forests, while the Park Service prefers facilities which require no permanent installations. Mining is not allowed in most national parks, although it is permitted at Mount McKinley in Alaska.

It is the mining provision in the Wilderness Act that has caused the most unhappiness among conservation groups. In the area encompassed by the North Cascades bill, there are an estimated 91,000 mining claims. Of those, 590 have been patented. Despite the large number of claims, there has been relatively little commercial mining in the area over the years. There are no commercial mines in operation now on any lands covered by the North Cascades bill.

The decision on what is to happen to the area now rests with a Congress which has shown no signs of acting on the measure. The Senate Interior and Insular Affairs Committee, under the chairmanship of Senator Jackson, held hearings on the bill in Washington, D.C., and in the state of Washington in the spring. Since that time the bill has been locked up in committee. Senator Jackson has said he hopes the bill will be acted on prior to adjournment, but the committee will not release the North Cascades bill until the Senate has acted on the bill for a Redwood National Park (*Science*, 30 September 1966 and 28 July 1967).

In the House, the Interior and Insular Affairs Committee headed by Representative Wayne Aspinall (D–Colo.) has yet to schedule hearings on the measure. No one is optimistic about the bill's future in the House, although Representative Meeds, who is a member of Aspinall's committee, believes it will pass eventually in some form.

—KATHLEEN SPERRY

Whales: Decline Continues Despite Limitations on Catch

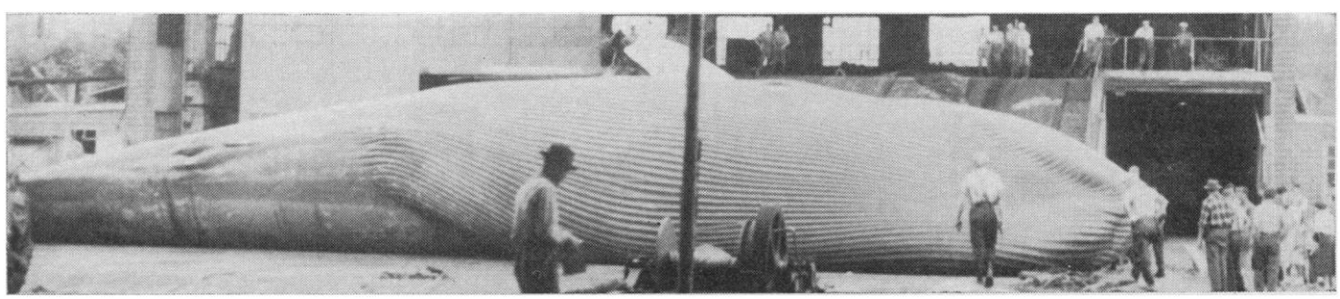
Whaling as an industry has gone past the point of diminishing returns. As for the whales themselves, conservationists say their very survival is threatened. In the case of the largest whale of all, the great blue whale, some observers feel it may be too late now for that leviathan no matter what is done.

Since World War II, whalers have gone about their work with a growing efficiency that is putting them out of business. So grim are the statistics of the industry that only three nations—Japan, Norway, and the Soviet Union—still engage in pelagic whaling, that is, whaling from oceangoing ships.

Hope for the whales lies mainly in the efforts of the International Whaling Commission, which was established in 1946. Fifteen nations now belong to the commission, including the principal whaling nations, but the organization is an entirely voluntary one, and resistance to putting into effect an international inspection system on whale catches has contributed as much as anything to pessimism about the future of the whales.

Signs of the situation can be read in the decline of the "yield" and reduction in Antarctic whaling fleets in recent years. In the 1964-65 whaling season (December to April) there were 15 whaling expeditions to the Antarctic. In 1966-67 there were nine expeditions (four Japanese, three Russian, and two Norwegian). The catch last season was four blue whales, 2893 fin whales, and 12,893 of the smaller sei whales, or the equivalent by IWC reckoning of 3511 blue whale units (a blue whale unit equals two and a half humpback whales, two fin whales, or six sei whales). Some 4960 sperm whales were also reported caught in the Antarctic. The year before, when there were ten expeditions to the Antarctic whaling grounds, an equivalent of 4089 whale units were caught, 578 more than last season.

The best-known work of the IWC has been the setting of catch limits for the Antarctic. A recommendation on safe catch limits is given each year to the commission by its scientific committee made up mainly of scientists drawn from the fisheries ministries of the commission's member countries. This year the committee recommended a catch limit of between 3100 and 3600 blue whale units. At its annual meeting held late in June in London, a limit of 3100 was put forward but was rejected as too low. Norway, which is faced with competition from the powerful Japanese and Russian whaling fleets and was unable to catch its full quota last year, asked for a limit of 3500. After hard bargaining, the limit for the coming season was put at 3500. (This, in effect, means fin and sei whales. Because the blue whale



R. M. Gilmore

Female blue whale on deck at whaling station of British Columbia Packers, Coal Harbour, north Vancouver Island, B.C.

population has declined from an estimated 100,000 thirty years ago to about 1000 today, the blue whale is now completely protected.) In 1965-66 the catch limit was 4500 blue whale units; last season it was 3500.

