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Volume Title: In Pursuit of Leviathan: Technology, Institutions, Productivity, and Profits in American Whaling, 1816-1906

Volume Author/Editor: Lance E. Davis, Robert E. Gallman, and Karin Gleiter

Volume Publisher: University of Chicago Press

Volume ISBN: 0-226-13789-9

Volume URL: <http://www.nber.org/books/davi97-1>

Publication Date: January 1997

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Chapter Author: Lance E. Davis, Robert E. Gallman, Karin Gleiter

Chapter URL: <http://www.nber.org/chapters/c8288>

Chapter pages in book: (p. 498 - 512)

13 Modern Whaling



The last three decades of the nineteenth century were a period of decline for American whaling.¹ The market for oil was weak because of the advance of petroleum production, and only the demand for bone kept right whalers and bowhead whalers afloat. It was against this background that the Norwegian whaling industry emerged and grew to formidable size. Oddly enough, the Norwegians were not after bone—the whales they hunted, although baleens, yielded bone of very poor quality. They were after oil, and oil of an inferior sort. How was it that the Norwegians could prosper, selling inferior oil in a declining market?

The answer is that their costs were exceedingly low. The whales they hunted existed in profusion along the northern (Finnmark) coast of Norway and could be caught with a relatively modest commitment of man and vessel time. The area from which the hunters came was poor. Labor was cheap; it also happened to be experienced in maritime pursuits, particularly in the sealing industry and in hunting small whales—the bottlenose whale and the white whale (narwhal). These activities provided men who could readily transfer into whaling; sealing provided a style of vessel that could be adapted to the needs of the industry.²

Once certain technical problems were solved, the Norwegians came to dom-

1. This chapter is based chiefly on the following books: Bonner 1989; Burton 1983; Crisp 1954; Ellis 1991; Jackson 1978; Sanderson 1956; Tønnessen and Johnsen 1982.

2. Jackson 1978, 158; Bonner 1989, 158. Circa 1868 an average Norwegian worker earned the equivalent of about US \$137 a year. American workers earned roughly the following:

Farm laborer	\$200 (12 months, with board)
Nonfarm employee	\$499 (when employed)
Common laborer	\$465 (300 days)
Mining worker	\$351–501 (annual)
Able-bodied seaman	\$216–300 (12 months, with board)
Domestic	\$104 (12 months, probably with board)
Cotton manufacturing hand	\$298 (full-time equivalent)

inate whaling. Their fleet became the largest in the world, and they provided much of the human capital and many of the vessels employed by other whaling countries (England, Germany, and, for a time, even Japan). The nationals of these countries participated in the industry by investing in whalers, processing whale products, and developing a marketing apparatus. Their participation grew more important as the twentieth century wore on, but the captains, the seamen, and the vessels of all countries remained typically Norwegian. In these respects the Norwegian industry differed importantly from the earlier American industry. As chapters 5, 8, 9, and 10 show, American whaling fleets were financed by local capital, and their products were processed and marketed principally by Americans. After the 1830s, however, the crewmen before the mast were increasingly drawn from abroad. These circumstances were certainly not characteristic of Norwegian operations.³

In one respect the two industries *were* alike—both were situated in small towns, some distance from large, mercantile ports, and whaling dominated the towns' economies. When the industry went into decline, few towns developed a second, important industrial life. New Bedford's successful shift into cotton textiles and commercial fishing was unusual.⁴

The technical innovations that revolutionized whaling appeared over a period of more than seventy years. They included inventions having to do with the uses of whale products, as well as those bearing expressly on the hunting and processing of whales. The first important innovations changed hunting techniques.

The whales thronging the Finnmark coast were rorquals: blues, seis, and fins. These creatures are remarkable for their great size, speed, and power. The small whaleboats of the conventional industry could rarely approach them; to attack them with conventional implements from a whaleboat was a very dangerous, even a foolhardy, business.⁵ A harpooned blue or sei or fin could drag a boat fast enough to swamp it; a boat that wasn't swamped could be pulled so far so fast that the mother vessel would be unable to find it. The chance of killing one of these whales with a hand lance or a bomb lance was infinitesimally small (Crisp 1954, 99–100).

Woolen manufacturing hand
Iron and steelworker

\$335 (full-time equivalent)
\$524 (full-time equivalent)

(Tønnessen and Johnsen 1982, 12; Lebergott 1964, 528, 529, 530, 539, 541–45).

