

6 The First Whaling Town

In the summer of 1910, the American explorer and naturalist Roy Chapman Andrews (1884–1960) arrived on the Oshika Peninsula to visit the newly opened Tōyō Hogeī whaling station in Ayukawa. Andrews was on a three-year-long journey to East Asia, where he hoped to not only study cetaceans but also obtain whale skeletons he could bring back to the American Museum of Natural History in New York. During his four-month stay in Ayukawa he studied and photographed sixty-five whale carcasses while also befriending the Norwegian gunners in the town and documenting the life on and around the whaling station.¹ His first impressions of Ayukawa were quite idyllic, as he writes in his 1916 published travel monologue:

After spending a delightful month at [Kii-]Oshima, where three fine whale skeletons were secured, I returned to Shimonoseki to send them to New York, and then traveled northwards to Aikawa (Ayukawa), three hundred miles from Tokyo. Aikawa is a typical little fishing village, situated at the end of a beautiful bay which sometimes harbors as many as fourteen whale ships from the four neighboring stations.²

In Andrews's report we encounter Ayukawa as a buzzing whaling port full of hope and opportunity (Figure 6.1). However, always looming in the background of the village is the gigantic factory ship *Michail*, a machine turning life into death, separating the bodies of whales into consumer goods: meat, oil and fertiliser. Too massive to dock at the small pier of Ayukawa, the *Michail* must stay outside the coastal boundaries of the village, while at the same time extending the anthroposphere far into the open sea. The whaling station itself is featured prominently in Andrews's account; people are working hard but seem to be always content to quickly interrupt their bloody work to smile into the camera.

¹ Andrews, *Journals 1908–1912*. Andrews' visit in Ayukawa has only recently been rediscovered and analysed by Uni Yoshikazu and Katō Kōji, see for their joint publication: Katō and Uni, 'Roy Chapman Andrews no geirui chōsa shashin'.

² Andrews, *Whale Hunting with Gun and Camera*, 91.



Figure 6.1 Scene of Ayukawa with whaling station on the right side and the factory ship *Michail* in the open sea. Photo taken by Roy Chapman Andrews in 1910. Courtesy of the American Museum of Natural History.

In some pictures we see how dozens of townspeople gather at the pier of the local whaling station, watching with interest how whale bodies are dissected (Figure 6.2).

This chapter traces the development of the backwater fishing hamlet of Ayukawa into the first modern Japanese whaling town over the course of only four years. As I will argue, whaling towns like Ayukawa functioned as an industrial bridgehead to harvest the riches of the cetosphere and transform them into terrestrial commodities. In this way, not only the station itself, but the whole village became part of an industrial complex that devoured whales in ever faster quantities. Looking closer at Andrews's pictures, we get an idea of how much the ecological foundation of the town has changed in only four years. The hills are barren, all the trees have been cut to feed every hungry whaling station. Everywhere in the town, fertiliser plants have sprung up and instead of planting rice or barley, the fields surrounding Ayukawa have been stockpiled with whale



Figure 6.2 Flensing a whale with onlookers at the new Tōyō Hogeï whaling station in Ayukawa. Photo taken by Roy Chapman Andrews in 1910. Courtesy of the American Museum of Natural History.

meat, which is drying in the sun before being processed. While Ayukawa's transition into a whaling town was swift, it was not less disruptive and divisive for the community. The external ecological cost of industrial whaling threatened the cohesiveness of the community and the price for securing social stability paid was the destruction of the cetosphere, which was replaced by a less resilient and less diverse coastal anthroposphere.

The Decline of Coastal Fishing

Even before the *Michail* entered the bay for the first time in spring 1906, an ecological crisis was brewing in Ayukawa that threatened the socio-economic survival of the community. The elite of the town had been worried for some time about the community's economic dependence on proto-industrial fisheries and tourism. While fishing had always been the main income for the community, tourism had also been important for Ayukawa's economy. For centuries, pilgrims had stopped on their way to

the sacred island of Kinkazan in Ayukawa, providing the town with a modest secondary revenue. As we have seen in Chapter 1, when Ōtsuki Gentaku made his pilgrimage to Kinkazan in 1812, he also visited Ayukawa before reaching Kinkazan. However, in 1897, only one year after a tsunami had partly destroyed the town, a fire broke out in Kinkazan. Due to the rough sea, firefighters from Ayukawa could not cross to the island and had to watch how the flames destroyed most of the newly renovated temple buildings.³ This setback showed how fragile the local tourism industry was.

Even more concerning, however, was the development of proto-industrial fisheries. As elsewhere on the Oshika Peninsula, sardine and bonito fishing were originally developed in Ayukawa by Kii fishermen, some of which moved permanently to the village in the late seventeenth century, building also the local Kumano Shrine.⁴ More than half of the population of Ayukawa in 1905, 294 people to be precise, were engaged in fishing, while many were also working as farmers during the off-season on the few millet and vegetable fields around the town.⁵

Due to its proximity to the fish-rich waters around Kinkazan, Ayukawa had an advantage over the other fishing communities on the peninsula, which the Oshika communities harvested as commons (*iriai*). However, in 1875, the Meiji government abolished the *iriai* system and nationalised all Japanese coastal waters, and fishing licences were sold to individuals. Following this change, more people than ever before engaged in fishing in the Japanese waters, leading to a tripling of the fish catches but also to increased conflicts between the communities as well as forced a collapse of coastal fish stocks.⁶

After several attempts to reform the fishing system, the Meiji government eventually enacted in 1901 the Fisheries Law that standardised many practices. This law gave exclusive fishing rights to fishing unions (*gyogyō kumiai*). In order to continue fishing, each community had to reorganise itself into a union. The role of the union was to fairly distribute fishing rights inside the community, while also preventing disputes with outside fishermen, by controlling the access to coastal and offshore waters. The unions were controlled by the most influential and wealthy individuals of the communities, often the descendants of the net owner families from the Edo period. The leaders of the

³ Oshika chōshi hensan iinkai, *Oshika chōshi: Jōkan*, 152.

