

1819 transferred the sealers' attention from South Georgia to stocks farther south.

One year after the discovery of the South Shetlands, at least 47 British and American vessels were sealing in the South Shetlands. But by the following season, many vessels were already returning practically empty. Sporadic sealing continued on South Georgia and elsewhere in the Dependencies through the nineteenth century, and the last old-time sealer and whaler was the brig *Daisy*, which visited South Georgia in 1912–13.

The sealers' quarry was the southern elephant seal, which was taken for its high quality oil, and the South American fur seal of the Falkland Islands and the Antarctic fur seal of the Dependencies, which were taken for their fine pelts. The valuable, easily processed, fur seals were the main quarry, while elephant sealing, which required the setting-up of tryworks, was often of secondary importance. I would have been interested to see an analysis of the changing values of the two types of seals as markets and economic conditions changed.

Several sealers and explorers visiting the region commented on the unsustainability of an industry in which all adult seals were slaughtered and their offspring left to starve. James Weddell wrote in 1825 that '...the fur seal might...have been spared to render annually 100,000 furs for many years to come. This would have followed from not killing the mothers till the young were able to take the water; and even then, only those which appeared old, together with a proportion of the males...'

As fur seal stocks at South Georgia dwindled in the nineteenth century, sealers took increasing numbers of elephant seals. When shore whaling began at Grytviken in 1904–1905, elephant sealing started again as a sideline. It was a very cost-effective operation that yielded around 2,000 tons per year of an oil equal to the best whale oil, and it became increasingly important to the profitability of Grytviken. In the early 1960s, before Grytviken closed, seal oil accounted for nearly one-third of total oil production.

In a bid to prevent a recurrence of the earlier overexploitation of fur and elephant seals, the Falkland Islands Government issued the Seal Fishery (Consolidation) Ordinance in 1909. Elephant sealing was regulated by dividing the coastline of South Georgia into four sectors, each of which was allotted a quota of 2,000 seals. Only three divisions would be worked each year, in rotation, and the fourth was left undisturbed. There was a close season for breeding and there were also four reserves where seals were fully protected. An important part of this management plan was that only male seals could be killed. However, the population dwindled and, in 1952, the quota was reduced. The population soon rose again and sealing was then managed on a sustainable basis until Grytviken whaling station closed in 1964–1965 (and Dickinson's employment was terminated).

There is an emphasis on sealing in the Falkland Islands, with three chapters being devoted solely to this area. This is a subject that is less well-known in popular

accounts than the short-lived slaughters in South Georgia and the South Shetland Islands, and it included a pelagic hunt for fur seals. Unfortunately, the method of hunting at sea is not described. As an interesting sideline for fans of Shackleton's expeditions, Frank Worsley, the captain of *Endurance* and *Quest*, applied for a sealing licence and permission to use *Discovery* as his sealing vessel. Both were refused, but Worsley then set up British Sealing Industries Ltd, which never went into operation.

The final chapter, 'Aftermath,' discusses developments since the 1960s. Seal populations are flourishing, and fur seals have recovered from near extinction to an amazing abundance at South Georgia and growing populations elsewhere. They could support a sustainable industry, and there are suggestions that a cull would not come amiss before they seriously hamper the flourishing cruise ship industry. However, given the widespread antipathy to killing seals and the wearing of furs, it is likely that fur seals will be left to swarm undisturbed.

Dickinson has amassed under one cover a huge amount of information, often from obscure sources, on one of the more discreditable episodes of human involvement in the Falkland Islands Dependencies. As such, the book will be a valuable reference, but it shows the hallmarks of being hastily compiled. The combined chronological and geographical organisation is not easy to follow, and the amount of detail on individual sealing expeditions cries out for overviews to put them into perspective. (Robert Burton, 63 Common Lane, Hemingford Abbots, Huntingdon PE28 9AW.)

NORTHEASTERN SØRKAPPLAND LANDSCAPE DYNAMICS (SPITSBERGEN, SVALBARD)/DYNAMIKA KRAJOBRAZU PÓLNO-CNO-WSCHOD-NIEGO SØRKAPPLANDU (SPITSBERGEN, SVALBARD). Wiesław Ziąja, Wojciech Maciejowski, and Krzysztof Ostafin. 2007. Krakow: Wydawnictwo Uniwersytetu Jagiellońskiego. 64 p + 22 plates, illustrated, hard cover. ISBN 978-83-233-2317-4. doi:10.1017/S0032247408007584

The area of Svalbard described in this book is the southernmost part of Spitsbergen, the largest island in the archipelago of Svalbard. Sørkappland (South Cap Land) is bounded by latitudes 76°30' to 77°N and 16° to 17°E longitude. Longyearbyen, the largest settlement on the island, is at 78°N, a near latitudinal opposite of McMurdo Station in Antarctica, at 77°51'S, where the climate is markedly colder. Northernmost Svalbard extends to nearly 81°N. The geography is mentioned here because of the differences that ocean currents and related factors produce in local and regional climates. The Gulf Stream in the North Atlantic Ocean warms landmasses, producing major differences in climate compared to those in the Southern Hemisphere. In addition, ocean currents and weather are different on the eastern (cold current) and western (warmer current) sides of Sørkappland, and that

is the setting to keep in mind when reading the account of the field research discussed in this book.