3. Hohman (1935) has a good treatment of the contrasts between the American and Norwegian fleets.

4. Like American New Bedford, Norwegian Sandefjord is reminded of its whaling days by a striking statue and a whaling museum. Sandefjord was a major center of the modern industry, but the Sandefjord statue commemorates old-style whaling, presumably because a figure wielding a handheld harpoon from the bow of a small boat is more dramatic than a gunner in a steam-powered catcher.

5. "[O]ne entry of a journal maintained throughout the 1822 whaling voyage of a London whaler, the *Leviathan*, noted that several rorquals had been sighted, 'but they are too formidable to attack with safety, and the chance of killing them when struck is very slight'" (Sanger 1991b, 129).

There is a report of three boats from a conventional Scottish steam vessel that managed to put three harpoons and many bomb lances into a large blue whale. The whale did not slow down, but the men managed to get the lines to the steamer. The whale then towed all three boats plus the 340-ton steamer for fourteen hours. When the steamer tried to stop the whale by reversing engines, the lines broke and the whale escaped.⁶

In view of this story, it should come as no surprise that the innovation that launched the modern fishery had to do with the initial assault on the whale. It was a cannon that threw a large, explosive harpoon a considerable distance with substantial power. The new weapon was intended to kill the whale, or at least to wound it very seriously, and to hook it securely.

The idea of a harpoon gun was not new. The Greener gun dates to the eighteenth century (see chapter 7), but it was never widely adopted. The whales hunted at that time—rights and bowheads—were easily frightened; they scattered when the Greener was fired. In part because of the way the harpoon was attached to the line, in part because the gunner could not allow for the movements of the ocean, as a harpooner casting a handheld harpoon could, the gun was very inaccurate. Greeners also had a habit of exploding and for that reason, if for no other, were unpopular among whalers.⁷

The new cannon had a much longer range than the Greener, and threw a larger harpoon carrying a powerful explosive charge.⁸ With it a gunner could kill a large rorqual with one well-placed shot; even a harpoon that missed the most vulnerable part of a whale might leave it unable to flee.

Cannons alone did not solve the problems of the rorqual fishery. An American whaleman, Thomas Welcome Roys—the captain who opened the Western Arctic hunting grounds—perfected a cannon fully capable of killing the big rorquals, and did kill many, but lost most of them. They sank quickly, and Roys was unable to recover them.⁹

The inventor who completed the first important innovative cycle was a Norwegian, Svend Foyn. Foyn had developed a workable cannon and harpoon by the mid-1860s, and successfully employed them in whaling in 1868. His innovation had several important features. First, the cannon was not mounted in a whaleboat, as the Greener had been, and as Roys's cannon was. Foyn placed his in the bow of a small steam schooner. The ideal Foyn vessel was fast, powerful, maneuverable, and virtually unsinkable. By the end of the century Norwegian

6. Crisp 1954, 107–8; Burton (1983, 152) tells a slightly different story of the encounter. See Sanderson 1956, 311, for an equally striking example.

7. Sanderson 1956, 296. "The gun never found any favour with the whalers, and in practice it appears to have been little better than a hazardous expense" (Crisp 1954, 103).

8. According to Burton (1983, 156) modern cannon can send an explosive harpoon as much as ninety meters, although they are rarely fired at whales that distant.

9. Roys's cannon was fired from a whaleboat. On the first voyage in which it was used, "they shot a total of fifty-two whales, none of which was saved" (Bonner 1980, 226–27). Roys gave up his left hand to his work: it was blown off in an accident while he was developing a rocket harpoon (Bockstoeck 1980, 55).

whalers exhibited all of these characteristics, and the whaling industry had been revolutionized. Sanderson (1956, 299–300, and see 287–92) describes the steamers colorfully.

These little vessels looked rather like the early steam trawlers and drifters, but had flared bows, a lot of sheer, a very low freeboard, and rounded bottoms to facilitate rapid turns. They rolled, pitched, and performed other quite inexplicable gyrations in a manner that cannot possibly be described. The only thing they almost never did was sink, though they often technically foundered (which means simply going below the surface) and several of them turned turtle. In both cases, however, they almost always bobbed up again, and right side up to boot!

Jackson (1978, 158–59) adds: “[S]he was ‘all engine’. Everything . . . was sacrificed to strength and speed so that she could stalk whales at seven knots and then tow them back to the shore base.”¹⁰

There was still the danger that, if the whale was not killed at the first stroke, it would break the harpoon cable and escape. Foyn dealt with this problem in two ways. He made the cable exceptionally heavy—five inches thick—and he devised a system for carrying the cable to the mast, and then down into the hold to a series of springs.¹¹ When the whale swam off, it was played like a fish on a line; the mast and the hold springs (the *accumulator*) acted in the place of the fishing pole, allowing enough give that the cable would not break.