The commission at its meeting also decided to extend the ban on killing humpback whales in the North Pacific area for a further three years and to extend to the whole of the Southern Hemisphere the ban on the taking of blue whales, thus making the ban complete.

Saving the whales would seem to require that catch limits be extended to all regions and to the activities of land stations. Outside Antarctica last season, 24 land stations and seven factory ships accounted for 29,536 whales and a total of 929,194 barrels of oil compared to 600,130 barrels from the 1966–67 catch in Antarctic waters. There is a fear, apparently well-grounded, that the reduction of quotas in the Antarctic will drive whalers to heighten the attack on sperm whales outside Antarctic waters where female breeding stocks are found.

The obvious weakness of the IWC is that it depends on voluntary cooperation without sanction of international law. In recent years, the commission has been able to speak with greater certainty about whale stocks because of advances made in the study of whale population dynamics and because of the help of its own scientific committee and of a whale stock assessment group formed by the United Nations Food and Agricultural Organization. Concerning noncooperation from some nations that conduct whaling from shore stations and do not belong to the commission and concerning infractions by its members, the commission must speak softly since it carries no stick.

A perennial disappointment for the commission has been its failure to achieve a workable inspection system. In 1963, an agreement was reached on an international observer scheme which would have placed inspectors from other nations on whale-catching ships. The agreement was never implemented and ran out last year. Supervision of catches now depends on government inspectors who sail on their own country's vessels. This year a working group of the commission recommended that a system of regional inspection schemes should be initiated to provide for stationing of inspectors of one nation on factory ships or land stations of another. Work on the scheme, however, seems to be in abeyance.

The great difficulty for the commission is that the pelagic whaling nations are reluctant to see restrictions tightened further. The Japanese depend on the whale catch as an important source of food protein, and Japanese owners have a big unamortized investment in their commercial whaling fleet. The Soviet Union, with its formidable state-owned whaling fleet, might be more amenable to mothballing part of the fleet during a period of low-catch limitation, set to allow whale stocks to recover. But the Soviets, who have worked on a lower national quota than the Japanese, have been pushing for a bigger share for themselves of whatever total is being taken.

The IWC is explicitly barred from setting national quotas. These are set by the pelagic whaling nations on the basis of the IWC total catch limit, and each year it seems to get harder. The three interested parties met in London after the recent IWC meeting to try to work out shares, but failed to agree. They will meet again this month, but nobody is quite sure what will happen one day if they finally can't agree.

What almost everyone, from the pelagic whaling nations and elsewhere, does agree on is that the writing is on the wall for the whales. Conservation principles and long-run economic interests both dictate that lower kill quotas be set to raise sustainable yields in the long run. But logic and sentiment seem to need the support of workable law.—JOHN WALSH

APPOINTMENTS

J. T. Grace, Jr.

James T. Grace, Jr., assistant director, to director, Roswell Park Memorial Institute, succeeding George E. Moore. . . . **Seymour Katsh**, on leave from the position of professor of pharmacology, University of Colorado, Medical School, to metabolic biology program director, NSF. . . . **Alan M. Kraft**, director of the Fort Logan Mental Health Center, Denver, to director of the 500-bed psychiatric hospital to be built in Albany by the New York State Health Department of Mental Hygiene, and professor of psychiatry, Albany Medical College. In September 1968, he will become chairman of the department of psychiatry and psychiatrist-in-chief at Albany Medical Center, succeeding **William L. Holt,** who will retire. . . . **Victor M. Blanco,** director, division of astronomy and astrophysics, U.S. Naval Observatory, Washington, D.C., to director of the Cerro Tololo Inter-American Observatory, La Serena, Chile. . . . **Philip Oetking,** research geologist, Southwest Center for Advanced Studies, to director of the newly established Ocean Science and Engineering Laboratory, Southwest Research Institute. . . . **Glenn Terrell,** dean of faculties, University of Illinois at Chicago Circle, to president of Washington State University. . . . **Katherine B. Oettinger,** chief of the Children's Bureau, HEW, to deputy assistant HEW secretary for family planning and population.

RECENT DEATHS

Russell J. Beers, 56; associate professor of bacteriology and adviser to undergraduate students in bacteriology, Iowa State University; 24 July.

Raymond M. Hainer, 49; senior vice president and head of the research and development division, Arthur D. Little Company, Cambridge; 25 August.

Myrtle E. Johnson, 86; professor emeritus of zoology, California State College, San Diego; 16 August.

Gregory G. Pincus, 64; research director, Worcester Foundation for Experimental Biology, research professor of biology, Boston University, and developer of the oral contraceptive pill Enovid, and of Estrone, a hormone used in the treatment of breast cancer; 22 August.

David Potter, 73; professor emeritus of botany, Clark University; 7 August.

Walter R. Stahl, 37; scientist, department of biometrics, Oregon Regional Primate Research Center; 30 July.

Daniel E. Strain, 63; associate research manager, polyolefins division, Du Pont Company's plastic department; 2 July.

Zolton T. Wirtschafter, 67; head of research, Veterans Administration Hospital, Portland, and associate professor of medicine, University of Oregon Medical School; 18 August.