⁴ Oshika chōshi hensan iinkai, *Oshika chōshi: Jōkan*, 240.

⁵ Over the course of the Meiji period, many fields were transformed into rice paddies and a professionalisation between farmers and fishermen took place, see Oshika chōshi hensan iinkai, *Oshika chōshi: Jōkan*, 129–30, 202.

⁶ Makino, *Fisheries Management in Japan*, 24–5.

fishing unions had an interest in developing offshore fisheries, as they were often the only ones in the communities with the necessary capital to buy and operate mechanised fishing vessels. In this way, while the fishing unions greatly reduced disputes among fishing communities, they did little to conserve coastal marine resources, and even encouraged the expansion into the offshore regions, thus accelerating the decline of the coastal ecosystems.⁷

The former common fishing grounds around Kinkazan became part of Ayukawa exclusive fishing zone, excluding the other communities. Unsurprisingly, this decision was fiercely challenged by the other fishing villages. The conflict between Ayukawa and the other fishing communities was only solved in 1910 and probably accelerated the decline of the local fishing grounds as the unclear jurisdiction led to a ‘tragedy of the commons’ situation.⁸ Under the 1901 fishing law, the coastal ecosystem could not withstand the uncontrolled and increased fishing activities and sea bream, sardine, bonito, and tuna catches declined drastically in the Sea of Kinkazan.⁹ The regional newspaper *Kahoku Shimpō* lamented in 1906:

It is not difficult to imagine that the complete depletion of the coastal fish stocks is not far off. From now on, the only possible development of this place left is long-distance fishing ... Fisheries in our district is in decline, and the peninsula will probably fall more and more into misery with every day and month passing by.¹⁰

Offshore fishing was still largely undeveloped, as it relied on motorised fishing vessels. Of these, only three were in operation on the Oshika Peninsula, while all other boats were still coastal bound and continued to harvest the overfished coastal stocks.¹¹

The Arrival of the Whalers

At the beginning of the twentieth century, Ayukawa’s ecological and economic future was thus in serious jeopardy. Without additional outside capital, it seemed uncertain that the town could survive for long on the dwindling coastal fish stocks, while new investments were needed to repair the town after the devastating 1896 tsunami, the fire

⁷ Yamamoto, ‘Development of a Community-Based Fishery Management System in Japan’, 24–5; Ericson, ‘Nature’s Helper’, 203–4.

⁸ Oshika chōshi hensan iinkai, *Oshika chōshi: Chūkan*, 172.

⁹ Oshika chōshi hensan iinkai, *Oshika chōshi: Chūkan*, 171; Miyagi kenshi hensan iinkai, *Miyagi kenshi*, 10:126–31.

¹⁰ *Kahoku Shimpō*, ‘Oshika hantō no gyogyō’.

¹¹ *Kahoku Shimpō*, ‘Oshika hantō no gyogyō’.

in Kinkazan in 1897, and a crop failure in 1905.¹² The local elite, who monopolised most of the village's political capital through the political institutions, such as the mayor's office, the town's council, and the local fishing union, was heavily involved in attracting whaling companies from western Japan that were in search of a suitable place for a whaling station near the 'castle of sperm whales' at the Sea of Kinkazan.¹³ As discussed in the previous chapter, after the Russo-Japanese War, whaling companies were expanding their operations along the Japanese Coast, following whales on their migration on the Kuroshio Current.

In early 1906, the whaling company Tōyō Gyogyō announced its plans to buy around 734 m² of former rice fields near the border of the village. As the planned station was close to the river and the town's primary school, concerns regarding public health were raised by the locals. According to the *Kahoku Shimpō*, locals feared that 'when whales are caught, sardines will disappear and sea grass will wither'.¹⁴ A representative of the whaling company found these concerns completely unfounded: 'We have seen the reverse situation in the Korean area: the catching of whales attracts sardines.'¹⁵ Fearing for their health and livelihood, local fishermen continued to protest and began disrupting town and fishing union meetings. To resolve the situation, the mayor and other members of the elite presented themselves as mediators between the anxious population and the whaling company. After some negotiations, Tōyō Gyogyō agreed to pay the town's office a tax of 300 yen per year. This money was used to build a new primary school higher up the hill, away from the potentially dangerous station.¹⁶ The town elite propagated this compromise as a major breakthrough and construction for the whaling station began soon thereafter.

However, not everything was going smoothly. A major obstacle during the construction was the inadequate infrastructure in Ayukawa as the next sawmill was in Ishinomaki and timber had to be transported by boat to the village and then assembled by hand. This delayed the construction of the station till June 1906, when the whaling season was supposed to start. The whaling company therefore brought the factory ship *Michail* to Ayukawa,

¹² Kato, *Tsunami to kujira to pengin to*, 78.

¹³ Oshika chōshi hensan iinkai, *Oshika chōshi: Jōkan*, 154, 160; Oshika chōshi hensan iinkai, *Oshika chōshi: Chūkan*, 217.

¹⁴ Kahoku Shimpō from 18 June 1906, cited after: Kondō, *Nihon engan hōgei no kōbō*, 235–6.

¹⁵ Kahoku Shimpō from 18 June 1906, cited after: Kondō, *Nihon engan hōgei no kōbō*, 235–6.