Finally, the vessel was outfitted with a steam winch, powerful enough to keep the whale from sinking, or to bring it up if it did.¹² In the 1880s a system was devised to fill the dead whale with compressed air, so that it could not sink. The body could then be marked with a waif (a floating marker), and the catcher could go on with its catching.

Such a whaler required very little manpower. The captain sailed the vessel up to the point of contact with the whale. The engineer then came up from below to handle the wheel, and the captain raced across a catwalk (in the later designs) from the wheelhouse to the gun, which was set on a swivel in the bow. It was the captain who manned the gun and shot the whale. The engineer maneuvered the vessel, backing off after the harpoon was set, and then, if the whale was still alive, accommodating the movements of the vessel to the behavior of the whale. There was no longer a need for the oarsmen who had made up the bulk of a New Bedford crew.

Since the vessel was rarely out for long and since the oil was not tried out aboard ship, few technicians were required. The crew could be as small as

10. Foyn's first vessel was only 86 tons, according to Jackson (1978, 158); Crisp (1954, 105) says the early catchers ran less than 40 tons. By the time the industry had transferred to the Antarctic, catchers were much larger—as large as 280 tons.

11. The rigging was more complicated than this account suggests; a winch figured in it. See the drawing in Burton 1983, 155.

12. Bonner 1980, 228. Foyn derived his ideas on the winch and the accumulator at least in part from Roys and Roys's partner, Gustavus A. Liliendahl.

six—counting the captain, an engineer, a stoker, and a boy to watch from the crow's nest—and it was never more than a dozen. Crewmen were still needed to secure the dead whale and set the small stabilizing sail on the mizzenmast, but for little else. As the industry developed and as the Antarctic became the principal hunting ground, the catchers became bigger and more powerful. The power source shifted from silent steam to noisy diesel, the hunting style necessarily changed from careful stalking to hard pursuit—to tire the whale—and radios and airplanes enhanced the supply of information at the disposal of the catcher captain, but fundamentally the catcher remained the same.

The modern fishery was a throwback to the hunting conducted around Spitsbergen in the seventeenth century, and on the coast of New England in the early eighteenth century. That is, whalers became purely catchers, and the whales were brought back to shore to be processed. The processing initially consisted of the reduction of blubber to oil, but eventually techniques were developed for cooking and pressing the meat and bones to obtain more oil, and then for grinding meat and bones to make fertilizer (guano) and animal feed.

In the new industry the labor force did not consist chiefly of seamen, as it had in the old industry. Most of the workers were manufacturing employees; they processed the carcasses, but never went to sea. The lives of the seamen on the catchers also differed from those of the crews of the earlier American whalers. The original Norwegian catchers were typically at sea for a day at a time, rather than the three or four years spent by vessels in the American fishery. Perhaps for that reason, as well as the consistently good catches made in the early years of Norwegian whaling, risks were borne chiefly by the owner. Crewmen were paid a wage (as were shore hands); usually there were also performance bonuses, related to the number of whales taken. Large bonuses went to the gunner (usually the captain), and smaller ones to the rest of the crew.¹³

The transfer of the processing operations ashore placed a premium on getting whales back to port quickly, and the premium increased with the innovation, early in the twentieth century, of techniques for using whale oil to produce cooking fats. The oil had to be fresh. Catchers had to reach the station quickly, hauling one or two heavy whale carcasses. They had to be powerful and fast, and they could not operate very far from the shore station.

13.1 Expansion beyond Finnmark

Modern Norwegian whaling began in the waters off Norway; it soon spread to other places. Two developments of the early twentieth century hastened its dispersal. First, Norwegian herring fishermen had noticed that herrings and fin

13. As catches declined in the late 1930s due to overhunting, the Norwegian union representing the crewmen bargained (successfully) for a redistribution of the compensation package, so that more came from fixed wages and less from bonuses.

whales appeared together; they surmised that the slaughter of the whales would lead to the disappearance of the herring.¹⁴ They were mistaken but adamant, and were joined in their opposition to whaling by other fishermen, by conservationists, and by neighbors of whale-processing plants, offended by the pollution of air and water that resulted from their operations. Following a violent period, during which at least one whaling station was destroyed, legislation was passed in 1904 to prohibit whaling off the coasts of Norway.¹⁵ The first phase of modern whaling had come to a close. In 1868–1904 the Finnmark whalers had destroyed about eighteen thousand whales (Tønnessen and Johnsen 1982, 61–68). The new equipment had been thoroughly tested and the human capital needed to expand the industry had been formed. New grounds had to be found, and new shore stations established.

