests.

This paper has highlighted a few of the similarities and differences between the participation of Japan and New Zealand in Antarctic affairs. Although the issues of marine living resources and Antarctic environmental protection are only touched on lightly, it is apparent that despite both nations' lengthy involvement in Antarctica and the Antarctic Treaty System, the two nations have very different Antarctic histories. The origin of Japan's involvement in the International Geophysical Year is not clear and requires further investigation to better understand its geopolitical motivation. Both New Zealand and Japan have now been physically active in Antarctica for over forty years. Continuing pressure on resource use and conflict between nations over this use requires a better knowledge of each other's historical polar interest, cultural legacies and each nation's understanding of the significance of Antarctica.

The importance of Japan and New Zealand to the international politics of Antarctica and the Southern Oceans should not be underestimated.
VI BIBLIOGRAPHY

Dodds, K., 1997, Geopolitics in Antarctica – View from the Southern Rim, Scott Polar Research Institute, University of Cambridge, United Kingdom.

Gee, R. J., 1999, Heroics to Heretics – New Zealand’s History with Antarctica, SOCI 603: Historical Research in New Zealand, unpublished project, Lincoln University, Christchurch, New Zealand.


Personal Communications


Schoeling, Darrel, 1999, Office of the Secretariat, IAATO, New York, USA.

Tanabe, Makoto, 1999, Professor, Professor of History, Sonoda Women’s University, Amagasaki, Japan.


Internet Website Addresses

Akita Pioneers, no date, Nobu Shirase, http://ns.media-akita.or.jp.


Appendix - National Institute of Polar Research Organisation Chart

Director-General

Advisory Board

Chief Research

Office of Administration
  - Secretariat Section
  - Accounting Section
  - Expedition Administration Section
  - Logistics Section
  - Environment Section

Office of Expedition Operations

Library

Division of Research
  - Geophysics
    - Upper Atmosphere Physics I
    - Upper Atmosphere Physics II*
    - Physics and Chemistry of Polar Atmosphere*
    - Glaciology
    - Earth Sciences
    - Crustal Studies
    - Mineralogy and Economic Geology*
  - Physiology and Ecology
  - Cryobiology I
  - Cryobiology II*
  - Polar Region Engineering*

Division of Data Collection and Processing
  - Biological Data
    - Aurora Science Data
    - Low temperature Materials

Arctic Environment Research Center

Information Science Center

Center for Antarctic Environmental Monitoring

Antarctic Meteorite Research Center

Syowa, Mizuho, Asuka and dome Fuji Stations

* Departments for visiting researchers who are invited from national universities and research institutions as visiting professors and/or associate professors.