¹⁶ Oshika chōshi hensan iinkai, *Oshika chōshi: Jōkan*, 160.

where the captured whales could also be flensed.¹⁷ In the end, the construction of the station was finished on 9 June, just when the catcher boat *Nikolaj* arrived. The subsequent flensing of the captured whales was, therefore, conducted at the station and not on board the *Michail*.

The industrial whaling stations had first been conceived as seasonal outposts of whalers from southern Norway coming to Finnmark. These stations were situated at the edge of a town and were often physically separated from the rest of the population through walls and brick buildings. The only way inside the station was through a gate which was only opened for the workers. While the locals could not enter the station without permission, the station released polluted air and water back into the village. Norwegian historian Einar Niemi has thus argued that these stations were often regarded as colonial outposts from the empire's core region.¹⁸

This first whaling station in Ayukawa consisted of only five buildings: a salting factory; a storage room; a whale meat packing house; a sleeping place for the workers; and a whale oil factory.¹⁹ Other parts of the local environment had also to be adjusted: the local river was partly diverted through a pipe to the new station to obtain water for storage, cooking, and operating the boiler.²⁰ Moreover, a new pier was constructed directly adjunct to the station and the mouth of the river, allowing harbour for whaling ships during storms, which had in the past been a major obstacle for making Ayukawa a whaling base.²¹ According to the *Kahoku Shimpō*, the new pier was equipped with an electrical winch, which could tow the fluke of whale carcass into the air. Workers standing on a small boat near the pier then began flensing the whale from top to bottom using flensing knives.²²

The new pier was one of the main points of dispute between the pro- and anti-whaling factions in the town. To get permission to build the pier, which was only around fifty metres away from the town's border and directly at the mouth of the river, the whaling company had to convince the town's council that its construction would not pose 'harm to the

¹⁷ We know from a picture taken by Andrews that the *Michail* would return to Ayukawa at least until 1910. After this, the fate of the world's first factory ship is unknown, see Katō and Uni, 'Roy Chapman Andrews no geirui chōsa shashin', 74–5.

¹⁸ Niemi, 'Modern Whaling on the Norwegian Arctic Coast', 76. See also Chapter 5.

¹⁹ Kondō, *Nihon engan hōgei no kōbō*, 231–2, 241.

²⁰ Ayukawa means 'sweet fish river'. Besides sweet fish, this small stream had been a source of various fresh water resources, such as sculpin, eel, minnow, and shrimp, see Kondō, *Nihon engan hōgei no kōbō*, 242–3.

²¹ Oshika chōshi hensen iinkai, *Oshika chōshi: Chūkan*, 214–15; Kahoku Shimpō, 'Kinkazan-oki no hōgei jigyō'.

²² Kahoku Shimpō, 'Kinkazan-oki no hōgei wo miru (Shita no 2)'; Uni, 'Senzenki nihon no engan hōgei no jittai kaimei to bunkateki eikyō', 101–2.

public waters'. The council argued that the pier would be beneficial for Ayukawa as other fishing boats could use the pier during storms as a safe anchor point and unilaterally passed the whaling company's request. This decision enraged many locals who feared that the flensing of the whales at the pier would destroy the local flora and fauna, such as small fish, shells, and seaweed on whose collection many of the fishermen relied.²³ Indeed, take the following description of Andrews of a similar pier in Kii-Ōshima:

Sometimes a kimona-clad, bare-footed girl slipped on the oily boards or treacherous, sliding, blubber cakes and sprawled into a great pool of blood, rising amid roars of laughter to shake herself, wipe the red blotches from her little snub nose and go on as merrily as before . . . The spirit of the place was infectious, and as I splashed about in the blood and grease, I talked and joked with the cutters in bad Japanese²⁴

Considering the negative connotation blood and pollution had in Shinto religious practices, Andrews's joyful and positive portrayal of the blood-covered pier is quite striking. It illustrates, however, that whale waste did lay around on the pier and presumably ended up in the ocean. Indeed, when the whalers began operating the provisional whaling station, rotting whale intestines, bones, grease, and whale blood were dumped into the ocean, leading to widespread pollution and the withering of seaweed and shellfish in the bay. The worst fears of the locals had become a reality.²⁵

Nevertheless, the commercial success of this first provisional whaling station encouraged the competitors of Tōyō Gyogyō to open their own stations in the surrounding bays, leading to similar environmental problems. Meanwhile, the communities themselves were overwhelmed by an influx of immigrants. In the first season of 1906, Ayukawa and the neighbouring villages had to accommodate over a hundred foreign whalers during the summer season.²⁶ Ayukawa's population grew from around 500 at the beginning of the century to 1,135 in 1915, with many people from the inland moving to the booming town.²⁷

As in many other industrial whaling places, however, the companies hired mainly skilled whalers from western Japan, while non-skilled locals and immigrants were relegated to mundane and poorly paid jobs in the periphery of the whaling industry. For example, in nearby Onagawa, one

²³ Oshika chōshi hensan iinkai, *Oshika chōshi: Jōkan*, 159–60.

²⁴ Andrews, *Whale Hunting with Gun and Camera*, 82–4.

²⁵ Oshika chōshi hensan iinkai, *Oshika chōshi: Jōkan*, 162.

²⁶ Kahoku Shimpō, 'Kinkazan hyakunin'.

²⁷ Oshika chōshi hensan iinkai, *Oshika chōshi: Jōkan*, 129–30.

of the first new jobs created for the locals was the collection of rotten whale meat on the seafront as it had become a serious health hazard.²⁸ Other new job opportunities included supplying the whalers with water and coal, the transportation of whale products, or entertainment services for the employees such as restaurants and inns (later even a red-light district).²⁹ Whaling was conducted between May and October and after the season ended, the whalers would move to other whaling places while the locals were laid off.