The second development leading to the dispersal of the industry was the innovation of the hydrogenation process, invented and widely disseminated early in the twentieth century. According to Gordon Jackson (1978, 178) the demand of the soap industry for fats was expanding so rapidly that conventional sources were unable to supply the market at stable prices. In addition, margarine, introduced in the last third of the nineteenth century, was winning large European markets. Hydrogenation converted liquid oils to solid fats that could be used for both soap and margarine, and helped eliminate the fat shortage.

In the case of whale oil, hydrogenation produced a white fat with no fishy odor or flavor.¹⁶ Whale oil could therefore pass muster for the margarine industry.¹⁷ The fat melted at low temperatures and for this reason could not be the exclusive constituent of margarine, but the problem was overcome by combining whale-oil fat with other fats. Hydrogenation opened a new market for the products of Norwegian whaling, and in 1929 a further technical development permitted the production of good margarine from whale oil alone. The industry had been selling chiefly to a narrow market, the Scottish jute industry. The opportunities presented by hydrogenation were very much richer than those offered by Scottish industrialists.

The output of whalers now expanded rapidly, but the price of whale oil

14. Icelandic and Norwegian legend tells of a type of whale that drives fish toward the shore for man. To Finnmark fishermen the fin whale was the "fish-driver" (Harrison Matthews et al. 1968, 19).

15. The prohibition was rescinded within twenty years, as an element in a Norwegian campaign to win whaling concessions in the Antarctic from Great Britain (Tønnessen and Johnsen 1982, 342).

16. Sperm oil, which is a kind of wax, not a true oil, cannot be hydrogenated. The markets for sperm and whale oil remained entirely separate. This meant that processing plants took only one kind of whale at a time. Sperm whales typically were hunted before the rorqual season, and, after the cleansing of all the equipment, rorquals would be taken.

17. There remained resistance to the use of whale oil in both margarine and soap, because producers feared that consumers would object to it. Consequently, whale oil was generally mixed with other oils. By the end of the 1920s, however, the prejudice had substantially abated. For good accounts of these matters, see Jackson 1978, 178–82; Tønnessen and Johnsen 1982, 228–31.

drifted upward, following the general price indexes of the Western world in the first two decades of the twentieth century. The Norwegians organized whaling stations around the world—in Spitsbergen, Iceland, Ireland, the Shetlands, the Hebrides, the Faeroes, Labrador, Newfoundland, British Columbia, Japan, Korea—wherever rorquals were to be found (Crisp 1954, 109; Dickinson and Sanger 1990). The northern stations proved to be particularly important, because there whalers learned how to flense and try out under conditions of extreme cold, in the presence of snow and ice. Knowledge was laid up that served them well when the great hunting grounds of the Antarctic were opened.

Why, under these improved market conditions, didn't American whaling revive? Why didn't Americans join the hunt for rorquals and become again the leading whalers in the world? There seem to be three answers to these questions. First, by the time the market for oil had revived, the American whaling industry was virtually nonexistent. There was little capital and there were few seamen on which to build a new industry. Second, such physical and human capital as existed was ill suited to the requirements of the new industry. The American fleet did not contain vessels easily converted into steam catchers, and American shipbuilders had a comparative disadvantage in building steel steam-powered vessels. American whalers knew the old hunting techniques; they understood the right, bowhead, and sperm whales they had once hunted. They did not know the new methods, and they had no experience in finding and killing rorquals. Third, margarine was a European product; it did not capture a significant share of the market in the United States, a nation rich in dairy products, animal fats, and vegetable oils. A new American whaling industry would have had to enter European markets more easily served by the Norwegians, and a whole new marketing apparatus would have had to be built. Proctor and Gamble did make efforts to enter European markets, but the firm that came to occupy the key position as buyer and seller was the British firm Unilever.

13.2 The Antarctic Hunting Grounds

The search for new grounds took the whaling nations into the Antarctic. The British, by dint of exploration in the eighteenth and early nineteenth centuries by Cook, Colnett, Ross, Smith, Powell, Weddell, and Briscoe, had claimed territories that were to be the sites of the first important group of southern shore-whaling stations. These territories, a set of islands and a promontory reaching out from Antarctica, encircled the Scotia Sea lying east and extending south of Cape Horn. They were called the Falkland Islands and Dependencies, and reading clockwise, starting at about ten o'clock, they were the Falkland Islands, South Georgia, South Sandwich Islands, South Orkneys, South Shetlands (at about eight o'clock), and Graham Land, a peninsula stretching north from Antarctica to the South Shetlands.¹⁸

18. Subsequently, the British laid successful claim to the shores and islands of the Ross and Weddell Seas, although they were increasingly unsuccessful at controlling whaling and raising revenues in these seas.