Svalbard is governed by Norway as a result of the Svalbard Treaty of 1920, which came into force in 1925, and is an 'open treaty' to other countries, numbering about 41 in 2001. Poland is one of those countries, and within the last decades, only Norway, Poland, and Russia have had permanent research stations in Spitsbergen, with other countries present in various locations conducting research. The Polish settlement on the north side of Hornsund has been there since the International Geophysical Year of 1957–1958, and provided the logistics necessary for the three investigators from Jagiellonian University who did the fieldwork on which this book is based. Although the time period for fieldwork was relatively short (7–23 August 2005), and considering the usual weather conditions in this area (mostly wet), these men gathered a great deal of information relating to the changes in glacier extent, landform development, wildlife, and vegetation that accompanied climatic changes over the past century or so.

The area of study is relatively small. The programme started on the eastern side of Sørkappland, where the ship from the Polish station transported the three scientists, who then moved on foot northward to the head of a fjord and then west across an approximately 10 km-expanse of glaciers to reach the head of Hornsund, where the ship evacuated them. The chapters in the book include details on the geographical setting, weather conditions, landscape elements (1900–2005), glacial recession and shoreline changes, animal colonisation (primarily birds and mammals), flora, soil development, mapping methods, and changes in the landscape since 1900. The text spans pages 7 through 62, in double-column format with the left side of each page in Polish and the right side in English. References follow on two pages. The 22 plates that follow the references include a general location map of the field area at a scale of 1 inch to 5 km, numerous color photographs of the area, examples of birds and vegetation types, and geomorphic examples of the shorelines, cliffs, and related features illustrated in maps and listed in a descriptive table. Of the 14 species of birds observed, only six breed locally, in a narrow expanse of the coastline. Five or six taxons of mosses, 15 species of vascular plants, and 30 species of lichens were found, some of which are illustrated in color photos.

The regional map and sketch maps show the recession of glaciers in Hambergbukta fjord (east side of Sørkappland) and Hornsund fjord in the years 1900, 1936, 1990, and 2005, with major glacier retreats in each year. Early studies were factors in measurements from those years, and satellite imagery and GPS measurements more recently will provide a more detailed and continuing record of what these glaciers do through time. The pass separating Sørkappland on the south and Torrell Land to the north is a good example of those changes. It is glacier-covered (Hambergbreen and Hornbreen), and in 1900 was more than 30 km in length (east to west), and

had a highest elevation of more than 300 meters above sea level. By 2005, it was 7.5 km long, with a high point 180 m asl, a dramatic change in 105 years. It is uncertain whether the glacier-covered pass is on bedrock above or below sea level, but it can be assumed that if recession of the major glaciers that comprise the pass continues, an open-water channel might occur from Hornsund on the west, transforming Sørkappland into an island, or become separated from the rest of Spitsbergen by a low, narrow isthmus (up to 3 km wide and a few dozen metres high) (page 61). Although not mentioned in the text, crustal rebound as the weight of ice is removed might make the difference in this scenario as it develops. The ocean currents on either side, consisting of the warmer waters of the Greenland Sea on the west, and the colder waters of the Barents Sea on the east, could then interact to change the dynamics of much of what is discussed and recorded in this book. The authors have thus provided a snapshot of conditions as of August 2005 that can be compared with changes predicted for the next 40 years or more to show the vulnerability that applies to the environment, landscape, surrounding waters, and flora and fauna. The area of only 12.72 km² that was mapped in 2005 will become a baseline for changes in this part of the archipelago and the North Atlantic. This is a major attraction of this useful documentary account of what might be attributed to a warming planet. The book is recommended for physical and biological scientists who maintain interest in the subject, as well as the general public and research libraries. (John Spletstoesser, PO Box 515, Waconia, Minnesota 55387, USA.)

EIGHT MEN IN A CRATE: THE ORDEAL OF THE ADVANCE PARTY OF THE TRANS-ANTARCTIC EXPEDITION 1955–1957. Anthea Arnold. 2007. Norwich: Erskine Press, Bluntisham: Bluntisham Books. 133 p, illustrated, soft cover. ISBN 978-1-85297-095-6. £12.75.

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The Commonwealth Trans-Antarctic expedition of 1955–58 was unusual among such ventures in that it employed an advance party. The main duty of this was, over the winter of 1956, to prepare a base camp for the main expedition, the camp to be named after Sir Ernest Shackleton, close to Vahsel Bay in the Weddell Sea. The party had the additional tasks of conducting scientific observations and of seeking possible routes southwards for the main party when it arrived a year later. This included the laying down of depots of stores. The question of why this departure from usual practice was deemed necessary is addressed in the preface of this work. The author states that it enabled Vivian Fuchs, the leader of the expedition, who accompanied the advance party on its voyage south in *Theron*, and who, after depositing the men and a large volume of stores at the site, returned northwards in that vessel, to complete some useful preliminary tasks. These included looking 'at the