

ion in search of new whaling grounds.

By the turn of the century several national flags fluttered over Antarctic horizons. All other continents had already been explored and carved up; only Antarctica remained. Considerable prestige was at stake in its exploration, and especially in the quest for the South Pole. The tragic heroism of Scott's struggle against Amundsen for the pole has rather overshadowed the dawn of science in Antarctica. Between 1900 and 1914, however, there were scientific expeditions from Sweden, Germany, Australia, France, and Japan as well as those from Britain and Norway.

In this period also came the first national claim on the continent, by the British in 1908. In claiming the peninsula region they legitimised an income of licence fees and royalties from Antarctic whalers. A succession of claims was to follow, including those by New Zealand and Australia, until Antarctic maps resembled a pie cut into frosty slices of various sizes.

At mid century, when polar exploration again resumed after the Second World War, only Marie Byrd Land was still unthumbed. Though the Americans had been active there, they chose to keep their options open, and this most inhospitable of sectors was never claimed.

The strategic Antarctic peninsula region, on the other hand, was also claimed by Chile and Argentina, which created an impossible three-way contest with Britain. Antarctica's territorial dissection was complete, and the legacy today in Antarctic affairs is an extremely knotty problem.

Fortunately, science intervened and inspired a workable solution. During the Inter-

national Geophysical Year of 1957-58 (IGY) the 12 nations with interests in Antarctica co-operated to implement a scientific programme on an unprecedented scale. The International Geophysical Year was a great success in international co-operation, and Antarctica's human population burgeoned. The shelving of political activity which made it all possible was formally promulgated in the Antarctic Treaty of 1959, which was signed by all the participating countries, or consultative parties, as they are officially termed (see box on page 13).

International science in Antarctica has no parallel, and the success of IGY has been sustained by a genuine freedom of information and scientific exchange. Antarctic science has yielded remarkable results in a wide variety of disciplines, and New Zealand's contributions have been highly regarded. The continent has provided crucial clues to the mysteries of plate tectonics (the movement of continental plates), as well as a much better understanding of world climate. Studies of the Southern Ocean have revealed a highly productive ecosystem, yet one whose simple food chains make it vulnerable to disruption.

Sterile laboratory

Antarctica's remoteness from the industrial centres of the Northern Hemisphere has made it a sterile laboratory, invaluable for baseline studies that can monitor increases in world pollution. It is at the poles, too, that the global warm-up, stemming from rising atmospheric carbon dioxide levels, will have its direst effects. Research suggests that the West Antarctic Ice Sheet (the smaller partner in the polar ice cap) is already in danger of collapse, which im-

plies an eventual rise in world sea levels by about 5 m.

Of course, science is not the only reason for the human presence in Antarctica. Since the 1950s national interests in the continent have been fuelled by two tangible concerns — strategic considerations (underlined by the global impact of the Second World War) and the prospect of mineral wealth, which dates from Shackleton's discovery of coal in the Transantarctic Mountains. But by the time of IGY it was obvious that world interest in Antarctica was too great for any one country to assert its claims and "go it alone". Scientific activity in the Antarctic is therefore the only way in which a country may participate in the collective decisions of the Treaty nations.

Until the 1970s the Treaty system worked remarkably well. True, the bases there were strewn with rubbish and discarded supplies, as were the favourite haunts of scientists, but the world was intrigued by a peaceable kingdom of ice, penguins, and seals—and what remained of the whales. In this decade, however, the world's industrial economies for the first time felt the pang of limited resources. Simultaneously, the Arabs discovered the power of their oil cartel.

Negotiations also began for the United Nations Law of the Sea Conference, whose principal concern has been the mineral resources of the deep sea bed. Though in the past the Treaty nations had always forestalled UN initiatives in the Antarctic, these particular discussions posed some awkward questions regarding control of the sea bed adjacent to Antarctica. Given the icy fluctuations of the continent's coastline, the Antarctic Treaty's delimitations had never been very clear, yet some answer to