The last great whaling grounds were in the Antarctic. Whalers moved first into the Scotia Sea, then the Weddell Sea, and then the Ross Sea. Before Antarctic hunting ended, whalers had pursued whales off all the coasts of Antarctica.

Courtesy of the Printing Services Department at the University of North Carolina, Chapel Hill.

The early explorers reported large numbers of what they took to be right whales in this area and in the Ross and Weddell Seas, but no substantial efforts at hunting were made before the late nineteenth century, although considerable numbers of seals and elephant seals had been taken by the few vessels that passed through. In the early 1890s two parties of vessels, one Scottish and one Norwegian, independently set out for Antarctica to capture the right whales that had been reported by those early explorers. No scientific expedition of any scope had been in the area in almost fifty years; the voyagers of 1892 had little information on Antarctica, and what they did have was very old. The two expeditions found each other, but they found no right whales. Earlier explorers seem to have mistaken finbacks and blues for rights, and the two expeditions of the 1890s wanted nothing to do with rorquals. The Scottish party, in frustration, harpooned a blue, with the results described earlier in this chapter. Both parties gave up on whales and turned to sealing; in that activity they were quite successful (Chatterton 1926, 190–98).

The reports of rorquals attracted the attention of Foyn, who proposed an expedition to be financed by British capital and to use Norwegian techniques. Nothing came of this proposal, but the reports of the Scottish and Norwegian parties led to a series of scientific expeditions that further stimulated interest in the area.

They did more than that. One of the scientific vessels, the *Antarctica*, was commanded by C. A. Larsen, an experienced Norwegian whaleman who had commanded one of the Norwegian vessels in the whaling venture of 1892. The *Antarctica* was caught in the ice of the Erebus and Terror Gulf and crushed.¹⁹ Larsen escaped and eventually fetched up in Argentina, where he was treated as a hero and where he found the financing for the first modern whaling voyage to Antarctica—that is, the first Antarctic voyage in pursuit of rorquals. A license to hunt was obtained from the British government, a shore station was set up on South Georgia, and a Norwegian steam catcher was purchased. The year was 1904 and the Antarctic was about to be opened to modern whaling.

The significance of British occupation of the Falklands and Dependencies now became clear. Moved by conservationist motives, the British governor general, Sir William Allardyce, limited the number of licenses awarded to whalers, set rules (1908) encouraging the use of all parts of the whale (obtaining oil from blubber, body, and bones; producing feeds and fertilizer from body and bones), and prohibiting the hunting of young whales and whales accompanied by calves (Burton 1983, 161–62). Allardyce's successors continued his policies.

The whalers were thus under administrative constraints. Technology established a second constraint. Since carcasses had to be processed quickly lest the quality of the oil deteriorate, the grounds that could be exploited from a given shore station were limited to those relatively nearby. Improvements in

19. The gulf was named after two British vessels in one of the early journeys of exploration.

the speed and power of catchers expanded this area, but not without limit.

The innovation of factory ships eased the technological constraint. Factory ships were, as their name implies, whaling stations located aboard large freighters (eight thousand to thirteen thousand tons). When the factory ship and its catchers moved into a hunting area, the catchers would bring whales to the mother ship, where they would be processed alongside.

The use of factory ships did not entirely free whalers from British control. Since processing could not be conducted at sea, a ship had to find a sheltered bay in which to operate, and so long as the bay lay within British territory—which was extensive—the ship was, at least in principle, subject to British regulation. As compared with shore stations, factory ships had an important disadvantage. Despite their great size they did not have the space available in a shore station. Consequently, they were obliged to concentrate on obtaining oil; by-products, constituting substantial and growing shares of the value of output of the shore stations, were left largely unexploited. As Bjørn Basberg (1993, 157) puts it:

From the beginning of Antarctic whaling both shore stations and floating factory ships were in use. In the first twenty years, up until around 1925, shore station whaling was technologically superior. The ships could certainly move from one catching ground to another, but they were dependent on sheltered waters where the whales could be flensed alongside and where they could find freshwater for the cooking operations. In reality . . . the ships . . . operated in ways similar to the shore stations, but with more disadvantages—with lesser space both for production and storage, more clumsy freshwater supply etc.