Initially, ‘the castle of sperm whales’ did hold up to its name and hundreds of whales were caught every year. The provisional whaling station in Ayukawa soon proved to be too small in size to cope with the amount of whale meat that had to be processed, which was not only unsatisfactory from a business standpoint but also further accelerated the problem of environmental pollution and thus increased the risk of social unrest.

After the merger of several whaling companies to the new industry juggernaut Tōyō Hogeï in 1909, plans for two improved and larger stations were made in Oginohama and Ayukawa. The remaining competitors followed suit and submitted similar plans to the Ministry of Agriculture and Commerce. When Andrews visited Ayukawa in May 1910, the new station had just been opened. The new Tōyō Hogeï station was now situated around two hundred metres outside the town and had a total of thirty-one buildings, making it much bigger than its predecessor. For a more efficient workflow, the buildings were not only bigger but also had duplicates, for example, two storage rooms, two worker barns, and so on. Whales were hauled to the station with steam-powered winches, either at the pier where the animal was lifted on the fluke into the air or at an almost horizontal concrete slipway that reached into the water. The slipway greatly reduced the amount of blood and grease that flowed back into the water, making the whole process of flensing cleaner.³⁰ A further addition was two rooms near the pier to cool the whale meat with ocean water. The whale oil production and the salting of whale meat were also further expanded, and a new whale cannery was also included.³¹ All said, the new generation of stations was much more efficient and allowed for a much faster and streamlined process of flensing and processing the

²⁸ Onagawa chōshi hensai iinkai, *Onagawa chōshi*, 400–1.

²⁹ Kato, *Tsunami to kujira to penguin to*, 81–3.

³⁰ Yamashita, *Hogeï II*, 185; Uni, ‘Senzenki nihon no engan hogeï no jittai kaimei to bunkateki eikyō’, 45–6.

³¹ Nōshōkō, ‘Jūyō gyogyō no hōkyō oyobu shūkakudaka hōkoku hogeï konkyochi secchi negai no ken’.

whale carcasses. This also contributed to fewer waste products going into the ocean.

The Problem with the Whale Meat

Soon the whalers in Ayukawa were faced with another challenge: the local demand for whale meat was dismal. The expansion of the industrial whaling operations after the Russo-Japanese War to the Sanriku Coast was facilitated by the search for whale meat, while whale oil was considered a by-product. In the early days of Japanese industrial whaling, the process to win whale oil from blubber was crude and highly inefficient, despite the expanded possibilities to use whale oil not only to produce illumination and insecticide, as during the Edo period, but also to transform it through industrial processes into wax, soap, perfume, and machine oil.³² The Norwegian Embassy in Japan, for example, noted in 1907: "The principal object of [the whaling] companies is to procure whale meat, which is considered a great luxury by the Japanese and realises high prices during the winter months. Owing to the primitive methods of treating the blubber, large quantities of oil are lost and what is produced is far below the quality of the home article."³³

More positive was Andrews's assessment, who praised in an article in the *Metropolitan* in 1911 the Japanese for their use of whale meat:

Few people realize how important the capture of whales is to the Japanese because of the wonderful food supply which these animals furnish. When one stops to think that a single large blue whale will yield over forty tons (eighty thousand pounds) of red-meat, and that every ounce is used for food, it can perhaps be understood why the Japanese to-day have the largest whaling company in the world.³⁴

According to Andrews, the Japanese had not only studied the European whaling methods but had tweaked them to fit their own needs, thus surpassing the Western whaling industry: 'until to-day there is no nation in the world which has progressed so far in this great industry as our friends in the Island Empire across the wide Pacific.'³⁵ In 1916, Andrews highlighted the advantages of whale meat to the European and American readers, trying to establish it as a new commodity: "It is most unfortunate that prejudice prevents whale meat from being eaten in Europe and America. It could not, of course be sent fresh to the large cities, but canned in the Japanese fashion it is vastly superior to much of the beef

³² Akashi, *Honpō no noruē-shiki hōgeishi*, 8–9, 56–65.

³³ Utenriksdepartementet, '32/07 Japan (Tokio) 1907', 7.

³⁴ Cited after: Japan Times, 'Japanese Whales'. ³⁵ Japan Times, 'Japanese Whales'.

and other tinned foods now on sale in our markets.”³⁶ Although Andrews’s attempt to introduce whale meat to the Western world was not successful,³⁷ his comments helped to cement the image of Japan as a ‘whale-eating culture’ for a long time.³⁸ Historical research in recent years has painted a more nuanced picture, however. While whale meat was the most important commodity for the industrial whaling companies, its consumption before the Second World War had mostly been concentrated in the traditional whaling regions in western Japan and it was not part of the cuisine in most other regions.³⁹ In the Edo period, most inland communities probably never ate whale meat and it is only from the latter half of the nineteenth century onwards that we have reports of whale meat being sold at markets in Osaka, where it was restricted to the merchant and urban samurai classes.⁴⁰

Therefore, the industrial whaling companies had first to create a market for their new commodity of canned whale meat. In their first sales report released in 1906 the Tokyo Branch of Tōyō Gyogyō noted that ‘from Tokyo to the Northeast it is believed that whale meat is fatty and smelly’.⁴¹ To counter these prejudices, the company organised test samplings of whale meat in a park in Tokyo which was, according to their report, a huge success. They also started a large campaign of advertisements in over ten newspapers located in eastern Japan. Simmered whale meat in soy sauce proved especially popular and thousands of cans were sent all over the country, but the container proved to be faulty, leading to the spoilage of the product before it reached its destination. With this, many would-be consumers lost their appetite for whale meat.