The factory ships now began to disengage from the land and to ignore British regulations. The first step took place in 1924, when several factory vessels broke into the Ross Sea and found an extraordinary supply of unusually fat whales, chiefly blues. Working conditions were extremely difficult, because temperatures were so low—the blubber of the dead whales froze solid and had to be hacked away with axes; the flensers more than once refused to perform in these execrable conditions and because of the profusion of ice floes, but here for the first time flensing was done on the ice, rather than in some sheltered bay. Whalers soon found that whales were equally available and working conditions were better outside the Ross Sea, around the Balleny Islands. Very large amounts of oil were produced, despite the failure of the factory ships to convert as great a fraction of the oil contained in the blubber and bodies of these whales as shore stations commonly did.

These ventures into the Ross Sea expanded knowledge of the Antarctic and stimulated further scientific interest in the continent. There had been a regular interplay between whaling ventures and scientific expeditions since the early nineteenth century, and scientific activities expanded until in 1912 the Amundsen and Scott expeditions both reached the South Pole. By 1925 whalers had much more accurate information at their disposal than ever before.

Innovations that date from the 1920s strengthened the move to pelagic whaling. Chief among them was the stern slipway, an inclined plane descending from the main deck of the factory ship to the water. A captured whale could be brought to the slipway by the catcher and hauled by its flukes onto the main deck, where processing would take place.²⁰ All the activities of a shore station were conducted on this enormous factory ship (thirteen thousand to sixteen thousand tons). The blubber was removed and tried out; the flesh and bones were cut up, cooked, and pressed to obtain additional oil; and flesh and bones were ground up for animal feed and fertilizer.²¹ Other innovations were the freshwater evaporator, much improved cookers, and “separators and centrifugal machines which could separate the whale oil even in [a] rough sea” (Basberg 1993, 157). These factory ships were independent of the shore stations and therefore free of British regulation.²² The modern shape of the industry was established.

Four years after the invention of the stern slipway, the hydrogenation process was improved, so that whale oil, converted to a solid state, could be maintained at higher temperatures than formerly. The market for whale oil was augmented, as margarine could be made from whale oil alone, unmixed with other oils.

The slaughter achieved unprecedented levels. “In 1925, when the *Lancing* [the first stern-slipway factory ship] made her first voyage, the total Antarctic catch was 10,488 whales. In 1931 it rose to 40,201” (Burton 1983, 165–66). Almost three-quarters of this number were blue whales. In that one year the modern industry killed more than 10 percent as many whales as the American industry had destroyed in the entire nineteenth century. Well over 1,000,000 whales were captured between 1904 and 1978, compared with something over 350,000 during the nineteenth century (see chapter 4).

The harvest in 1930–31 was so great that the market for oil was swamped, and fears were raised that the whales would be driven to extinction. In the following season the Norwegian government declared a moratorium—well observed by Norwegian whalers, but not by the English. Only seven factory ships operated in this year, compared with forty-seven the year before (Burton 1983, 166). The number of Antarctic whales taken fell from 40,201 to 9,572.

By now the structure of the whaling industry had changed importantly from what it had been in the days when the Finnmark ground was the chief source of whales and the Scottish jute makers were the chief buyers of oil. Further important changes were just over the horizon.

In the early 1930s Norwegian firms were still predominant, and Norway

20. A device for hauling the whale aboard—the Gjeldstad claw, a kind of enormous pair of pliers that grasped the flukes—was patented in 1931. A winch drew the claw and the whale up the slipway to the cutting-in station (Tønnessen and Johnsen 1982, 706).

21. The fraction of the total potential output from the whale that factory ships obtained still did not match the record of the shore stations.

22. The British claimed the right to exercise controls in their territorial waters, and whalers were initially inclined to accept the claim. But, as time passed, “pirate” voyages increased in number and importance, and the British showed no strong disposition to stop them.

supplied the lion's share of whaling crews, but other nations were becoming more important players. Of the total number of floating factories produced between 1928 and 1940, fifteen were registered in Norway, ten in Britain, six in Japan, three in Germany, two in the United States, and one each in the USSR, South Africa, and Panama. Furthermore, many Norwegian firms got at least part of their finance from other countries, notably Great Britain and Argentina. In 1930–31 all Antarctic whaling crewmen were Norwegian, while by 1939–40 the figure had fallen to 59 percent; the Japanese alone accounted for 28 percent of crewmen. The decline in the role of Norway was accelerated by disputes between the union representing Norwegian crewmen and their foreign employers, especially the British. Issues of nationality—always of some importance—were becoming much more significant.

As to markets, soap makers now took a substantial fraction of output, and one firm, British Unilever, was the chief buyer, both for itself and in its role as an international distributor. It was faced, across the market, by a selling pool of Norwegian firms. Production of margarine expanded on the Continent, especially in the Low Countries and in Germany. These were new and important markets that led to a reorientation of the whaling industry.

The relations among the participants in these activities would provide materials for an interesting set of studies in industrial organization and labor economics—also in diplomatic history, since whaling firms were not reluctant to call for assistance from their governments, and governments heard these calls and acted on them.²³ For example, the Norwegian government attempted to mediate between Norwegian whalers and the British officials of the Falklands and Dependencies; the Norwegian government also called for the moratorium of 1931–32. Late in the 1930s negotiations on quotas and hunting seasons—developed for conservationist reasons—were carried out exclusively by governments.

Industrial organization, labor economics, and diplomatic history are not of central concern to this narrative. Three major developments of the 1930s that border on these areas *are* important. First, the great international economic collapse had particularly devastating impacts on the prices of raw materials, and public policies were adopted to protect European producers of raw goods, particularly agricultural goods. One such policy, widely adopted in Europe, promoted the interests of butter producers by discouraging the production and consumption of margarine. In Germany, actions against margarine were intended not only to protect farmers, but also to save scarce foreign exchange and to enhance German self-sufficiency in preparation for the coming war. The problem of foreign exchange could be dealt with in another way, however: Germany could acquire a whaling fleet of its own. This it did, and very cheaply,

23. The requisite support was not always forthcoming, however. In 1931 a Norwegian firm instituted suit in English courts against Unilever over an oil contract. The Norwegians lost in King's Bench and in the Court of Appeal, but won in the House of Lords, to the tune of £447,160 (plus costs) (Tønnessen and Johnsen 1982, 391).

by using economic pressure to force Unilever to finance the required vessels. German policy thereafter did not deter the hunting of whales. The German fleet—along with the fleets of Japan and the USSR—began to shoulder aside the fleets of the old whaling nations, Norway and Great Britain.

Second, the decade saw some serious efforts at conservation. Motives were mixed. Norwegian and English whalers at the beginning of the decade—when they dominated whaling—attempted to restrict hunting by adopting a quota system and by limiting the duration and timing of the hunting season. Their immediate purpose was to deal with the glut in the market, but concerns were also expressed over the future of whale stocks and thus the future of whaling. Norwegian whaling was already constrained by domestic legislation with a conservationist bent, and the Norwegian whaling companies were attempting to internationalize the rules that bound them.²⁴

In the fall of 1931 a committee of the League of Nations reported a set of proposals for the regulation of whaling. Among them was a call to prohibit the hunting of right whales, as well as of lactating females and calves of any species. The proposals—which in important respects paralleled Governor Allardyce's rules—were widely praised and assented to, although it is not clear that they altered whaling practices substantially.

Third, the entry of the Germans, Japanese, and Russians into the whaling industry made control more difficult than it had been when virtually all the hunters had been under Norwegian and English direction. Even in these earlier circumstances it was not easy to reach agreements and to police them. With the introduction of new hunters, each with somewhat different goals and perceptions, regulation became much more difficult to achieve. The English and Norwegians—particularly the latter—accepted quotas and short hunting seasons, while the new hunting nations—particularly the Japanese—did not. It is no surprise to find that the British and Norwegian shares of the world catch declined through the 1930s, and the shares of the Japanese and Germans rose.

As the 1930s wore on, the world economy began to recover, and recovery, by raising demand and encouraging an expansion of hunting, promoted a breakdown of regulatory agreements. A major break came between the hunting seasons of 1936–37 and 1937–38. In the latter, 46,039 Antarctic whales were killed, the largest seasonal total in the history of whaling. In the following year the catch dropped precipitately, even though the number of catchers on the ground was greater than the year before. The structure of the catch also shifted in ominous ways. In 1938–39 the share of blues—the favored prey—fell sharply; the next year the share of fins—the next most favored—also fell.

24. The issues were more complex than this simple statement suggests. In the Antarctic the English tended to be conservationist in the rules they laid down for hunters, and the Norwegians—hunting firms and government—argued for a relaxation of rules. The reverse tended to be true in the north. Each nation favored conservationist regulations in its own territories, but not in the territories of others. There were also differences within groups. For example, Unilever took the position that market forces would prevent the destruction of whale stocks, a view widely at variance with that of the governors of the Falklands and Dependencies.

Clearly, whale stocks were being seriously damaged (Tønnessen and Johnsen 1982, 390–413, 457).