As this publicity nightmare demonstrates, the conservation of whale meat turned out to be the biggest problem for the whaling companies. Traditionally, mainly white meat (blubber and connective tissues) had been eaten in western Japan, while red meat (muscle) had become popular only recently. However, the latter was also much harder to conserve during the summer months. Early attempts at salting or boiling red meat were imperfect and accounted only for a small fraction of the company’s revenue.

³⁶ Andrews, *Whale Hunting with Gun and Camera*, 89.

³⁷ For more on the history of whale meat in America, see Shoemaker, ‘Whale Meat in American History’.

³⁸ See for example: Komatsu, *Yoku wakaru kujira ronsō*; Yoshioka, *Hakujin ha iruka wo tabete mo OK de Nihonjin ha NG no hontō no riyū*; Akamine, *Kujira wo ikiru*.

³⁹ Watanabe, *Japan’s Whaling*; Uni, ‘Kinsei kindai no geiniku ryōri no shiyō bui to kindai Nihon ni okeru geinikushoku no fukyū katei’.

⁴⁰ Watanabe, *Japan’s Whaling*, 96.

⁴¹ From ‘Tōyō Gyogyō Tōkyō shucchōsho dai 1-ki jigyō hōkoku’, cited after, Uni, ‘Senzenki nihon no engan hōgei no jittai kaimei to bunkateki eikyō’, 116–17.

Economic historian Pieter de Ganon has argued that the Meiji government heavily promoted the consumption of beef and other forms of meat, something rarely eaten during the Edo period, in order to ‘nurturing a strong and healthy populace that could defend Japan against Western colonial power’.⁴² During the first Sino-Japanese War (1894–1895), officials identified whale meat as a cheap alternative to beef.⁴³ This allowed the whaling companies to open up sales channels directly to public institutions, such as prisons, schools, and the military to sell them fresh red whale meat. However, due to delays at the Chōshi and Ayukawa plants, the meat deteriorated, and many of the contracts were cancelled.⁴⁴ Unsurprisingly, the trouble of transporting whale meat during the summer months had a profound effect on the market prices. In the 1910 winter season, Tōyō Hogeï caught 324 whales, which could be sold in western Japan for as much as 4,000 yen each. This price fell to 2,200 yen by early spring, however, and by the summer, when the company caught 444 whales on the Sanriku Coast, it fell to about 600 yen per animal.⁴⁵

Despite an abundance of whales in the Sea of Kinkazan, its economic value was significantly diminished, which was compensated for by catching even more whales. As this large amount of whale carcasses could not be processed fast enough in the hot summer temperatures, even more whale waste was thrown into the ocean, further destroying local wildlife and threatening the near-coastal fishing industry. After the first few seasons of industrial whaling, Ayukawa was on the verge of an ecological disaster, and it became urgent to find a more sustainable solution.

Turning Whales into Fertiliser

In 1907, a year after the beginning of industrial whaling at the Sanriku Coast, a local entrepreneur from Ishinomaki found a new way to deal with the unattended and harmful whale waste products: he turned them into fertiliser. For centuries, bonito fertiliser production had been one of the main pillars of the Oshika fisheries proto-industry. With the bonito and sardine coastal stocks declining in the late nineteenth century, however, it had seemed that marine fertiliser production would soon have to be given up. The sudden influx of whale waste provided the struggling fertiliser factories with new and cheap raw material and soon fertiliser producers began buying whale waste directly from the whaling station. However, the emergence of whale fertiliser brought the local elite even closer to the

⁴² de Ganon, ‘The Animal Economy’, 134. ⁴³ Watanabe, *Japan’s Whaling*, 98.

⁴⁴ Uni, ‘Senzenki nihon no engan hogeï no jittai kaimei to bunkateki eikyō’, 118–19.

⁴⁵ Japan Times, ‘Whaling Lucrative Business’.

whaling companies and instead of creating a diversified economy like they had promised, they invested mostly in whale fertiliser plants.⁴⁶

When the first provisional whaling station in Ayukawa was closed in 1909 in favour of the larger Tōyō Hogeï station, the local entrepreneur Okada Gentarō bought the old station and turned it into one of the first whale fertiliser factories. Following this example, Nishimura Sōshirō built a second factory just outside the new Tōyō Hogeï station and other members of the elite soon followed with new fertiliser plants being established all over the Oshika Peninsula. Even the mayor of Ayukawa, Izumi Kōtarō, who had been instrumental in mediating a deal between the anti-whaling faction and the whalers, resigned in 1907 and established his own fertiliser plant in the following year.⁴⁷ Records show that these fertiliser plants not only processed whale fertiliser but also began buying fish scraps from other fishing places, thus revitalising the fish fertiliser industry that had been given up since the disappearance of the sardines a few years earlier. For example, the Miyamoto fertiliser plant opened in Watanoha in 1908 processed sharks, bonito, and tuna from Miyagi, Iwate, and Aomori Prefectures as well as whales. Additionally, herring was imported from Hokkaido to turn it into fertiliser.⁴⁸

These fertiliser plants proved to be an effective way of mitigating the coastal pollution problem. When submitting their requests to build the second generation of whaling stations in 1909 and 1910, the whaling companies had not only improved the processing technique to reduce waste but also promised to uphold new regulations: “All whale meat waste from the flensing has to be brought to a fertiliser plant. Other waste products like whale oil that swims on the water are two hours after the end of the production let out into the open sea away from the station.”⁴⁹

These new regulations ensured that the fertiliser plants would not run out of raw material as long as whaling continued. Because of the low market prices during the summer, it was often more profitable to sell even high-quality meat to the fertiliser plants. In the eyes of the bureaucracy, this development was, however, not desirable. In 1909, the Miyagi Fisheries Agency complained:

⁴⁶ Oshika chōshi hensan iinkai, *Oshika chōshi: Jōkan*, 162–3, 210.

⁴⁷ Uni, ‘Roy Chapman Andrews no geirui chōsa to Tōyō Hogeï Ayukawa jigyōjō’; Oshika chōshi hensan iinkai, *Oshika chōshi: Jōkan*, 160–3. Among the owners of the fertiliser plants were also descendants of the former district headmen families of Naganuma and Hiratsuka, see Nōshōkō, ‘Nōshōkō – Hiryō’.

⁴⁸ Nōshōkō, ‘Nōshōkō – Hiryō’.

⁴⁹ Nōshōkō, ‘Jūyō gyogyō no hōkyō oyobu shūkakudaka hōkoku hogeï konkyochi secchi negai no ken’.

The amount of whale meat eaten in our prefecture [Miyagi] is at the moment negligible, and only one or two of the whaling companies are producing a small number of whale meat cans. Instead, most of the meat is used in Watanoha and Ishinomaki as raw material for the production of fertiliser which is then sold. It is regrettable that whale meat is misused for the production [of fertiliser]. Therefore, it is necessary to encourage producers in Watanoha and Ishinomaki and other areas to make more canned whale meat.⁵⁰

As discussed, officials saw whale meat consumption as a critical component in building a healthy populace for the empire and therefore regarded the production of whale fertiliser as wasteful. This problem affected marine resources in general: over the course of the Meiji period, the population on the Japanese islands had grown from thirty to fifty million and the consumption of fish, such as sardines and herrings had increased manifold. At the same time, however, the increased population also led to a higher demand in agricultural products and thus of marine fertiliser made from these fish.⁵¹ In the case of Hokkaido fisheries, new fishing technologies were developed that allowed a short-term increase of herring extraction at the cost of the long-term sustainability of the underlying stock, marking the decline of the herring fertiliser business.⁵²

To ease the dependence on fish fertiliser, the Japanese government saw the production and import of commercial fertiliser as a national priority. Soybean cakes and phosphate rocks were imported from Qing Manchuria (later the Japanese puppet-state of Manchukuo) and European nations, respectively, and it was aimed to expand the Japanese empire to the Pacific islands to secure nutrient-rich guano.⁵³ By the 1910s, most major European powers had switched from guano and animal fertiliser to mined ammonium nitrate and only 2 per cent of their commercial fertiliser was still of organic origin. The Japanese empire, on the other hand, still relied on organic fertiliser and this peculiarity led Toshihiro Higuchi to call Japan an 'organic empire'.⁵⁴

⁵⁰ Miyagi-ken suisan shikenjō, 'Miyagi-ken suisan shikenjō jigyō hōkoku'.

⁵¹ The Journal of the Fisheries Society of Japan, 'Fisheries and Our Farmers'. See also Cushman, *Guano and the Opening of the Pacific World*, 211.

⁵² Howell, *Capitalism from Within*, 106–8; Higuchi, 'Japan as an Organic Empire', 145–6. This phenomenon has also been coined 'the fisherman's problem', see McEvoy, *The Fisherman's Problem*.

⁵³ Kreitman, 'Feathers, Fertilizer and States of Nature'.

⁵⁴ Higuchi, 'Japan as an Organic Empire'.

The Japanese dependence on imported fertiliser was perceived by the military as a serious problem.⁵⁵ In 1911, the Japanese economy produced fertiliser with a net value of forty million yen, but they still had to import fertiliser worth fifty-two million yen, ten per cent of the total imports.⁵⁶ According to my estimations, around 12,000 metric tons of whale fertiliser could have been produced in 1911.⁵⁷ This is more than the 8,000 metric tons of fish fertiliser that was imported in the same year, but a small number compared to the around 500,000 metric tons of herring fertiliser produced in Hokkaido in 1911.⁵⁸ Nevertheless, it was a huge boost to the local economy and over fifty private entrepreneurs on the Oshika Peninsula and around Ishinomaki started their own, mostly small-scale fertiliser businesses. High-quality fertiliser was exported as far as Fukushima, Shizuoka, and Hyōgo Prefectures, while lower-quality fertiliser remained in the region. The low-quality whale broth was only sold around Ishinomaki.⁵⁹

Even the invention of cold storage units, which partly solved the problem of rotting whale meat, did not hinder the success of the new Oshika fertiliser industry. Cold storage units were first used for transporting whale meat in Shimonoseki and Osaka in 1911 and ice storage tests were carried out in Ayukawa and Same-ura for the first time in 1913. Ice transportation did not work the whole year round, however. Steamships with ice storage could be used in the colder spring and autumn months to transport fresh whale meat to the markets in Tokyo and Osaka, but during the summer months, the high temperatures did not

⁵⁵ Kreitman, 'Feathers, Fertilizer and States of Nature', 205–6.

⁵⁶ Utenriksdepartementet, '32/12 Japan 1912'. Over fifty per cent of the imports was soybean cake from Manchuria, followed by thirty per cent sulphate of ammonia and nitrate of soda. The quantity of imported fish fertiliser decreased every year and was only one per cent in 1911, while the import prices increased. One reason for the decrease was that since 1910, the dried fish from Korea was no longer counted as 'imported' but instead as 'domestic production'. Nevertheless, the 350 metric tons of dried fish from Korea was a fraction of the yearly imported 180,000 metric tons of soybean cake, see Utenriksdepartementet, '32/10 Japan 1910'.

⁵⁷ According to Akashi, around one-third of the weight of a whale could be transformed into fertiliser, see Akashi, *Honpō no noru-shiki hogeishi*, 60–1. In 1911, 1,919 whales were caught around Japan and I assume, based on the records of other years, that half of these were taken in the summer season and thus made into fertiliser. Using the average weight of each whale species, I calculate that around 12,000 metric tons of whale fertiliser could have been produced, see Kasahara, *Nihon kinkai no hogeigyō to sono shigen*, 1950, 9.