13.3 World War II, Postwar Controls, and the International Whaling Commission

World War II temporarily reduced the slaughter. The effect was not immediate. Until Norway was occupied by Germany, the Norwegian fleet continued to operate, and the Japanese hunted extensively until Pearl Harbor. Even thereafter they continued to hunt in their own territorial waters. To obtain high quality, noncorrosive lubricating oil, sperm whales were taken throughout the war. Eventually, however, the whaling fleets were virtually eliminated. Factory ships were converted to freighters, catchers, to convoy patrol vessels. Losses were heavy. Most of the factory ships and many of the catchers were sunk by German raiders and submarines, or they were worn out in service. The war gave all of the whale populations time to recover from the heavy prewar hunting, but the recovery was by no means complete. Whales are long-lived animals that take years to come to sexual maturity (see chapter 4). For complete recovery, a moratorium of one or two decades would have been needed; for some species even those intervals would not have been sufficient.

With the war over, the whaling nations went back to hunting on a large scale. There were limited efforts at conservation. The International Whaling Commission (IWC) was formed in 1946, and the chief whaling nations agreed to adhere to the rules it laid down, but its techniques proved to be inadequate.

The IWC was created to “preserve the stocks of undepleted species and permit the increase in numbers of those already depleted” (Small 1971, 175). The commission, although at first concerned only with Antarctic whaling, established minimum length requirements for the various species of whales, set opening and closing dates for the hunting season, and imposed national quotas and a limit on the size of the total catch. Originally seventeen nations signed the treaty, but most of them did not engage in whaling on a large scale. In 1978, for example, the Japanese and Russians between them took 80 percent of the catch of the member countries (Frost 1979, 38, 39).

Although a significant improvement over previous attempts, the IWC agreement had two serious flaws. First, since any member nation could exempt itself from an IWC regulation merely by raising an objection, each country had an effective veto over any new regulation. For example, in 1954 the commission voted to prohibit hunting of the blue whale in a limited area in the Antarctic. A single objection from the Dutch doomed the regulation. Second, quotas were not defined for each species, but were set in numbers of “blue whale equivalents.”²⁵ This definition led to the progressive exploitation of one species after another as whalers concentrated “their efforts on the most valuable spe-

25. One blue-whale unit = 1 blue whale = 2 fin whales = 2.5 humpback whales = 6 sei whales (Burton 1983, 167–68).

cies while leaving less valuable ones untouched. They hunted and killed the blue whale as long as possible and then shifted to the fin whale. When the fin whale became scarce they concentrated their harpoons on the sei whale” (Small 1971, 182). Species quotas would have been a more sensible conservation measure, but the member nations would not agree to such a change.

By the early 1960s it became apparent to almost everyone that Antarctic whales were seriously overhunted. The IWC commissioned a major independent study of the current stock of whales. The findings of the so-called Committee of Three were so persuasive that over the next decade a series of more effective conservation measures were actually adopted. The blue whale was granted complete protection in 1965, species quotas were adopted in 1970, and a system to monitor each nation’s whaling activity was put in place.

13.4 The End of Whaling?

Whaling activity gradually declined, partly because stocks were so depleted as to discourage whaling, and partly due to conservationist activities. The intensity of opposition to whaling increased in the 1970s and the 1980s. One nation after another abandoned whaling, and the United States also banned the importation of whale products. In 1982 the IWC, now “comprising 36 governments representing 85% of the world’s population,” suspended commercial whaling beginning in 1986 (*Dolphins, Porpoises, and Whales* 1991, 10). The IWC decision was followed, and at the beginning of 1992 Japan and Iceland were the only whaling nations. The Japanese claim that their hunting is motivated by scientific, not commercial, considerations; this claim is not widely accepted outside of Japan.

In July 1992 the Norwegians reversed themselves and reentered the ranks of the whaling nations. How far the actions of the Norwegians will influence other nations is not yet clear, nor is it certain how the stocks of whales will be affected (for a pessimistic view see Matthiessen 1995). As things stand presently, there is no whale species—except perhaps the right—that is in danger of extinction. The hunting of grays has been suspended since 1946, and the eastern Pacific population has fully recovered. The blues, humpbacks, and bowheads—three groups about which there was deep concern in conservationist circles only a few years ago—now seem to be recovering, slowly but well. The bowheads are still hunted by Inuits, who do them little damage; the blues and humpbacks are currently hunted by no one. The hunting nations now restrict themselves to fins, seis, minkes, and some of the smaller whales. None of these groups is currently endangered.²⁶

26. Various small riverine cetaceans are endangered. Their chief sources of difficulty are pollution, loss of habitat, and accidental death in fishing nets. The authority of the IWC over them is in question. Other small cetaceans—not endangered—are hunted by the Japanese and the Faeroe Islanders (*Dolphins, Porpoises, and Whales* 1991, 6, 9, 13, 28, 35, 41, 117, 249).