⁵⁸ Utenriksdepartementet, '32/10 Japan 1910'; Howell, *Capitalism from Within*, 108.

⁵⁹ Ishinomaki shishi hensan iinkai, *Ishinomaki no rekishi: Sangyō Kōtsūhen*, 5:288–9. As discussed in Chapter 1, the chemical composition of whale fertiliser differed from fish fertiliser, as it had a higher phosphorus content. We can, therefore, assume that whale fertiliser was used for different agricultural purposes than herring fertiliser, for example. Unfortunately, there are no historical records that I am aware of that show the usage of whale fertiliser in the Meiji period.

allow for the usage of this method and the whaling companies continued to sell the meat to the fertiliser producers.⁶⁰ Over time, local consumption of whale meat increased, and ice storage and whale oil production technologies improved, bringing greater profit to the whaling companies from products other than whale fertiliser.

Reaching into the Cetosphere

Over the course of only four years, Ayukawa became Japan's first modern whaling town. This newfound wealth and fame were solely based on abundance of the whales foraging the Sea of Kinkazan during the summer season. Industrial whaling did indeed save the local fisheries on the Sanriku Coast, at least for a time. The *Kahoku Shimpō* had noted in 1906 that the only way to escape the collapse of the coastal fish stocks was to invest in motorised fishing vessels that could search for new fish stocks farther offshore. The recently arrived motorised whaling vessel from the whaling companies brought this necessary technological innovation to the region.⁶¹ Declining sardine stocks could be compensated for by the production of whale and imported fish fertiliser and as pointed out by the pro-whaling faction, industrial whaling helped to industrialise local fishing. With motorised boats and more efficient harvesting methods, fishing became less coastal bound and new fish stocks closer to the perturbed region became available.

Motorised fishing and whaling ships expanded the anthropogenic influence into the offshore region, changing the volatile ecological balance between humans and cetaceans. For centuries, humans had benefited from whales bringing fish to the shore, while making passive use of stranded or injured whales. Now, they ventured into the offshore regions of the Sea of Kinkazan to hunt fish and whales directly. In the first season, the whalers had mainly been interested in large whale species they knew from the Korean Sea and western Japan, like blue, fin, and sperm whales. While sperm whales remained important until the 1940s, fin whales were hunted excessively in the first few years, which led to a partial collapse of the stock as early as in the late 1910s.⁶² To compensate, the whalers started hunting a species that had so far been mostly unknown in western Japan: sei whales.⁶³

⁶⁰ Uni, 'Kinsei kindai no geiniku ryōri no shiyō bui to kindai Nihon ni okeru geinikushoku no fukyū katei', 19.

⁶¹ *Kahoku Shimpō*, 'Oshika hantō no gyogyō'.

⁶² The catch numbers of fin whales declined on the Sanriku Coast from 394 in 1911 to 49 in 1919, see Kasahara, *Nihon kinkai no hogeigyō to sono shigen*, 1950, 18–19.

⁶³ Of the 5,588 whales processed at the *Tōyō Hoge* Ayukawa station between 1910 and 1944, 40 per cent were sei whales, 47 per cent were sperm whales, and only 10 per cent

During the Edo period, one major reason fishermen protested against western Japanese whaling was that they believed that sei whales, locally known as ‘sardine whales’ or ‘bonito whales’, were responsible for driving sardines and bonito towards the coast. That sei whales were foraging for sardines in the Sea of Kinkazan is also confirmed by Andrews. He reports that in early spring mostly fin and blue whales could be found in the Sea of Kinkazan, but in June and July, sei and sperm whales arrived in great numbers. These two species, therefore, were not only the backbone of the cetosphere in the Sea of Kinkazan but also became the species Japanese summer whaling relied on the most.⁶⁴ On several occasions, Andrews watched on the whaling ship *Hogeimaru No. 5* how sei whales were hunting sardines, with sea birds hovering about the whales, looking for easy pickings.⁶⁵ However, when examining the carcass of four sei whales, Andrews found only shrimp in their stomachs.⁶⁶

We would expect that the Ayukawa fishermen were like their ancestors concerned with the ecological and economic consequences of hunting sei whales. However, the few contemporary sources we have, do not reveal a particular concern for the species the whalers targeted. The reason for this is simple: sardines and bonito fishing no longer played a significant economic role for the town. In 1862, bonito fishing and *katsuobushi* production had contributed to 38 per cent of the town’s income from coastal fishing, while sardine fertiliser contributed 4 per cent.⁶⁷ In 1911, coastal bonito fishing brought a profit of only 1,460 yen, which was 2 per cent of all near-coastal fishing in Ayukawa. At the same time, however, the new offshore bonito fishing had grown to 15,200 yen in just a few years.⁶⁸ Bonito was now hunted up to sixty kilometres off Kinkazan, a distance the older, non-motorised boats could not have reached.⁶⁹ The transfer from coastal to offshore bonito fishing happened around the same time industrial whaling was introduced. I, therefore, suggest that for offshore fishing, sei whales were no longer needed to bring fish closer to the shore, meaning the locals were only concerned with the pollution whaling caused and not with the role sei whales played in the local ecosystem.

were fin whales, see Uni, ‘Roy Chapman Andrews no geirui chōsa to Tōyō Hogeii Ayukawa jigyōjō’, 63.

⁶⁴ Andrews, *Whale Hunting with Gun and Camera*, 91.

⁶⁵ Andrews, *Whale Hunting with Gun and Camera*, 110, 121.

⁶⁶ Andrews, *Whale Hunting with Gun and Camera*, 127–8.

⁶⁷ Oshika chōshi hensan iinkai, *Oshika chōshi: Chūkan*, 171.

⁶⁸ Offshore bonito fishing was divided into Japanese-style boats and Western-style motorised boats. In 1911, twelve offshore Japanese-style boats with a total crew of 147 fishermen brought in bonito for 5,120 yen, while two Western-style boats with 38 crew members caught bonito for 10,080 yen, see Nōshōkō, ‘Meiji 44 nen – Seisan chōsasho – Naganen hozon – Oshika-gun’, 44.

⁶⁹ Ishinomaki shishi hensan iinkai, *Ishinomaki no rekishi: Sangyō Kōsūhen*, 5:291.

But how did the whales themselves react towards the sudden appearance of the humans? Again, our sources are quite limited. Andrews reports that during one of their sei whale hunts, an animal injured by a harpoon suddenly swung around and took up speed coming directly towards the whaling ship:

The whale was coming at tremendous speed, half buried in white foam, lashing right and left with his enormous flukes. In an instant he hit us. We had half swung about and he struck a glancing blow directly amidships, keeling the little vessel far over and making her tremble as though she had gone on the rocks; then bumped along the side, running his nose squarely into the propeller. The whirling blades tore great strips of blubber from his snout and jaws and he backed off astern.⁷⁰

If the whale had hit squarely, Andrews surmised, the ship would have sunk. As Andrews writes later in his book, almost every whaler had stories of injured whales attacking whaling vessels. However, Andrews was convinced that such ramming was not intentional by the whale but had been the result of his death flurry and purely accidental. Only sperm whales, so Andrews believed, were able to deliberately attack a whaling ship.⁷¹ To this day it remains unclear if baleen whales were intentionally attacking whaling ships. However, the many stories of whales protecting their calves and becoming aggressive towards humans indicate that this was at least sometimes the case.⁷²

Conclusion

Seen from a short-term economic standpoint, the introduction of industrial whaling was a blessing for Ayukawa and the town's population tripled in only a few years with new businesses like whale fertiliser production thriving. With over fifty local entrepreneurs starting their own businesses, the demand for unskilled workers was great and as records show, up to 40 per cent of the employees were women.⁷³ The fertiliser producers bought not only whale waste, but also fish scraps from the whole of the Sanriku Coast and even herring from Hokkaido, thus revitalising the old fertiliser proto-industry. This time, however, most of the fertiliser was not produced for export but for farmers living in northern Japan, making the industry more locally oriented.

A closer inspection reveals that the benefits of whaling were unevenly distributed, however. The whaling companies were clearly benefitting the most and by establishing secondary industries, such as fertiliser and

⁷⁰ Andrews, *Whale Hunting with Gun and Camera*, 114.

⁷¹ Andrews, *Whale Hunting with Gun and Camera*, 115–16, 175–6.

⁷² Okumura, *Kujira no haha*. ⁷³ Anonymous, 'Hiryō ninpuchō'.

canned whale meat production, the local elite were using their political and economic capital to become junior partners of the large companies. On the losing side were not only the whales but also the less well-off fishermen, who had been against whaling from the start. Although they had predicted that the whaling operation would cause pollution and endanger their fishing operation, the decline of near-coastal fisheries due to overfishing had started much earlier, forcing a reorientation towards offshore fishing. Locals without the necessary capital found new ephemeral jobs such as working in the fertiliser plants or cleaning the beaches of whale carcasses.

By becoming a whaling town Ayukawa also lost many traditional side activities and seasonal work like collecting firewood or shells as well as cultivating fields. The rampant growth of the town's population and industry left many of the surrounding hills barren as former fields were either swallowed by the town or transformed into fertiliser plants. The remaining fields were consolidated and tilled by full-time farmers, a job category that had not existed before. The sharp increase in shipping activities also led to the construction of a stone harbour to protect against tsunamis and storms, resulting in former abalone and seaweed gathering places being lost.⁷⁴

Given the precarious situation for the subaltern class, it may be surprising that the local anti-whaling faction disappeared completely from the contemporary sources after 1906. Why there was no larger resistance against these social and ecological changes? Initially, the opposing fishermen were overruled by the small but firmly established local elite. As these families held all the capital in the town, most of the poorer fishermen were either working for them or had to pay back debts, making it difficult to oppose them. The local fishermen could not expect help from other communities as Ayukawa was in dispute over the fishing rights of the Sea of Kinkazan with its neighbouring villages. Moreover, the coastal pollution was mostly limited to the respective cove where the whaling station was situated and the limited exchange between the villages hindered the establishment of a region-wide anti-whaling movement. Also, with the decline of the coastal sardine and bonito fisheries, whales lost their importance to the fishermen as they were no longer needed to find and bring these fish species to the shore.

Large-scale immigration was, however, the main reason the opposition disappeared so quickly from the sources. In the first years after the introduction of industrial whaling, hundreds of immigrants moved from the surrounding villages, districts, and prefectures to Ayukawa,

⁷⁴ Oshika chōshi hensan iinkai, *Oshika chōshi: Jōkan*, 172–3.

Oginohama, and Onagawa in search of work in the periphery of the whaling industry, changing the social structure of the towns. Although these people were also living on the fringes of society, unlike the locals, they felt no moral obligation to preserve the local environment. On the contrary, they had migrated to the Oshika Peninsula to be part of the change. Many were unable to find a job in the whaling industry itself, but they could find work in secondary industries like construction, public services, or in fertiliser factories. This migration also explains why the anti-whaling faction is no longer present in the collective memory of the town today as most of the ancestors of the current population moved to Ayukawa after 1906. Therefore, I argue that the reason the opposition against whaling was not able to organise itself in Ayukawa was simply that the local fishermen became a small minority in their own town in just a few years, while everyone else profited from their loss.